



THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■



Centre for Analysis of Social Exclusion

Research at LSE ■

Change, stagnation, and polarisation in UK job quality, 2012-2021: Evidence from a new Quality of Work index

Thomas C. Stephens

CASEpaper 230
August 2023

Centre for Analysis of Social Exclusion
London School of Economics
Houghton Street
London WC2A 2AE
CASE enquiries – tel: 020 7955 6679

Centre for Analysis of Social Exclusion

The Centre for Analysis of Social Exclusion (CASE) is a multi-disciplinary research centre based at the London School of Economics and Political Science (LSE), within the Suntory and Toyota International Centres for Economics and Related Disciplines (STICERD). Our focus is on exploration of different dimensions of social disadvantage, particularly from longitudinal and neighbourhood perspectives, and examination of the impact of public policy.

In addition to our discussion paper series (CASEpapers), we produce occasional summaries of our research in CASEbriefs, and reports from various conferences and activities in CASereports. All these publications are available to download free from our website. Limited printed copies are available on request.

For further information on the work of the Centre, please contact the Centre Manager, Marta Wasik, on:

Telephone: UK+20 7955 6679

Email: m.m.wasik@lse.ac.uk

Website: <https://sticerd.lse.ac.uk/case>

© Thomas C. Stephens

All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

Editorial note

Thomas C. Stephens is a CASE affiliate, an ESRC-funded PhD Candidate in Social Policy at the London School of Economics and Political Science, and a Teaching Fellow at the LSE School of Public Policy.

Acknowledgments

I am grateful for the funding received by the Economic and Social Research Council to support this research. I am thankful to Tania Burchardt, Kirsten Sehnbruch for their invaluable advice and feedback on earlier drafts of this paper. I am also very appreciative of the comments provided colleagues at CASE and at the LSE Department of Social Policy during previous presentations of this paper on 9 March 2023 and 4 May 2023, respectively.

Abstract

This paper presents results from a new synthetic index of multi-dimensional Quality of Work (QoW) for the UK, using data from five waves of Understanding Society (Waves 4, 6, 8, 10 and 12) covering the years 2012-2013 to 2020-2021. The index operationalises a conceptual framework for measuring QoW using the Capability Approach (Stephens, 2023), with an emphasis on the objective rather than subjective aspects of work (Felstead et al., 2019). It comprises 6 Dimensions – Earnings, Insurance, Security, Autonomy and Voice, Work-Life Balance, and Prospects – and 11 Indicators. In line with a number of recent international studies, it adopts an indicator cut-off, weighting, and aggregation approach informed by the Alkire-Foster method (García-Pérez et al., 2017; González et al., 2021; Hovhannishan et al., 2022; Sehnbruch et al., 2020). QoW indicator scores are therefore assigned using cut-offs, with a mix of binary (2-level) and categorical (3-level) cut-offs depending on the indicator. These cut-offs then determine dimensional and, ultimately, index scores.

The index suggests there has been a mixed picture for UK job quality over the past decade, with marked changes for some groups and dimensions but stagnation in others. There has been an improvement in mean QoW index scores for employees, led particularly by (a) a sharp rise in workplace pension enrolment as a result of the Pensions Act 2008 and, to a lesser extent, (b) an improvement in wages at the bottom 20% of the distribution. This provides new evidence to support trends already discussed in the literature. However, this masks significant underlying inequalities in job quality. There has been a decline in QoW amongst the self-employed, leading to increased labour market polarisation between employees and more insecure workers. Further, despite improvements in wages, the index also suggests there has been little-to-no corresponding improvement in the proportion of workers able to achieve sufficient earnings to meet the Minimum Income Standards – partly accounted for by a fall in working hours amongst the self-employed. The index also highlights marked sub-group differences in job quality by age, sex, geography, and ethnicity.

Key words: Alkire-Foster Method, Capability Approach, Employment, Job Quality, Polarisation, Self-Employment, Work.

JEL number: I31, I38, I39, J21, J28, J31, J32, J80

Corresponding author: Thomas C. Stephens (t.c.stephens@lse.ac.uk), Department of Social Policy, London School of Economics and Political Science.

Contents

1. Introduction	6
2. Conceptualisation and aggregation	7
2.1 <i>The Capability Approach</i>	7
2.2 <i>The Alkire-Foster method</i>	11
3. The UK Quality of Work Index	13
3.1 <i>The data</i>	13
3.2 <i>Indicators and dimensions</i>	15
4. Results	26
4.1 <i>Headline time series changes</i>	26
4.2 <i>Higher wages, insufficient earnings?</i>	27
4.3 <i>Dimensional correlations</i>	33
4.4 <i>Sub-group differences</i>	34
5. Conclusions.....	41
Notes.....	43
References	44

1. Introduction

The past two decades have seen a significant improvement in the availability of data on job quality.¹ This was driven in the first instance by growing interest in the subject by the International Labour Organisation (ILO) (ILO, 1999), followed by the European Commission (European Commission, 2003, 2001) and the OECD (OECD, 2019, 2003). The UK has seen an unprecedented level of recent focus in the topic following the Government-commissioned Taylor Review of Modern Working Practices, which recommended that the UK “measure and publicise the levels of quality of work in the UK in much the same way as it does quantity” (Taylor, 2017, p. 11). This led to the development of a set of proposals for the measurement of job quality (Irvine et al 2018) and a wide range of organisations and policymakers have since introduced various measures of job quality for the UK (for a summary, see Dobbins 2022). However, none of these developments have yet led to the publication of regular published national statistics on job quality in the UK of the same status as job quantity, as the Taylor Review recommended six years ago. Existing proposed measures also demonstrate varying degrees of engagement with international academic literature on job quality, and a limited use of synthetic indices. This is in line with the earlier, European, public policy experience, where a rise in interest in job quality in the early-2000s failed to lead to an agreement on measures of job quality in international statistics (Piasna et al., 2019).

The result is that there is currently no agreed synthetic index of multidimensional job quality in the UK. This paper redresses this by introducing such a synthetic index: the Quality of Work (QoW) index. In line with some recent developments in academic research in job quality (Felstead et al., 2019; González et al., 2021; Hovhannishan et al., 2022; Sehnbruch et al., 2020) this paper proposes a synthetic index informed by the Alkire-Foster method – with individual-level data on every indicator, dimension and the index as a whole. This enables detailed sub-group analysis of varying intensity and headcount ratios of QoW, and time

series analysis of changes in QoW over time. The proposed indicators and cut-offs are justified with reference to the latest academic literature on job quality. In line with recent academic proposals there is an emphasis on objective characteristics of work rather than subjective indicators such as job satisfaction (Felstead et al., 2019), and the index operationalises a conceptual framework of QoW using the Capability Approach which I recently developed (Stephens, 2023).

The rest of this paper is split into three sections. First, I briefly outline a conceptual framework for QoW using the Capability Approach, and introduce the Alkire-Foster method as an aggregation and weighting approach for an index of QoW. Second, I introduce Understanding Society as a dataset, and then propose and justify the indicators and dimensions. Third, I present findings from the index, both over time and between sub-groups. A supplementary appendix contains a series of supplementary tables, robustness checks, and comparisons with other public datasets; these are referenced in the text where appropriate.

