Inequality

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Sociological measures of inequality

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Introduction

Concepts and measures of 'social class' and of 'social stratification' are used extensively within sociology and its cognate disciplines, but differ from indicators of inequality such as earnings, income, wealth, educational attainment and local area deprivation that are used elsewhere in this volume. This commentary outlines characteristics of sociological measures of inequality, discusses their relative merits, and highlights some different conclusions and interpretations that a focus on sociological measures can bring to our understanding of inequality.

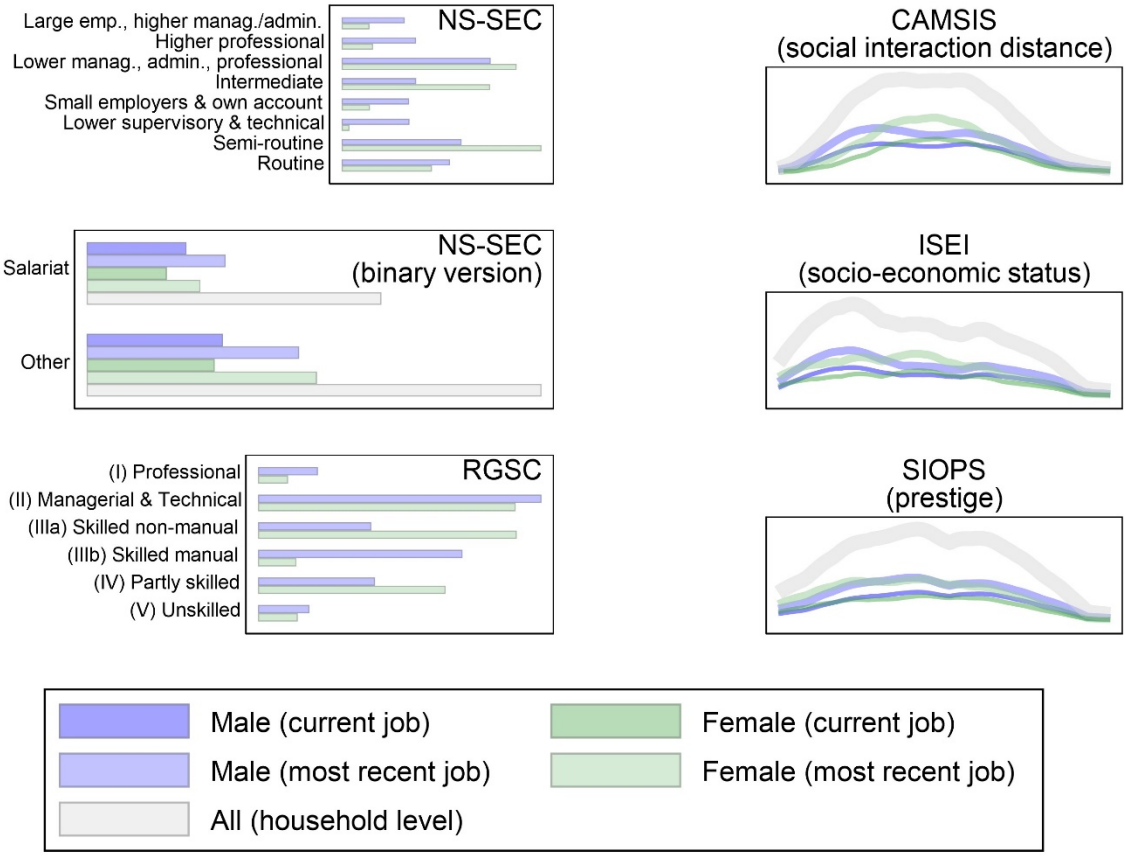
Measures used in sociology

Measures of social class, for the purposes of this discussion, are schemes that categorise a population into different groups ('social classes'). In sociological literatures, the categories are usually but not necessarily based upon occupations, and the wider intention is to indicate groups of people whose lives are characterised by enduringly different experiences in the inequality structure. Measures of social stratification, as discussed here, refer to a wider range of indicators of position within an inequality structure. Stratification measures include those that categorise populations into social classes, but they also include other measurement formats, such as assigning a score on a scale ('stratification scales'). In sociological literatures, social class measures tend to be the more popular instruments for studying social inequalities, particularly in European traditions where 'class' is often used as a synonym for social inequality. However, continuous measures such as 'socio-economic status' and 'prestige' scales based on occupations are also widely used, especially in sociological research in the United States. For ease of reference, Figure 1 names a few examples of popular sociological measures and illustrates their distributional features for the UK. Publications that describe and compare different sociological measures include Barone, Hertel and Smallenbroek (2021), Lambert and Bihagen (2014) and Bukodi, Dex and Goldthorpe (2011).