The index presented in this working paper offers a first glimpse, rather than a complete picture. In time, additional dimensions and indicators will be added to the QoW index, linking with external data sources to understand more about the prospects, health and safety, and other aspects of different jobs. Nevertheless, the index sheds new light on trends in job quality and the marked differences in the experience of work between different groups in society.

2. Conceptualisation and aggregation

2.1 THE CAPABILITY APPROACH

Job quality is an inherently multidimensional concept. The measurement of job quality therefore requires the use of a range of different indicators of various aspects of work; the grouping of these indicators into dimensions; and the aggregation of dimensions into an index, including weighting. This process involves normative decisions, with

well-established debates about indicator selection, aggregation and weighting (Anand et al., 2009; Anker et al., 2003; Bescond et al., 2003; Leschke and Watt, 2014). However, there is no consensus about how these indicators and dimensions relate to peoples' wellbeing.² Existing operationalisations of job quality are "under-specified" (Stephens, 2023), with a gulf between theory and measurement.

This paper makes use of my conceptual framework for measuring QoW using the Capability Approach (see Figure 1). Following the Capability Approach (Robeyns, 2017; Sen, 2000, 1992, 1991, 1987), wellbeing is defined as (a) important 'beings and doings' (Functionings) and (b) potential combinations of Functionings (ie Capabilities) which people achieve from work resources, after (c) accounting for the interaction of personal, social and environmental factors which affect how work resources are converted into Functionings (Conversion Factors).

The framework argues that work resources relate to Functionings in two ways:

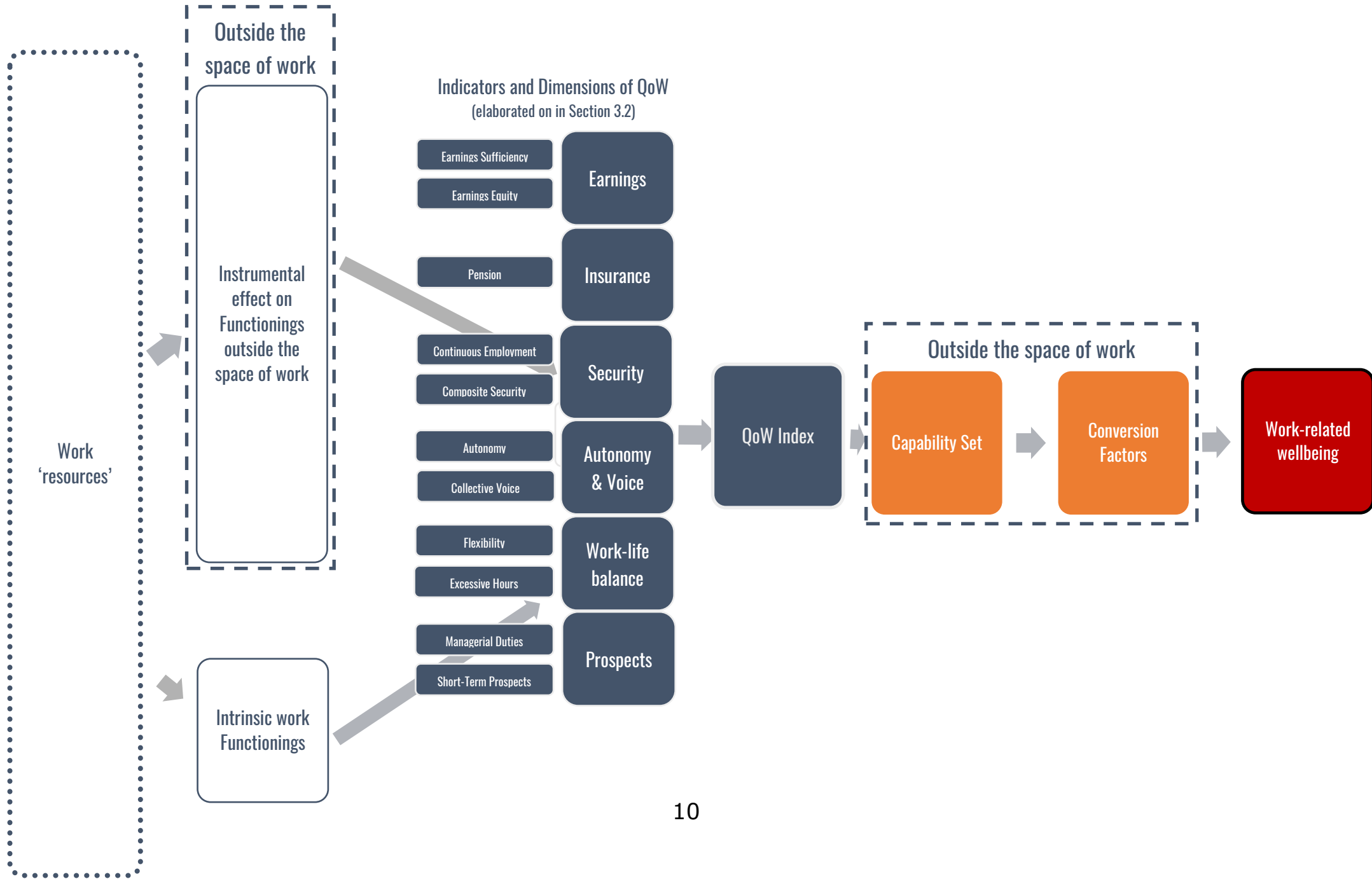
- (a)** Instrumentally: Work enables and inhibits the fulfilment of Functionings outside the space of work. For example, a job with reasonable hours and flexible work arrangements is important largely because it enables someone to enjoy wider family- and life-related Functionings;
- (b)** Intrinsically: Some Functionings exist in the space of work itself, eg meaningful work (Weidel, 2018), and are thus intrinsic work Functionings.

It further highlights that because work has a pervasive effect on many aspects of peoples' lives, inside and outside the space of work, it has a special status within the Capability Approach: the effect of work on peoples' wellbeing must be understood predominantly (though not exclusively) in instrumental terms. In the absence of a work-specific list of Functionings, indicators and dimensions of QoW can be identified based on the effect work resources have on pre-existing lists of Functionings (Burchardt and Vizard, 2011; Nussbaum, 2011; Qizilbash, 1996).

The above process enables researchers to operationalise work in what is termed the vector of achieved Functionings: it tells us the wellbeing which people achieve from their current work activity. Agreeing with existing research, the framework emphasises the importance of measuring the objective characteristics of work rather than subjective job satisfaction or work-related subjective wellbeing (Brown et al., 2012; Felstead et al., 2019). The Capability Approach also helps inform a broader case for a heterodox economics of work, capturing non-pecuniary aspects of work alongside earnings to enable a broader understanding of how work creates wellbeing (eg see Spencer 2015). Whilst many applications of the Capability Approach to job quality have tended to conceptualise it in terms of work-related poverty or deprivation (eg see González et al. 2021; Green 2007), the framework proposes a more comprehensive assessment of the *Quality* of Work based on the broader concept of wellbeing (Suppa, 2019). I operationalise this concept through the cut-offs used in the proposed indicators and dimensions (see Section 2.2 below).

However, the framework then goes further, arguing that the true effect work has on peoples' wellbeing can only be fully captured once we integrate factors outside the space of work into an index. This means we must also measure: (a) the range of alternative Functionings both inside and outside the space of work which are available to people other than their chosen work activity (the Capability Set); and (b) any personal, social, and environmental factors which affect the conversion of work resources into Functionings (Conversion Factors). Worklessness – such as unemployment, unpaid work and inactivity – must also feature. It argues indices of multidimensional job quality need to incorporate these factors into their indices, for

Figure 1. Conceptual framework for a Capability Theory of the Quality of Work (Stephens, 2023):



example by combining data on individual working conditions with wider data on household circumstances, wealth, dependents, worklessness, caring responsibilities, and skills.

2.2 THE ALKIRE-FOSTER METHOD

This paper takes the first steps towards operationalising QoW in peoples' vector of achieved Functionings by identifying indicators and dimensions for QoW, and applying an aggregation and weighting approach. The development of a combined index – measuring the Capability Set, and adjusting for Conversion Factors – is left to future papers, but the survey used in this index has been identified as being capable of developing such a combined index (see Section 3.1).

The Alkire-Foster method is a widely-used approach for developing indices of multidimensional poverty (Alkire et al., 2015; Alkire and Foster, 2011a, 2011b), and has since been used to develop indices of multidimensional job quality in Central and Latin America (González et al., 2021; Sehnbruch et al., 2020), Spain (García-Pérez et al., 2017), and at a global level (Hovhannishan et al., 2022), but not yet in the UK. This paper is informed by these approaches.

Individual-level indicators of QoW are the building blocks of the index. Following the approach in González et al. 2021, X^{ij} denotes the attributes of individual i in a given indicator j of the index. The score an individual can get is determined by one or two sets of cut-offs, depending on the indicator. I justify these decisions for each indicator and dimension in section 3.2, and expand on these in Appendix B. For binary indicators, individuals have two possible scores:

$$\begin{aligned} X^{ij} < L^j &= 0 \text{ (Worst score)} \\ X^{ij} \geq L^j &= 1 \text{ (Best score)} \end{aligned}$$

By contrast, categorical indicators have two thresholds, creating three categories. They therefore have both L^j and a mid-level cut-off M^j . Individuals therefore have three potential scores in these indicators. This is designed to reflect

job *quality* based on the concept of wellbeing, and not merely *deprivation*. This is intentionally different to approaches to job quality which focus exclusively on deprivation, and tend to exclusively use binary indicators:

$$\begin{aligned} X^{ij} < L^j &= 0 \text{ (Worst score)} \\ X^{ij} \geq L^j \ \& \ x^{ij} < M^j &= 0.5 \text{ (Middle score)} \\ X^{ij} \geq M^j &= 1 \text{ (Best score)} \end{aligned}$$

These indicators are then grouped into dimensions. The score of a given dimension for a given individual is denoted by S^{id} . In line with the Alkire-Foster method (González et al., 2021; Hovhannishan et al., 2022; Sehnbruch et al., 2020), all indicators are weighted equally within each dimension. As such, S^{id} is simply the sum of X^{ij} within each dimension divided by the number of indicators in a given dimension (N^{jd}):

$$S^{id} = \frac{\sum_1^d X^{ij}}{N^{jd}}$$

These dimensions are then aggregated into a combined index score C for each individual i . C^i is the sum of all S^{id} , after accounting for weights for any given dimension (W^d). In line with the approach taken in other applications of Alkire-Foster for job quality this indicator assigns a slightly higher weight to the earnings dimension, so that it takes up one-quarter of the index. It weights all other dimensions equally (González et al., 2021; Hovhannishan et al., 2022; Sehnbruch et al., 2020):

$$C^i = \sum S^{id} W^d$$

S^{id} scores range from 0 to 1, with 0 signifying scoring worst in all indicators of the dimension, and 1 signifying scoring best in all indicators. The minimum C^i score is 0, signifying scoring worst across every indicator of every dimension in the QoW index, whilst the maximum C^i score – determined by the weighted sum of the number of dimensions in the

index – signifies a best score in every indicator of every dimension.

QoW is then measured in two ways. First, a QoW score is calculated using individuals' scores in (a) each dimension and (b) the entire index. Weighted mean QoW scores are used to track changes in QoW over time and differences in QoW between sub-groups. Second, I present two types of headcount ratios of the proportion of workers (a) scoring Worst, Middle and Best in each indicator (indicator headcount ratios) and (b) scoring ≤ 0.5 and > 0.5 in each dimension (dimension headcount ratios).

3. The UK Quality of Work Index

3.1 THE DATA

Understanding Society, also known as the UK Household Longitudinal Study (UKHLS), interviews all adults aged 16 and over in a representative sample of UK households, with most interviewed annually over regular 24-month waves periods (UK Data Service, 2015). Weighting methods have been introduced to allow it to be used for representative cross-sectional analysis as well as longitudinal analysis (Kaminska and Lynn, 2019; Lynn, 2011). The survey has been used for a number of studies of job quality (eg Belloni, Carrino, and Meschi 2022; Wheatley 2021; Williams and Koumenta 2020) and earnings (eg Matejic 2017; Slaughter 2021). Understanding Society asks questions on job quality in every other wave. The QoW index therefore consists of everyone in Waves 4 (2012-13), 6 (2014-15), 8 (2016-17), 10 (2018-19) and 12 (2020-2021) of the survey who either did paid work in the previous week or have a paid job they were away from in the previous week. These waves have an unweighted number of 108,973 non-independent responses, ranging from 23,759 in Wave 4 to 15,636 in Wave 12.

The index takes advantage of the fact that Understanding Society is a longitudinal panel survey by using some data on respondents' answers to each prior wave (Wave 3, Wave 5, Wave 7, Wave 9, Wave 11) to develop an indicator on length

of continuous employment. Wave 2 (2010-11) is excluded because some relevant questions for this indicator were not asked in Wave 1. As with any household survey, the survey design means some individuals are less likely to be sampled than others, and among those contacted, some people are less likely to respond (for example, those with irregular migration status). Appropriate cross-sectional survey weights which correct for survey design and non-response biases are applied to all the analyses presented here, in line with Understanding Society's established weighting methodology.