Like any other inequality indicator, a sociological measure works, first and foremost, as a 'statistical tool for understanding differences in social structures and socio-economic inequalities' (Rose and Harrison, 2010, p. 3). Sociological measures are frequently (but not necessarily) based upon data about occupations, and they are often (but not always) categorical in nature. Conventionally, the characteristic that makes a measure a sociological one is simply that it is explicitly linked to a sociological theory or conceptualisation about a socially rooted structure of resource inequality. One of the most popular contemporary sociological measures of social class, for instance, is based upon a theory that differences in employment relations and conditions mark particularly important boundaries of the inequality structure (e.g. Goldthorpe, 2007). In addition, sociological theories usually concern 'enduring' inequality structures – sometimes called the 'social organisation of inequality' and its reproduction through time (e.g. Bottero, 2005). An important implication is that although most sociological measures are derived from only one piece of information (such as the occupation held by a person), it is nevertheless intended that they reflect longer-term life chances or experiences to some degree.

[1] Thanks to Lucinda Platt for her suggestions and insights which helped in developing this commentary.

Figure 1. Distribution of the adult population of the UK according to selected sociological measures of inequality



Note: All distributions are proportional to the total number of cases with valid records (sampling weights applied).

Source: Author's analysis of UKHLS data 2009–20 (University of Essex, Institute for Social and Economic Research, 2022).

Comparing measures

It is not a straightforward endeavour to compare between sociological measures of inequality, and those measures associated with other disciplines, such as income (cf. Bourquin, Brewer and Werham, 2022), earnings (cf. Giupponi and Machin, 2022), or local deprivation (cf. its use in Case and Kraftman, 2022). In the next sections, I focus on two issues concerning such comparisons. First, I discuss the operationalisation of widely used sociological measures, which is worth attention because implementations of sociological measures are often inadvertently confused or misrepresented, sometimes with non-negligible consequences. I then turn to examples where using a sociological measure might lead to different conclusions or results compared with an alternative indicator. There is not a simple way of expressing how sociological measures are different – reflecting the heterogeneity of measures and the variety of relevant application areas – but there are a few broad trends and noteworthy issues.

Before looking in more detail however, four overarching points are worth making. Firstly, whilst there are some interesting differences between different measures, it is valuable to appreciate that most available measures (sociological or otherwise) tap into substantially similar contours of inequality. Academic studies often focus upon small empirical differences between alternative measures, yet to an outsider, it might really be the 'ball park' similarity in the properties of different measures of inequality that seems more notable.

Secondly, there is no single sociological measure that is universally supported, rather there are many popular measures that take a variety of forms. This proliferation of measures can induce heterogeneity in empirical results, and can simply be confusing or off-putting to non-specialists (the nuances of certain measures are sometimes only appreciated by their keenest advocates). Empirically, there may sometimes be just as many consequential differences in the properties of two alternative sociological measures, as there may be between a given sociological measure

and one associated with a different tradition. As an example, Mastekaasa and Birkelund (2023) compare estimates of intergenerational association statistics that emerge using several different inequality measures. Of relevance to this discussion, they report that the differences between results based upon two popular sociological measures (the ESeC social class measure and the CAMSIS stratification scales, both described below) are comparable to, and sometimes greater than, those differences between either sociological measure and a high-quality earnings measure.

Thirdly, in response to many measures being available, some authors advocate a 'multidimensional' approach in which multiple inequality measures are added to an analysis simultaneously, on the presumption that they tap into, and disentangle, different sorts of social processes (e.g. Bukodi and Goldthorpe, 2013). However, multiple inequality measures can be substantially collinear, and the extent to which different measures do reliably disentangle the concepts that are associated with them when they are analysed in combination has been questioned (e.g. Bihagen and Lambert, 2018). Whether on principle or for pragmatic reasons, it remains more common for analysts to select only one inequality measure (sociological or otherwise) rather than to operationalise and analyse several at the same time.

Lastly, it is also common that researchers choose between measures on rather imperfect or pragmatic grounds. For instance, when a specific sociological measure is deployed in a given analysis, it is often because that is the measure that is usually used in that area of research, and/or is one that is easy to communicate within its specialist field. For example, the Registrar General's Social Class measure has traditionally been associated with research on health inequalities in the UK (e.g. the Marmot Review; Marmot et al., 2010). Sometimes choices are even more tenuously made – perhaps a project used the first measure that an inexperienced researcher found within a secondary dataset, or made some ad hoc adjustment to an existing measure. Although in theory it would be more compelling to do so, there is little evidence to suggest that many projects neutrally review a wide range of available measures and select one that is optimised to their research questions.

Systematic measures of social class and stratification

One common confusion about sociological measures relates to lay uses of the term 'social class'. In a country such as the UK, most people are familiar with the idea of social class, and many have quite strong normative views about which class they belong to (e.g. Sayer, 2005). Needless to say, lay uses of the concept of social class are not aligned with the definitions of social science literatures. For a start, systematic definitions would distinguish crisply between the ideas of class origins, subjective class identity and objective class circumstances, but these are divisions which lay uses often elide. Thereafter, lay understandings often feature strong assumptions about specific criteria that are said to define a person's class (e.g. accent, housing, leisure preferences, education), which rarely coincide with the criteria used in academic literatures.

Some order can be introduced if we focus on a narrower body of work that has sought to systematically specify and operationalise empirical concepts of class and stratification (e.g. Rose and Harrison, 2010). In these literatures, specialists are quite happy that they do know, and have laid out, what they consider to be the best available strategies for conceptualising and measuring social class and stratification – albeit they are often forced to watch in dismay as others disregard their prescriptions!