Understanding Society has several advantages over alternative UK surveys. Its income data has been found to compare well with other national surveys (Fisher et al., 2019). Unlike both the Labour Force Survey (LFS) – the UK's official survey for employment and unemployment – and Annual Survey of Hours and Earnings (ASHE), it captures self-employed earnings as well as employee earnings. In common with most economies in the global north, and in line with the long-standing experience of economies in the global south, the UK has experienced a rise in informal work in the two decades leading up to the pandemic. In the UK this has taken the form of a sharp increase in solo-self-employment and a net flow of employees into self-employment up to the start of the pandemic (ONS, 2022). Following the pandemic, the UK has seen a fall in self-employment and a rise in inactivity, but as-yet-limited evidence on its impact on the underlying wellbeing of current and former self-employed workers. This phenomenon makes the exclusion of self-employed income from a UK job quality index increasingly untenable, and gives Understanding Society a significant advantage over the LFS and ASHE. Whilst the Family Resources Survey does include data on self-employed earnings and a number of job quality indicators such as personal and employee pensions, it lacks questions for many important indicators of job quality – including autonomy, flexibility, temporary vs. permanent jobs, and union or collective bargaining coverage.

Finally, unlike working conditions surveys such as the European Working Conditions Survey, Understanding Society has detailed data on peoples' wider circumstances – such as wealth and earnings of other household members – and has a large enough sample size to carry out within-country analysis. As will be shown in Section 4, this allows for detailed analysis of how QoW varies by a range of sub-groups. It also makes Understanding Society capable of being used to develop a comprehensive index of QoW in future – incorporating factors outside the space of work in Conversion Factors and the Capability Set.

There is reasonably good coverage in the survey for the indicators in this index, with most indicators having relatively few (<5%) missing values and no identified systemic issue caused by the missingness. However, there is a higher proportion of missing values in Wave 6 (2014-15) due to the introduction of new respondents in that wave as part of the Immigration and Ethnic Minority Booster, some of whom were not asked relevant questions on job quality. The Continuous Employment indicator also has a higher proportion of missing values than other indicators, and due to a change in the questionnaire there is no question on personal pensions in Wave 12. To address these issues, I carry out multilevel imputation using chained equations to reduce missingness the index (see Appendix C).

3.2 INDICATORS AND DIMENSIONS

Table 1 lists the dimensions, indicators, dimension weights, and cut-offs for the QoW index. There are 6 dimensions and 11 indicators. 4 indicators are binary. 7 indicators are categorical, taking three possible values. There is full coverage of both formal and informal paid work: ie people who are an employee or self-employed in their main job are both included in the index.³ For some indicators a different cut-off is used for the employed and for the self-employed, or the self-employed are assigned automatic scores due to their self-employed status; I elaborate on the reasons

Table 1. Dimensions, indicators, weights, and cut-offs of the QoW index.

Dimension	Indicator	Cut-Offs
Earnings (25%)	Earnings Sufficiency (12.5%) fimnlabnet_dv, intdatd_dv, indatm_dv, intdaty_dv	Categorical indicator. Net annualised earnings in all jobs, regardless of hours worked, below JRF's Minimum Income Standard thresholds in the year interviewed for (a) a single person with no dependents (Worst) , or if above that, (b) half a full-time couples' income for two children, including childcare (Middle) . Those above both thresholds coded Best .
	Earnings Equity (12.5%) fimnlabgrs_dv, jbhrs, jshrs, j2hrs	Categorical indicator. Gross hourly wage earnings in all jobs below (a) the 20th percentile in the distribution (Worst) or (b) the 60th percentile in the distribution (Middle) of their wave. Those in the top 40% of the wage distribution coded Best . To monitor changes over time, thresholds are set in standard units at Wave 4.
Insurance (15%)	Pension (15%) jbpen, jbpenm, ppen, ppreg	Categorical indicator. For main job, (a) neither a member of an employer pension scheme nor contributing regularly to a personal pension (Worst) or (b) not a member of an employer pension scheme but contributing regularly to a personal pension (Middle) . Employees who are members of an employee pension scheme are coded Best .
Security (15%)	Continuous Employment (7.5%) jbsamr, empchk, jbstat, jbsemp, intdatd, intdatm, intdaty	Categorical indicator. Either self-employed in main job and thus not able to accrue working rights with length of continuous service (Worst) ; or has not worked continuously with same employer in main employee job for more than (a) 1 wave (Worst) and/or (b) 2 waves (Middle) . Those with breaks in paid employment assigned the appropriate score based on the wave in which this break occurred. Survey question wording continues to count accrued working rights of employees subject to TUPE transfers. Those with over 2 waves' continuous employment coded Best .
	Composite Security (7.5%) jbterm1, jbsec	Binary indicator. For employees, main job either self-described as "temporary" (Worst) or self-perceived as "likely" or "very likely" to lose job in next 12 months (Worst) . Self-employed only coded based on the first condition. Employees who do not meet either condition, or self-employed who do not meet the first condition, coded Best .
Autonomy and Voice (15%)	Autonomy (7.5%) wkaut1-5	Categorical indicator. Has only (a) low (Worst) or (b) medium (Middle) autonomy over a range of work tasks in main job. Autonomy calculated by generating a composite score of 5 four-level work autonomy questions, with 16 possible scores ranging from 5 to 20. Categories created by

		splitting these 16 possible scores into three groups (with the “Middle” category allocated an extra, sixth, score). Those with high autonomy coded Best .
	Collective Voice (7.5%) tujbpl	Binary indicator. Either self-employed in main job and thus has no access to collective agreements (Worst); or an employee in main job with no union or staff association at workplace (Worst). An employee in main job with a union or staff association at their workplace coded Best .
Work-Life Balance (15%)	Flexibility (7.5%) jbflex1-8, jbflex96	Categorical indicator. If an employee in main job, has (a) no (Worst) or (b) 1-2 (Middle) of eight possible flexible working arrangements in their workplace, should they want them – such as working from home, part-time working or job sharing. Those with 3 or more arrangements coded Best . The cut-off approach informed by distribution of flexible arrangements, which is heavily left-skewed. Self-employed not coded on this indicator.
	Excessive Hours (7.5%) jbbhrs, jbot, jshrs, j2hrs	Categorical indicator. Works (a) over the UK Working Time Directive of 48 hours a week (Worst) or (b) over 37 hours a week (Middle) in all jobs - including overtime, second jobs and self-employed jobs. Those working 37 hours or below coded Best . The cut-off approach is informed by the distribution of hours worked within the population and ONS data on the average working hours of full-time employees (ONS, 2023).
Prospects (15%)	Managerial Duties (7.5%) jbmngr, jsboss	Binary indicator. Either has no managerial duties in employee main job (Worst); or solo self-employed in their self-employed main job (Worst). Employees with managerial duties or self-employed who hire their own staff coded Best .
	Short-Term Prospects (7.5%) jbxpcha, jblkchc, jbxpchc	Binary indicator. In next 12 months, either doesn’t expect a better job with same employer (Worst); or doesn’t expect, or expects but does not want, a new job with a new employer (Worst). Otherwise coded Best .

below and in Appendix B. In an improvement on some job quality indices, data on all additional paid jobs rather than just the main one is used for three indicators (Earnings Sufficiency, Earnings Equity and Excessive Hours). Other indicators only use data on the main paid job because the relevant question is only asked of that job. There is a high response rate for the indicators (see Appendix C), and the trends in each indicator are comparable with other published data where available (see Appendix B). The below subsections justify the dimensions and indicators, with reference to the Capability Approach and existing social science literature on job quality.

3.2.1. Earnings

There is widespread recognition across the social sciences that earnings play a critical role in job quality. The index adopts the approach of both the OECD Job Quality Framework (Cazes et al., 2016; OECD, 2017, p. 17) and the European Job Quality Index (Leschke et al., 2008, p. 10) in making a distinction between two aspects of earnings quality: (a) the sufficiency of earnings to meet some minimum threshold, eg to provide for basic needs, and (b) where one's earnings sit within a distribution. It is argued that people achieve Functionings from earnings in these ways: they need their earnings to be sufficient to pay for Functionings which others in society enjoy (Earnings Sufficiency); but they also achieve other Functionings based on where their wage is within the distribution, not least because this is a signifier of the status and worth society attaches to their job (Earnings Equity).

In this index, Earnings Sufficiency is operationalised using a categorical indicator: assessing whether *net* annualised earnings,⁴ irrespective of hours worked, are below the Joseph Rowntree Foundation's Minimum Income Standards (MIS) for (a) a single person with no dependents (Worst), (b) half the MIS of a dual earner couple, including childcare costs (Middle) or (c) above both thresholds (Best) (Bradshaw et al., 2008; Hirsch, 2015). These standards have been developed and updated through a deliberative process of

public engagement, in which people were asked to agree minimum baskets of goods necessary to participate in society – akin to similar processes using the Capability Approach. The cut-offs effectively tell us whether someone has the Capability, through earnings alone, to enjoy a minimum societally-agreed standard to live alone, or have two children as part of a dual-earning couple. Unlike other minimum thresholds, such as the Living Wage, the MIS thresholds don't assume receipt of welfare benefits. The thresholds are therefore less sensitive to extraneous changes in the benefits system which wouldn't reflect change in overall QoW (for a fuller discussion, see Appendix B.1).

Earnings Equity, another categorical indicator, measures whether *gross hourly wages*⁵ are (a) below the 20th (Worst), (b) at or below the 60th (Middle), or (c) above the 60th (Best) percentile of the distribution. This is informed by an approach taken in existing studies of wage inequality (Lindley and Machin, 2013; Machin, 2011), which tend to place an emphasis on trends in the bottom fifth of the wage distribution vs. other parts of the wage distribution. To assess potential changes over future years, the percentile thresholds are set in standard units at Wave 4.

Most recent UK discussion of UK earnings focuses on trends in the hourly wage, where data suggests there has been a marked improvement at the lower-end of the wage distribution following the introduction of the National Living Wage (Cominetti et al., 2023). However I suggest that we also need to consider the additional role of Earnings Sufficiency in job quality: whether one's overall take-home pay is enough to enjoy a minimum standard of living. There is no guarantee that an improvement in wages at the lower end of the distribution will necessarily be reflected in an improvement in take-home pay, as the latter depends on the interaction of wages and hours worked. I return to this in Section 4.

3.2.2. Insurance

Work plays a crucial role in insuring people against risks both

during work and, crucially, in their future lives through pensions. Although pensions policy is generally conceptualised in terms of equalising and smoothing consumption (Barr, 2020, pp. 157–192), it can also be framed in terms of the equitable distribution of Functionings and Capabilities within and between generations. In the UK, good-quality paid work has been vital to the funding of pensions in two respects: earnings taxes pay for state-provided defined benefit pensions; and employer and employee pension contributions pay for personal pensions (either defined benefit or, increasingly in the UK, defined contribution). There is concern that low QoW – particularly rising informality and wage stagnation – will undermine both these foundations (Barr and Diamond, 2010).

To capture this, the index uses two groupings of questions from Understanding Society. First, a set of employee-only questions which ask whether their employer has an employee pension scheme, and if so, whether they are a member. Second, a set of questions asked to all paid workers on whether they contribute to a personal pension, and if so, how regularly. These are used to develop a categorical indicator combining employees and self-employed. Employees are assigned the Best score if they are members of their employee pension scheme. The self-employed are assigned a Middle score if they contribute regularly to a personal pension, and employees are assigned a Middle score if they don't have a workplace pension but nonetheless contribute regularly to a personal pension. The data does not allow us to establish the size of the contributions, the nature of the pension (eg defined benefit such as final salary vs. defined contribution), or the expected income in retirement, but the indicator still marks an improvement on existing job quality indices, most of which do not use a pensions indicator.

3.2.3. Security

Security, which is used here as an antonym of precarity, is widely agreed to be a key dimension of job quality. Sociological literature has identified “insecure and uncertain”

work to be one of three inter-related aspects of precarious work, alongside “limited economic and social benefits” and “limited statutory entitlements” (Kalleberg, 2018, p. 15). Conceptualised using the Capability Approach, precarious work could be argued to affect Functionings inside the space of work such as meaningful work, since it signifies to the worker that their work is less worthwhile to employers and society. It also has a considerable effect on the ability of the worker to exercise Functionings outside the space of work: offering less secure earnings, and preventing the worker from planning for the future to exercise family- and life-related Functionings.

The Earnings Sufficiency indicator in the QoW index already captures aspects of precarity related to low hours and/or low wages: someone with a high wage but unable to work sufficient hours, or conversely someone working long hours at an insufficient wage, could fall below the MIS thresholds. The Security dimension contains two other indicators designed to capture other aspects.

First, Continuous Employment uses longitudinal data from both the current and prior wave of Understanding Society to generate a categorical indicator based on length of continuous service with the same employer. This is an especially important indicator in the UK context, since employees’ statutory rights, such as unfair dismissal, depend on the length of continuous service. A distinction is drawn between employees with (a) < 1 wave (Worst score), (b) 1-2 waves (Middle) and (c) > 2 waves’ (Best) continuous service. By definition, the self-employed and those who were out of work 1-2 waves ago do not have associated rights based on continuous service. The self-employed are therefore assigned the Worst score, and those who were out of work in the relevant period are assigned the corresponding (Middle or Worst) score. In line with Kalleberg's (2018) framework, this indicator therefore incorporates a wealth of data on non-standard work arrangements, precarity and insecurity whilst also being sensitive to the specific legal framework and level of worker power in the UK context (for a further discussion, see Appendix B.3).

Second, Composite Security is a binary indicator which captures (a) whether the job is permanent or temporary (eg fixed-term contracts, seasonal work, etc) and (b) whether the worker perceives it likely/very likely to lose their job in the next 12 months. Employees are coded Worst if they answer yes to either question, whilst the self-employed – since they are not asked question (b) – are assigned scores based only on question (a).

3.2.4. *Autonomy and voice*

This dimension captures two more detailed aspects of the working environment: workers' autonomy, and their power to exercise collective voice to shape the way they work. Autonomy refers the level of initiative workers have over their tasks, and is recognised by a range of disciplines to be a central part of the employment relationship (eg see Gallie 2007). It is associated with work intensity, defined as "the rate of physical and/or mental input to work tasks performed during the working day" (Green, 2001, p. 54), and evidence suggests that since the late 20th Century task autonomy has declined in Britain (Gallie et al., 2004) just as work intensity has increased (Green et al., 2021).