Different sorts of circumstances

Systematic measures of social class and stratification routinely distinguish between origins, subjective identity and objective circumstances. This point is occasionally misunderstood – for instance, commentators often discuss class inequalities without clarifying which of these circumstances they mean.

First, 'social class origins' are most conventionally taken to be a direct measure of the circumstances experienced by an individual during their childhood (cf. Cattan et al., 2022). Measures of social class origins form the basis of the sociological analysis of social mobility, an extensive and longstanding subject of sociological inquiry. Since the mid-20th century, a standard methodological recommendation is to measure origins using retrospective data on the

occupational circumstances of parents at the time an individual was aged 14 (e.g. Goldthorpe, Llewellyn and Payne, 1987, p. 43). Nevertheless, different procedures for measuring origins can reasonably be defended and recent studies have often measured multiple characteristics of the childhood circumstances based on, for example, parental occupation, income and education (e.g. Mastekaasa and Birkelund, 2023), sometimes extending to measures about grandparents or more distant family connections as well as parents (e.g. Moulton et al., 2016). Whilst practices vary, sociologists have often been quite agnostic about the measurement of social origins, recognising that multiple indicators are often correlated in any case. For instance, some studies favour a single question which asks respondents to indicate the approximate number of books in the home during their childhood, as this is felt to be a low-cost but reliable proxy for origin stratification circumstances.

In any case, social class origins are not necessarily the same as a second relevant category, 'social class identity' or 'subjective social class', which is conventionally treated as the answer a person gives if asked to define their own social class. In the UK in 2015 for example, Evans and Mellon (2016) report that around 60% of people when prompted will describe themselves as 'working class', a figure that has changed little over many years, even as the occupational structure has changed dramatically with far fewer jobs that we might think of as typically 'working class' and far more that are professional or managerial. Class identities can have important empirical associations, and evidence suggests that they are primarily unidimensional and broadly aligned with objective measures (e.g. Stubager and Harrits, 2022). However, class identities can also be shaped by considerations that can seem rather selective or inconsistent – sociologists in the UK have often highlighted seemingly implausible contradictions, such as the wealthy professional who insists that they are 'working class' on the basis of a selective memory of their parents' or grandparents' life courses or values (e.g. Friedman, O'Brien and McDonald, 2021).

Lastly, but most importantly for the rest of this commentary, individuals can be located in their current 'objective social class', which are positions defined by some transparent criteria, such as a classification of occupations (see the following subsection). A simple but reasonable characterisation would be to say that sociologists nearly always want to measure the current objective circumstances of people in terms of their social class or stratification position, because that is an important standard outcome or explanatory factor in a wide range of study designs. At the same time, they only rarely want to measure the subjective class identity of people (typically if they have a specialist interest in the role of attitudes to or awareness of social inequalities). Likewise, they frequently, but not always, want to measure social origins as a separate indicator variable, on the grounds that it is a valuable explanatory variable in understanding current outcomes, although origins are not always measured with the same instruments as apply to current circumstances.

Conceptualising and operationalising objective circumstances

Within sociological traditions, there are many different approaches to measuring objective circumstances, but a common starting point is a conceptualisation of the structure of social inequality as it best relates to enduring inequalities in access to valued resources. A summary by Wright (2005), for example, expands upon some of the most popular sociological measures, organised explicitly around the theories behind each measure. In each case, a theory related to the persistence of social inequality is presented, then a measure is advocated that is designed to map that conceptualisation in an optimal way.

Although typically wedded to a certain conceptualisation, sociologists would rarely deny the relevance of charting other measures of inequality (e.g. of earnings, income, wealth, etc.). Indeed, Barone et al. (2021) highlight that publications in sociological journals increasingly feature analyses of income and economic assets. However, for the purposes of this discussion, such measures are not presented as sociological measures in the sense that they are usually conceptualised as interesting consequences of, rather than the driving forces behind, the social organisation of inequality.

Many sociological measures put occupations at the centre of their conceptualisation of inequality, usually presenting the occupational division of labour as the key tool by which social inequalities are legitimised. It is often argued that occupational data are unusually efficient information to collect, being detailed but easy to obtain (e.g. Lambert and Griffiths, 2018), and that occupations are better measures of people's circumstances over the longer term than other

available indicators, such as income or area deprivation (cf. Shahbazian and Bihagen, 2022). A typical view in this tradition would be that income measures and locality-based deprivation indices, though empirically correlated and interesting in their own right, are nevertheless not the best measure of life chances in a structure of inequality. Some individuals, for instance, typically early in their career, might have quite low incomes or live in relatively deprived localities but, given their job, may be expected on the whole, and especially in the longer term, to lead lives of substantial privilege. It is also often argued, however, that occupations only work as reliable long-term indicators of circumstances for people who have reached a stage of 'occupational maturity' (e.g. Goldthorpe et al., 1987). In this perspective, a person's current occupation is only an effective indicator of their class or stratification circumstances if they are over an agreed age threshold (often 25 years). By this way of thinking, the stratification circumstances of people below the age threshold are more appropriately measured through information on their household or social origins rather than their current job.

One exception to the use of occupations as the basis of a social class measures is summarised in Savage et al. (2015), where class groups are conceptualised as a constellation of circumstances of resources and lifestyles in which, somewhat confusingly, individuals' own occupations do not feature. In that instance, in presenting the measure as a sociological approach, the argument would be that appropriately chosen boundaries based upon indicators of resources and lifestyle provide the best available conceptualisation of the structure of social inequality as it relates to enduring inequalities in access to valued resources.

Whether occupation-based or otherwise, plausible sociological measures that seek to capture the contours of a theory of inequality can ultimately be found in all shapes and sizes. The categorical social class measure (or 'schema') which has a relatively small number of social class categories and is ordinarily based upon occupations represents the canonical measure of objective social class circumstances, but stratification measures can also involve much larger numbers of categories or be organised in terms of gradational dimensions. Figure 1 shows the distribution of three social class measures that feature a small number of categories, and three alternative measures that are measured as one-dimensional scales from less to more social advantage.

Some of the most popular sociological measures are social class schemes based upon skill or employment relationships. Within the UK, the Registrar General's Social Class Categorisation (RGSC) was used extensively from the first decade of the 20th century to the start of the 21st century. The RGSC is usually used in a six-category format, where categories are defined in terms of occupational skill levels and social standing – the conceptualisation being that the allocation of economic resources rests overwhelmingly on occupations, which are themselves organised functionally, and rewarded largely on the basis of actual or perceived skill levels. In the UK, publications exist that can be used to identify which RGSC category a given occupation (and 'employment status' circumstance, such as self-employment or employee status) most appropriately belongs to (e.g. Office for National Statistics, 2016). Many other countries also have systematically defined skill-based social class measures, and Tahlin (2007) has argued convincingly that skill-based measures are generally the most empirically useful and consistent social class measures.

Whilst skill-based measures have a long history, an alternative social class scheme based on employment relations and conditions is arguably the most widely used in contemporary sociology (Barone et al., 2021). The influential theories of John Goldthorpe and colleagues (e.g. Goldthorpe, 2007) have been used to construct several linked empirical measures such as the UK's National Statistics Socio-economic Classification (NS-SEC) and the Erikson–Goldthorpe–Portocarero (EGP) and European Socio-Economic Classification (ESEC) international measures (e.g. Rose and Harrison, 2010). The NS-SEC, for instance, is commonly analysed as an eight-category social class measure, whereby its categories are defined primarily according to patterns of employment relations and conditions associated with occupations. Indeed, the contributions to the conceptualisation and measurement of social class schemes made by Goldthorpe and his colleagues have been so extensive and influential that versions of the 'Goldthorpe class schema' are often understood as the leading examples of sociological class measures. In practical research projects, it is very common for analysts to reduce the complexity of a categorical schema through some ad hoc data reduction strategy – the lower-right panel of Figure 1 shows one of the most commonly used examples, a two-category reformulation of the NS-SEC which

contrasts the 'Salariat' (the three most advantaged classes in the eight-category version, all characterised by salary-based employment contracts) against all others.

It is probably fair to say that the majority of sociologically influenced social class measures that are used in empirical research are based on either skill levels of occupations, or on a version of the Goldthorpe class schema. Nevertheless, other influential positions in the literature include recommendations for measuring objective social class in terms of criteria of power and control over the means of production (e.g. Wright, 2005), and in terms of criteria defined by assets such as wealth, housing or income (e.g. Savage et al., 2015). An interesting recent alternative has been the advocacy of a 'microclass' approach (e.g. Weeden and Grusky, 2012), which argues that it is useful to think of many, relatively small, occupation-based social class categories that should be disaggregated and analysed as discrete units where they reflect clusters (typically 100 or so) of distinctive lifestyles and experiences.

Another long-standing tradition in sociological research is the use of scales of social stratification, which present a one-dimensional ranking from less to more advantaged social circumstances, most typically operationalised again around occupations. The widely used International Socio-Economic Index of Occupational Status (ISEI; e.g. Ganzeboom, de Graaf and Treiman, 1992) assigns scores to occupations that are calculated as a function of the average earnings and educational levels of the incumbents of those occupations. A measure such as the ISEI is usually associated with a conceptualisation of a gradational meritocratic reward structure in which occupations provide the key tools for converting human capital (e.g. education) into economic rewards (e.g. earnings). Erola et al. (2022), for instance, find that the ISEI is a convenient tool for analysing the difference between genetic and environmental components of social reproduction. Measures such as the ISEI are often referred to as socio-economic status or SES measures. For historical reasons, stratification scales of this nature have been disproportionately popular tools in some countries but not others; social class measures have traditionally been most popular within western European countries, whilst stratification scales are more commonly exploited in sociological studies in other nations. This national divergence is often associated with consequential divergence in popular methodologies, for instance, the more widespread use of linear regression in sociological studies in the United States, compared with the enduring use of loglinear models and other tools for summarising categorical outcomes in many European countries.