The separate concept of voice has its origins in economic literature studying the options available to consumers faced with declining quality of goods and services (Hirschman, 1970), but subsequent work applied this framework for the study of job quality. Such literature traditionally associated voice with unions due to their unparalleled ability to exercise collective voice (Bennett and Kaufman, 2007; Boroff and Lewin, 1997; Freeman and Medoff, 1992), but the decline of unions has seen the growth of a much broader range of definitions and mechanisms for voice (Budd et al., 2010). A separate strand of literature in the Capability Approach has argued for a Capability for Voice (Bonvin, 2012; De Leonardis et al., 2012; De Munck and Ferreras, 2013); the way both schools of thought conceptualise voice has yet to be reconciled.

The QoW index incorporates these concepts into two indicators.

First, Autonomy combines five variables, which ask all workers to assess the level of autonomy over five aspects of work on a 4-level scale from “a lot” (1), to “some” (2), “a little” (3) and “none” (4). Summing these together leads to 16 possible scores, ranging from 5 (“a lot” of autonomy in all five variables) to 20 (“none” in all five). A categorical indicator is created, distinguishing between scores of (a) 5-9 (Best), 10-15 (Middle) and 16-20 (Worst). One of the most significant limitations of Understanding Society is the lack of a question on work intensity, but autonomy is argued to be sufficiently theoretically and empirically associated with intensity for the reasons described above.

Second, adopting the conceptualisation of voice taken in more traditional economic literature, the index uses a binary Collective Voice indicator which distinguishes between employees who (a) have (Best score) or (b) do not have (Worst) “a trade union, or a similar body such as a staff association, recognised by your management for negotiating pay or conditions for the people doing your sort of job in your workplace” (see Appendix B.4). The self-employed are automatically coded Worst on this indicator, since they are not asked this question and, by definition, they are denied access to an employer-recognised means of exercising collective voice.

3.2.5. Work-life balance

Considerable multi-disciplinary research has studied work-family and family-work conflict (see especially Annor and Burchell 2018; Chung and van der Lippe 2020; Gallie 2007; Epstein 1999; Esping-Andersen 1996; Parasuraman and Simmers 2001) – including within the Capability Approach (Hobson 2011; Lewis and Giullari 2005). This paper conceptualises this as an inability to exercise *both* work-related *and* family-related Functionings at the same time. Workers facing this conflict therefore face a choice between (a) reducing their work activity to exercise family-related

Functionings, eg by sacrificing pay or other aspects of job quality (eg career prospects); or (b) holding off from exercising family-related Functionings. Good-quality work enables workers to exercise both sets of Functionings simultaneously. A range of work resources are important in enabling or preventing this from happening – including flexible working arrangements, earnings, and the sheer quantum of time spent in work (since excessive working hours will lead to time poverty, by definition preventing workers from exercising other Functionings).

Two categorical indicators are designed to capture aspects of this.

First, Flexibility utilises an indicator which asks employees a set of yes/no questions about the availability of eight flexible work arrangements in their workplace.⁶ Due to the heavily left-skewed nature of this data, the indicator assigns a greater weight towards having more flexible arrangements at the lower end of the distribution, distinguishing between (a) zero flexible working arrangements (Worst score), (b) one or two flexible work arrangements (Middle) and (c) three or more flexible work arrangements (Best).

Second, Excessive Hours uses data on weekly hours worked in all jobs to capture aspects of work-life balance associated with excessive working hours. It distinguishes between those who work (a) over the UK Working Time Directive of 48 hours a week (Worst score), (b) over 37 hours (Middle) (c) 37 hours or below (Best). The Middle cut-off is informed by the distribution of hours worked and the average weekly working hours of full-time workers, which currently stands at 36.7 hours (ONS, 2023).

Because the self-employed are not asked about flexible work arrangements, they are only coded based on the Excessive Hours indicator. It should also be noted that the Earnings Sufficiency indicator is also designed to capture other aspects of work-life balance, since someone forced through family or caring responsibilities to work insufficient hours to

achieve a decent standard of living would score poorly on this indicator.

3.2.6. Prospects

The prospects of jobs tend to be discussed from the perspective of employers or national economies rather than workers themselves – for example in discussions of skill-biased technical change, human capital and economic productivity. However, I suggest that job prospects can be conceptualised from the workers’ perspective. Jobs with good prospects are more resilient to future changes, eg by using in-demand skills such as jobs in the green economy; offer good promotion opportunities; and are likely further up the hierarchy and so less vulnerable to sudden lay-offs and restructuring. They provide workers with Functionings inside and outside the space of work: they are more likely to be meaningful, whilst also being a more stable and certain means of obtaining other Functionings. Where skills are measured, it is important to distinguish the skill of the *job* from the qualifications of the *individual*.

Two binary indicators are adopted in this index.

The first, Managerial Duties, captures whether the worker is either solo-self-employed (if self-employed) or has managerial duties (if an employee). Non-managerial employees and solo self-employed are coded Worst, and the converse coded Best. This is in line with literature suggesting those self-employed who hire staff have significantly better pay and prospects (Giupponi and Xu, 2020): by definition, they can lay other workers off first if they face a reduction in their revenue.

The second, Short-Term Prospects, captures whether workers (a) expect a better job with the same employer or (b) both *want* and *expect* a new job with a new employer in the next 12 months. Workers who fulfil either or both of these criteria are assigned the Best score, whilst those who score neither are assigned the Worst score. Since the additional benefits of expecting both vs. one are deemed to

be relatively minor, workers who expect both are treated the same.

4. Results

4.1 HEADLINE TIME SERIES CHANGES

Figure 2 gives a snapshot of the data, presenting indicator headcount ratios for all worker (including employees and self-employed) in the final wave of the index (2020-21) (for an explanation of what “indicator” vs. “dimension” headcount ratios are, refer back to Section 2.2). A greater proportion of workers score Best on Pension and Security indicators and Worst on Prospects. There is a mix of headcount ratio scores in other dimensions, with some scoring predominantly Worst, Middle or Best depending on the nature of the indicator.

Figures 3-4 supplement this by showing changes in weighted mean QoW scores over time, both between selected subgroups (Figure 3); and for each dimension, broken down by employees and self-employed (Figure 4). These show that there has been an improvement in employee QoW index scores over time. This has been caused particularly by a significant ($p = <0.001$) improvement in Insurance, driven by marked increase in the proportion of employees enrolled on workplace pension schemes. This is in line with other published national statistics (see Appendix B.2) on trends in employee pension enrolment following the implementation of the Pensions Act 2008, which introduced automatic enrolment for many employees. There has also been a significant ($p = <0.001$), if less pronounced, improvement in the Earnings dimension, but a fall in the Prospects dimension ($p = <0.001$).

However, this improvement has not been uniform across all sub-groups. There appears to have been a slight decline in QoW amongst the self-employed ($p = <0.05$), and little-to-no improvement in scores amongst those of Bangladeshi ethnicity (Figure 3). For the self-employed, there has been no significant improvement in the earnings dimension or in pensions. There have been significant ($p = <0.001$) falls in

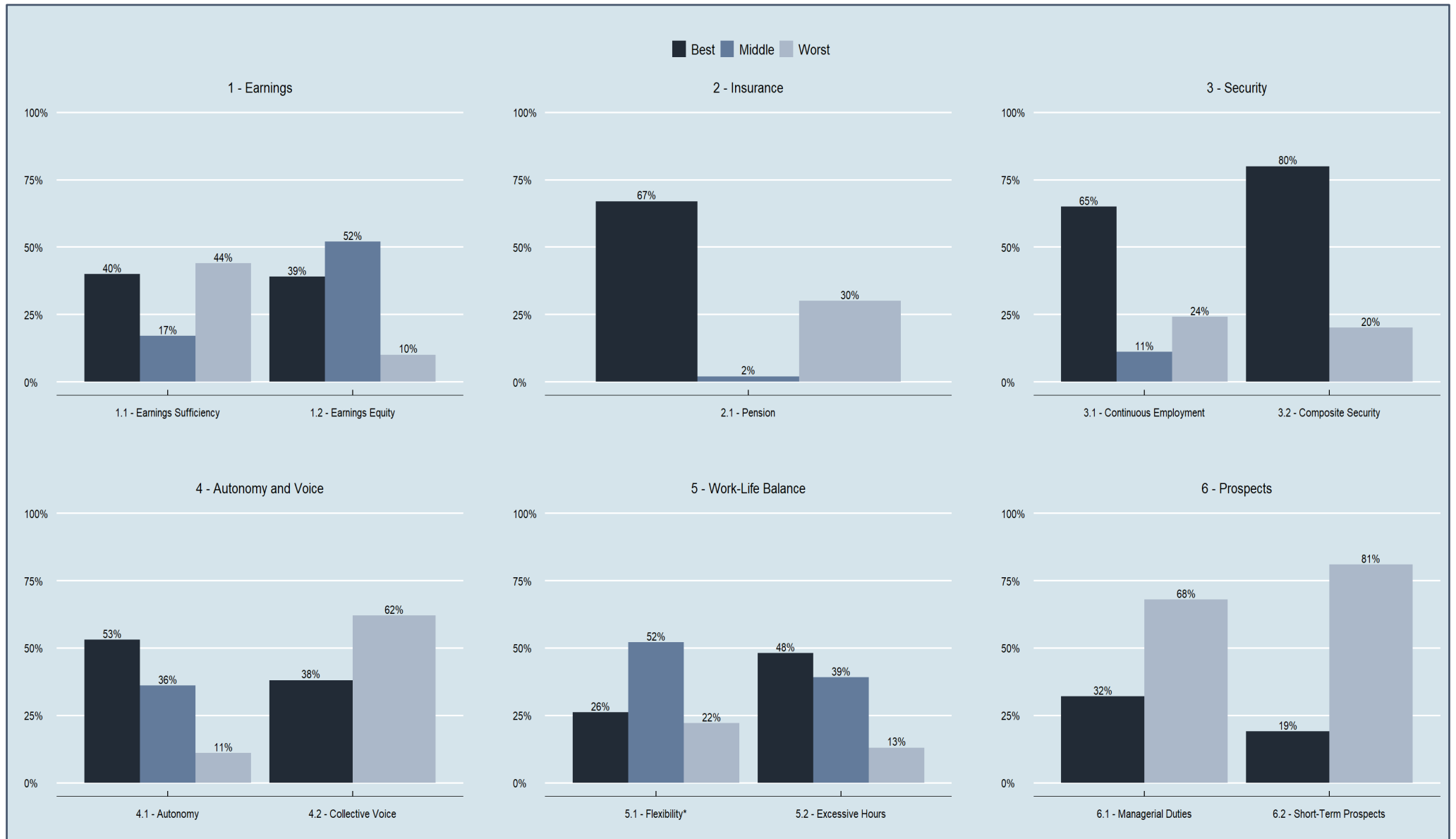
Security and Prospects caused by a decline in the proportion who regard their job as permanent in the former (the Composite Security indicator); and, for the latter, a rise in the proportion of solo-self-employed (Managerial Duties) and a fall in the proportion of self-employed who expect a better job in the next 12 months (Short-Term Prospects). There has been a pronounced improvement in the Work-Life Balance dimension, driven by a fall in working hours amongst the self-employed, and indeed this remains the one dimension where the self-employed score better than employees. All these trends are consistent with the discussion of trends in self-employment in UK job quality literature, which suggest that newly self-employed workers tend to have fewer other work opportunities, are solo self-employed, and work fewer hours than workers who were historically self-employed (Giupponi and Xu, 2020).

4.2 HIGHER WAGES, INSUFFICIENT EARNINGS?

Some noteworthy trends within the Earnings dimension warrant unpacking. Figures 5-6 show that the rise in Earnings dimension scores for employees has been driven by a marked improvement in wages at the bottom 20% of the earnings distribution: there has been a sharp fall in the proportion of employees scoring Worst in Earnings Equity, particularly in the final wave (2020-21), with those workers moving to what was the 20th-60th percentile of the distribution in Wave 4. There has been no corresponding rise at the upper end of the distribution, such that the proportion of employees in the top 40% of the distribution remains broadly where it was at the start of the time series. This trend is well-discussed in the literature, with recent Resolution Foundation research for the Economy 2030 inquiry highlighting the marked improvement in wages at the bottom end of the distribution, partly as a result of the introduction of the National Living Wage (Resolution Foundation, 2023).

However, there is little sign of a corresponding improvement in Earnings Equity for employees. Put another way, whilst the position of the bottom 20% of the wage distribution

Figure 2. Indicator headcount ratios – proportion of workers scoring best, middle and worst in each QoW indicator in Wave 12 (2020-21).



* Self-employed are not scored on the Flexibility indicator. As such, Flexibility figures are as a proportion of employees only, excluding the self-employed.

Figure 3. Labour market polarisation? Time series changes in weighted mean QoW scores by selected sub-groups, Wave 4 (2012-13) to Wave 12 (2020-2021).