Other stratification scales are also available in the sociological tradition. Many older studies used stratification scales that seek to capture average levels of prestige associated with an occupation, such as the Standard International Occupational Prestige Scale (SIOPS; see Treiman, 1977). Alternatively, the Cambridge Social Interaction and Stratification (CAMSIS) scales – which this author has a vested interest in promoting – are based upon a characterisation of the empirical patterns of social interactions exhibited, on average, by the incumbents of occupations (e.g. Lambert and Griffiths, 2018). CAMSIS measures are arguably particularly useful as they have a convenient linear functional form and favourable empirical qualities (e.g. Lambert and Griffiths, 2018); the theory behind them is that social interactions reflect enduring tendencies towards the reproduction of social inequalities and thus optimally map social reproduction itself (e.g. Rytina, 2020). In the review by Mastekaasa and Birkelund (2023), for instance, CAMSIS measures generally perform as well as or better than categorical social class and earnings measures in characterising social inequality patterns.

It is also worth noting that the terminologies associated with different measures are sometimes used inconsistently across literatures. For instance, the word 'status' has variously been used to imply prestige, honour, numerous indices of socio-economic advantage, and exogenous circumstances such as whether or not somebody is working (the three measures on the right side of Figure 1, for instance, are all sometimes labelled 'status', although each tries to represent a different concept and their micro-level correlation is only about 0.85). Because of the diversity of options, a 'best practice' recommendation is that practitioners should take care to describe and cite the measure that they have used, preferably providing replication information on its origins and derivation, as well as the justification for its use in addressing the research question.

In my own experience, non-specialists are often put off from using sociologically influenced measures for spurious reasons. First, it is perceived to be hard work to access and exploit metadata to support the operationalisation of relevant measures (such as published indices that link occupations to social class positions). This is regrettable but understandable, as the situation

is genuinely messy – numerous websites exist which distribute selected data files linking occupational unit information to social class schemes, but they can be hard to locate, navigate or exploit (e.g. Lambert et al., 2007; Ganzeboom, 2016; Office for National Statistics, 2016).[2] In addition, non-specialists often associate sociological measures only with 'clunky' social class categorisations that are rather hard to use in many statistical procedures (e.g. a measure such as NS-SEC with eight categories implies burdensome numbers of dummy variables and/or interaction terms). Such a characterisation doesn't do justice to the growing range of model-based and graphical statistical tools for summarising categorical inequalities that are commonly used within sociology, and it also overlooks that many sociological measures already support more convenient functional forms. In many cases, linear representations can be especially easy to use (e.g. simplifying summary statistics, and making it easier to specify interaction terms). Nevertheless, many sociologists prefer categorical measures precisely because it is cognitively easier to communicate descriptive inequalities across a small range of different categories. One other common concern with measures based upon occupations is that they may become rapidly outdated as occupational structures evolve, for example, due to technological change. Many empirical studies conclude however that the qualities of occupation-based measures are more stable through time than we might imagine (e.g. Gil-Hernández, Vidal and Torrejón Perez, 2023). Moreover, occupation-based measures can be, and often are, refined to evolving structures when desired (e.g. Guveli, 2006; Rose and Harrison, 2010; Smallenbroek, Hertel and Barone, 2022), and there are well-established procedures of analysis that can be used to discount 'marginal' distributional change through time in the industrial distribution from patterns or trends in relative inequalities. This contrasts with many analyses of income or earnings, where the distribution has also evolved. Indeed, the detailed and extended long-term historical comparative studies that use sociological measures based upon occupations (e.g. van Leeuwen and Maas, 2011) are often seen as a particular strength of the sociological tradition.

Choosing the unit of analysis

Many sociologists take a standard position about the unit of class analysis. In two parts, (i) everybody in principle belongs to a social class or has a position on a stratification scale (albeit sometimes there may not be enough data available to make a reliable assignment); and (ii) much of the time, social class is appropriately measured at the level of the immediate family or household (although in many circumstances, it may be measured and analysed at the individual level). Admittedly, this position features two core points and two subclauses. Nevertheless, it can seem strange, to sociologists, that researchers from other traditions often seem to ignore or misrepresent this perspective.

Classifying those without occupations

As most social class and stratification measures are based upon occupations, it is often wrongly thought that if a person does not have a current occupation, then they should not be assigned a position in a measure of class or stratification (or, worse still, they should be assigned to their own 'extra' social class, that of 'not working'). The consequences for research analyses have sometimes been damaging. Empirically, statistics on inequality that artefactually conflate employment activity with class or stratification structure are likely to misrepresent processes related to inequality (economists will, of course, recognise obvious parallels with studies of income or earnings that limit themselves to those with valid data). Another common operational consequence is that researchers simply dismiss sociological measures and favour an alternative – such as a locality-based deprivation index – to bypass this complexity.

In the conventional sociological position however, all people do have a class or stratification position, and this can usually be measured with careful attention. Methodologists differ in what they recommend, but for sociological measures that are based on occupations the most common advice is sixfold:

- measure a person's current 'main' occupation if they have one;
- measure their last main occupation if they don't;

[2] Links to metadata covering each of the measures mentioned in this commentary are posted on https://github.com/paul-lambert/.

- assign a measure (e.g. social class) based on the current or last main occupation;
- do the same for household sharers or other family members;
- use agreed criteria to derive a household-level measure from the component individual records;
- make an explicit decision about working at the individual or household level and, on that basis, either assign the household-level measure to all household members, or alternatively use individual-level measures which, for cases with no individual record, might reasonably impute the household-level measure as their value. Some of the distributions that are summarised within Figure 1 try to illustrate the different alternative measures that can emerge.

The advice above may sound complicated, but in fact a version of its procedures is implemented as a matter of routine in many socio-economic surveys and data resources, and can often be calculated retrospectively on secondary datasets.[3] In the UKHLS examples shown in Figure 1 for instance, only about 55% of records could be assigned a sociological measure based only on current job (since around 45% of cases did have valid records for a current job). Thereafter, coverage increased to 85% based on the current or most recent job for an individual, and 94% based on the current or most recent job of the respondent or any suitable household sharers. Exact figures may depend on the qualities of a given dataset, but in principle we might expect up to 100% coverage when measures use data based on both previous occupations and household sharers' occupations.

To reiterate, a study could legitimately focus on only the currently employed when using an occupation-based sociological measure; however, it would normally make more sense to include those without a current job as well. One compelling way of understanding these issues is to conceptualise cases without measures as 'missing' rather than as out of scope or 'inapplicable'. Perhaps wrongly, it remains common practice to regard any records that aren't assigned an occupation-based measure due to not having a current job as being 'inapplicable', and simply exclude them from analysis without further attention (even though, in many application areas, those without a current job will include people with particularly complex and important experiences). Arguably more appropriate would be to regard such cases as 'missing' and take the usual steps to respond to that problematic feature of the data – for instance, state explicitly their missingness and any assumptions that follow, and consider if any proactive response can be deployed, such as if a reasonable imputation can be assigned, or if the analysis can be appropriately adapted, such as using a missing-data model.[4]

Choosing between household and individual levels

There are many different views about how measures should characterise multiple people within a family or household. If the measure of class or stratification is designed to represent an enduring position in an inequality structure, most specialists argue in favour of household-level or family-level measurement on the grounds that resources are usually shared within households. Indeed, measures that are implemented at the individual level risk concealing or underestimating those social inequalities that are experienced at the household level. This arises because people in the most advantaged or disadvantaged households occupy, in relative terms, more intermediate positions on individual-level measures than they would do if located in a household-level distribution.

Household-level sociological measures that are based upon occupations usually deploy a rule that selects an appropriately indicative occupation to characterise the whole household. The dominance rule, for example, identifies the occupation that is economically dominant to the

[3] Example of code used to derive measures based on current, most recent, and household sharer occupations for the UKHLS is available at https://github.com/paul-lambert/.

[4] It remains common practice to create an extra category of those 'non-working' and use it in analyses. Few would see this as problematic so long as the assumptions associated with doing so are stated. Less compelling would be the circumstances when a 'not-working' category is added to a social class scheme without critical reflection, as this usually has the suboptimal consequence of conflating employment activity with stratification circumstances in empirical results.

household's circumstances – usually the one with the longest working hours – and uses it. Recent literatures increasingly explore alternative methods of summarising multiple component occupations within a household, such as calculating averages of derived measures, or by using multiple variables and allowing interactions between them (e.g. Thaning and Hallsten, 2020).[5]

In empirical research it is perhaps more common – and it can seem easier in operational terms – to assign a measure of class or stratification at the individual level. This arguably marks a de facto difference between sociological and other traditions, where the individual-level analysis is a common default in the former, whereas in economics, human geography and public health, as examples, it is relatively more common to work at the level of household indicators. The debates in this area are unresolved, and different projects might typically have different priorities and make different choices accordingly. Nevertheless, it is often not appreciated that sociological measures can readily be constructed at both the individual and household level, and either might be exploited according to a deliberate decision made by an analyst.

Gender inequality in class and stratification distributions

Alongside many other inequality measures, popular sociological measures tend to be quite strongly gendered, in the sense that the distributional profiles for men and women at the individual level can be substantially different. In the case of sociological measures, this arises most commonly because occupations are the most popular referent that underlies the measure, and most countries are characterised by substantial gender inequalities in occupational distributions and employment participation. Many of the most popular social class measures, for example, include some categories which, due to their occupational profile, are substantially male or female dominated, implying that the class measure itself might potentially proxy gender within some analytical framings (see Figure 1 for examples). Many sociological studies have responded to the vexed question of gender and social stratification in the same ways as are common in economics, namely by analysing men and women separately, and/or by explicitly considering gender in deciding between using an individual- or household-level measure.

In a few instances, methodologists have recommended different sociological measures for men and women, such as the social class scheme for women recommended by Martin and Roberts (1984) or the separate male and female CAMSIS scales that are available in that tradition (e.g. Prandy, 1986), although hitherto these proposals have not been widely adopted. A slightly more distinctive aspect of sociological approaches is that they often analyse outcomes across mixed gender groups and interpret gender inequalities simply as extant components of a stratification inequality system. In this framing, analysing the population as a whole, if some social classes or stratification circumstances are disproportionately male or female, this just means that this is what social inequality is, and no statistical adjustment should be made beyond it.

Consequences of using sociologically influenced measures of class and stratification

Having enumerated distinctive characteristics of sociological measures and described a variety of issues associated with their operationalisation, what is the cumulative impact of using sociologically influenced measures when studying social inequalities? The story isn't uniform, but three arguments can be made.

Sociological measures tend to suggest slightly stronger social correlations and more social stability within nations

Almost all analyses of social inequality that use sociological measures of inequality report persistent, non-negligible associations. Some of the longest-standing sociological research programmes include social mobility research studies, where for instance bivariate intergenerational correlations between parents and adult children are typically of the magnitude 0.3–0.4 in wealthy nations (e.g. Breen, 2004; Bernardi and Ballarino, 2016). Descriptive analyses

[5] These issues have been most extensively considered in the measurement of social origins, when it is common that data are available on the occupations and qualifications of two parents. The same concerns apply, however, to data on current circumstances at the household or family level, and they can also extend to situations when the same individuals have multiple concurrent occupations.

routinely demonstrate a moderate but important relationship between measures of social class or stratification and other important outcomes, such as health, well-being, crime, politics and other lifetime outcomes or risks (e.g. Rose and Harrison, 2010). Such a finding will surprise few readers from other disciplines. In broad terms, empirical results on associations with sociological measures commonly tell similar stories to studies that are based upon alternative indicators such as income or earnings. Nevertheless, there are a few points of departure. When differences emerge, they are most typically (but not always) in the direction that the sociological measures suggest slightly stronger associations (between the inequality measure and the outcome of interest), but combined with slightly less change through time in that association.

A notable example is in the analysis of patterns of social mobility itself. In an era when data resources expand in scale and scope and interdisciplinary engagement grows, it is increasingly common for social researchers to calculate or be aware of comparable results based upon both sociological and other inequality measures, and where social mobility was once almost exclusively a sociological interest area, it is now studied across disciplines. Comparative analyses and meta-analyses of social mobility using sociological measures commonly indicate no strong trends, or at most very weak trends, to increasing equality, in social origins influences over time, but find that income- and earnings-based analyses often report stronger and more varied trends within countries (cf. Torche, 2015; Bernardi and Ballarino, 2016). Marks (2014), particularly, highlights greater variability in estimates of mobility based upon income, both within and between countries, compared to estimates that use sociological measures. In the UK specifically, several studies have contrasted evidence of increasing origins associations across birth cohorts when inequality is measured based on income, but stable or decreasing origins associations using sociological measures (e.g. Erikson and Goldthorpe, 2010; Pensiero and Schoon, 2019). Bernardi and Ballarino (2016) systematically compare two different sociological measures (the ISEI stratification scale and a version of the Goldthorpe class scheme) with income measures in studying social reproduction patterns across 14 countries. Their results are mixed; but the general pattern is of similar associations with slightly stronger inequality associations and weaker evidence of their decline through time amongst the sociological measures. In one interesting result, Bernard and Ballarino (2016, p. 263) suggest that sociological indicators tend to support 'compensatory' models of social background influences (where social backgrounds are relatively more consequential in differentiating experiences in less advantaged situations), whereas indicators of income tend to support 'boosting' models (where background has the most effect in relatively advantaged circumstances).

In such settings, it is increasingly compelling to consider operationalising and reporting results from different sorts of inequality measures. A pertinent illustration might be seen in the analysis by Erola et al. (2022) of Finnish register data. Interested fundamentally in social stratification outcomes, Erola et al. measure both social origins and current circumstances using an occupation-based indicator (ISEI), an education measure, and a measure of personal income in assessing estimates of the genetic component of stratification outcomes (using analytical methods traditionally deployed in biosciences). In some instances, Erola et al. (2022) report very substantial differences between results associated within occupation-based and income outcomes – for example, both the overall magnitude of the genetic component of outcomes and the scale of its gradation by origins circumstances are, for income, around half of the estimates for the ISEI.

Sociological measures do deliberately seek to tap into social reproduction mechanisms in their theorisation and operationalisation, so it is quite plausible, albeit difficult to prove, that the apparent pattern of slightly stronger social correlations with sociological measures and slightly more stability through time might reflect these conceptual origins. One interesting observation consistent with this interpretation is that when using the specific sociological measure that is most deliberately designed to reflect intergenerational reproduction, Rytina (2020) reports that his 'symmetric scaling of intergenerational continuity' measure exhibits notably higher parent–child correlations in the United States (around 0.45) than other sociological measures (around 0.36), which themselves compare to typical economic indicator intergenerational correlations of around 0.3. As social scientists, we might do well to appreciate the potential for such differences, and the risks that might apply when a study ignores different measures within or between disciplines. From an interdisciplinary perspective, there are some signs (e.g. Barone et al., 2021) that sociologists are increasingly taking care to engage with those measures traditionally used by economists, but it is not so clear that this is being reciprocated.

Contested evidence of greater heterogeneity between countries

Sociological measures, like others, are often used in comparative analyses which aim to assess systematic differences between countries. They are very attractive for this purpose, because the sort of data needed to construct them (typically on occupations) are recorded consistently over a wide range of societies. Indeed, sociological researchers might be particularly proud of the extended historical coverage of detailed data on occupations that often facilitate comparisons over very long time periods.

Nevertheless, it seems likely that sociological measures often reveal less consistent differences between countries than do results based on other measures. A consistent finding in economics, for instance, is of a positive association between intergenerational correlation and income inequality (the 'Gatsby curve'); some sociological studies reach similar conclusions, but they also acknowledge a wide range of different results on this particular relationship (e.g. Hertel and Groh-Samberg, 2019). Alternatively, in their influential meta-analyses, Wilkinson and Pickett (2009) report strong and consistent cross-national relationships between income inequality profiles and health and well-being outcomes, but in the few examples that are presented, there are somewhat less clear-cut empirical variations with national profiles in social class measures.

A speculative interpretation is that sociological measures may be more likely to capture multiple aspects of social inequality that exacerbate variations in cross-national comparisons. When based on occupations, for instance, cross-national differences in industrial distributions, in gender-employment inequalities, and in areas of immigrant or ethnic minority occupational concentration, are all likely to feed into the inequality profile for a particular nation. Such features might add greater heterogeneity to cross-national comparisons, though not necessarily inappropriately so.

A distinctive analytical style

Studies that use sociological measures of inequality may be characterised by the disproportionate use of certain analytical approaches. Because many sociological measures are categorical in nature, a rich array of analytical techniques for summarising categorical inequalities are familiar to sociologists – it is common to see cross-tabulations and bar chart visualisations, but it is also common to see more ambitious statistical techniques for categorical measures, such as versions of correspondence analysis, the presentation and visualisation of statistical models for categorical outcomes, and the use of quite complex loglinear models that may summarise multiple dimensions of the relationships between variables in a categorical forms (influentially illustrated by Erikson and Goldthorpe, 1992).

The diverse operationalisation formats of sociological measures also support analytical flexibility in useful ways. Some modes of communication benefit from simple categorical divisions, in which case social class measures with small numbers of categories offer a well-justified, transparent and persuasive analytical tool. Other modes of analysis are much more readily approached with a measure that can be treated as continuous, in which case a well-documented stratification scale is likely to be helpful – examples include when a multivariate statistical model is used, perhaps with interest in interaction effects, and perhaps involving other linked processes such as missing-data models.

Some aspects of the analytical traditions that are common in sociology are arguably less compelling. In general, comparative macro-level statistics calculated from sociological measures are rarely available. Typically this is because national statistics agencies do not report results from sociological measures in a regular or harmonised way, although focused academic projects have sometimes generated results of this nature (cf. Hertel and Groh-Samberg, 2019). Comparative sociological projects, moreover, sometimes use quite a rigid harmonisation approach that is based on presuming 'measurement equivalence', sometimes to the lowest common denominator (for discussion, see Erikson and Goldthorpe, 1992). Albeit with noble exceptions (e.g. Ganzeboom, Luijkx and Treiman, 1989), it is rare for sociologists to consider and adequately account for measurement error in results based upon sociological measures. The most plausible implication is that empirical studies often slightly underestimate patterns of association due to unacknowledged measurement error.

Perhaps the most overt difference between sociological studies and others reflects the tautology that sociological measures are deliberately linked to explicit theories about social inequality.

Perspectives on method can differ, but there is a compelling argument that the best social science integrates theory and data in their measures and interpretations (e.g. Goldthorpe, 2007). Thus, an analysis that uses sociological measures can connect cumulatively with previous literatures on the nature of inequality, and provide theory-relevant insights from empirical evidence by doing so.

The theoretical grounding of their measures – in theory at least – also improves sociologists' opportunities to make convincing interpretations of the causal mechanisms behind statistical patterns of inequality. In principle, because they are designed to tap into clearly defined systems of inequality, their empirical patterns help adjudicate the root causes of inequalities (e.g. Rose and Harrison, 2010). The best studies should recognise that this does not arise automatically (that is, just because a measure is linked to a theory, it doesn't necessarily follow that correlates of the measure exclusively reflect the theory that lies behind it). Nevertheless, sociological measures do at least provide the opportunity for causal interpretations, which an analyst could accept or reject after careful assessment.

One of the most common justifications that sociologists themselves give for using a sociological measure is the belief that it will be better at reflecting 'enduring circumstances' in the inequality system. In part, this emerges from the conceptualisation of the measure, and often this is conflated with the additional presumption that sociological measures based upon occupations will be better at capturing long-term circumstances since occupations are more reliable indicators of long-term life chances. If plausible, this is particularly important to policy-facing conclusions. Boliver, Gorard and Siddiqui (2022) highlight the example of locality-based inequality measures in educational research, which often misclassify individual students such as due to temporary family circumstances; in such cases, a policy that sought to be progressive might actually be regressive if it directed support to 'concealed privilege'. It is a far larger project to prove that the small empirical differences between sociological and other measures do indeed consistently centre upon their qualities as long-term indicators, but hitherto there have been few strong contradictions to this interpretation.

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