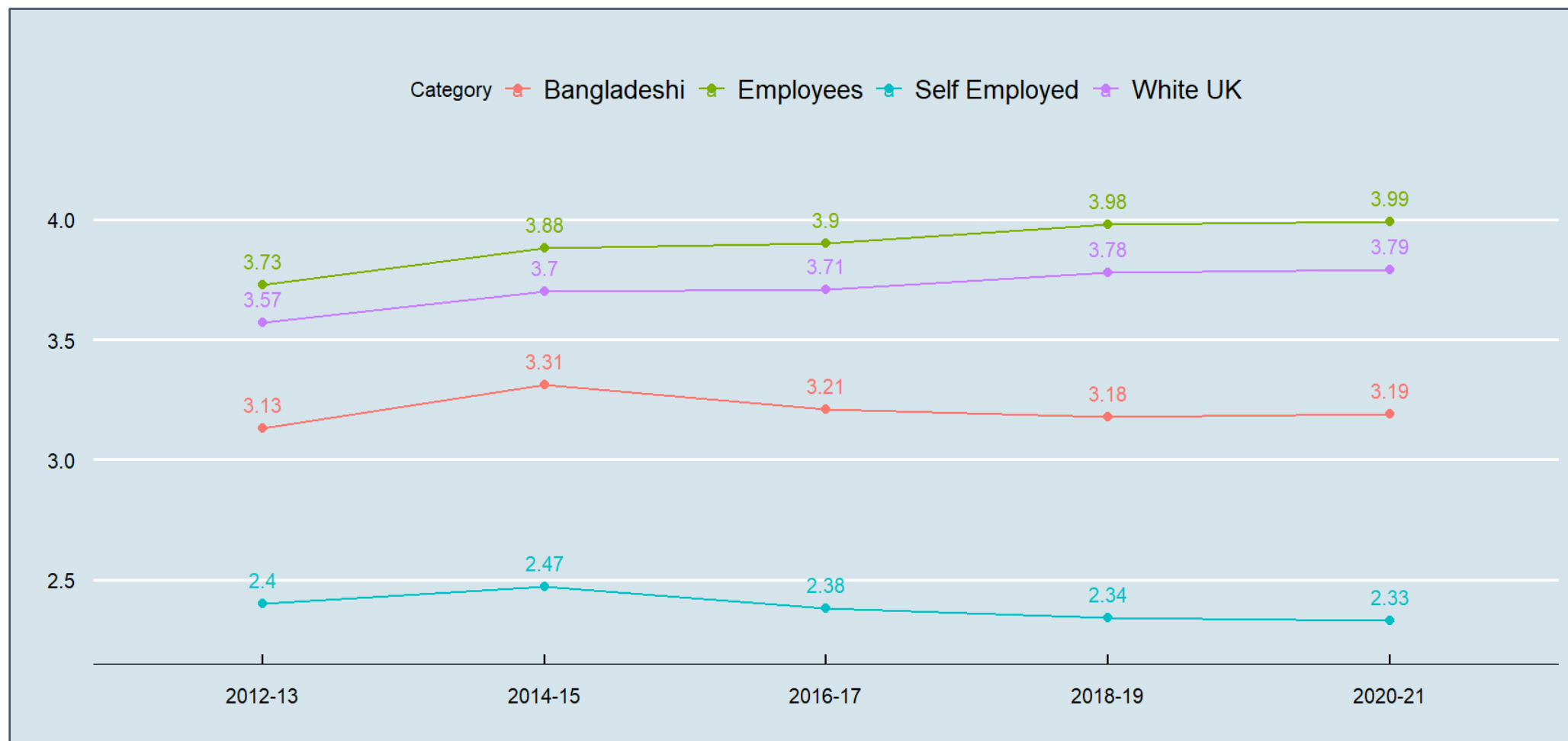
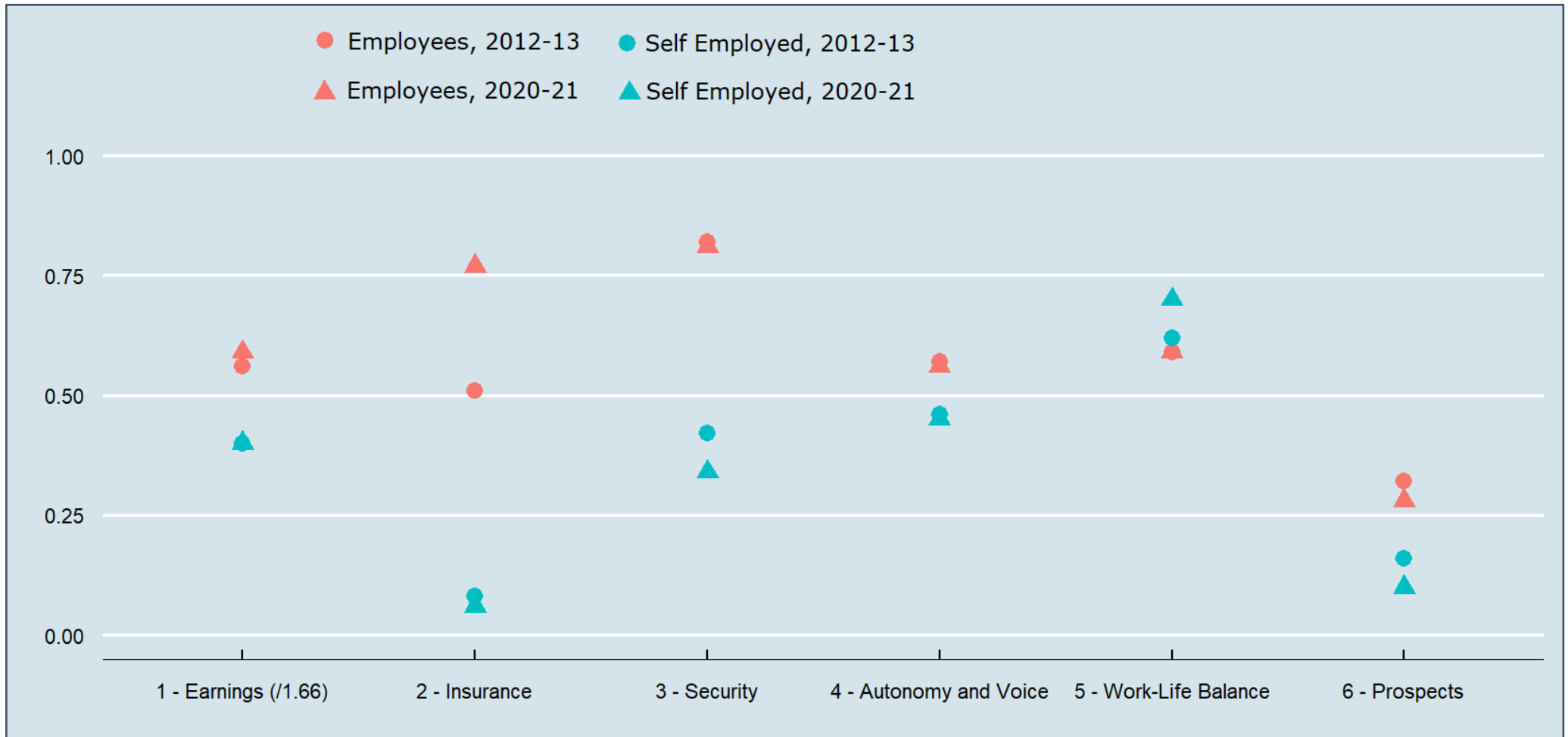


Figure 4. Changes in weighted mean QoW scores for employees and self-employed workers in each dimension, Wave 4 (2012-13) vs. Wave 12 (2020-21).*



* Note that to ease comparison, the earnings score is scaled down to a 0-1 scale on tables and figures comparing dimensions. This does not reflect its weighting in the QoW index.

Figure 5. Time series of indicator headcount ratios for Earnings Sufficiency, Wave 4 (2012-13) to Wave 12 (2020-21).

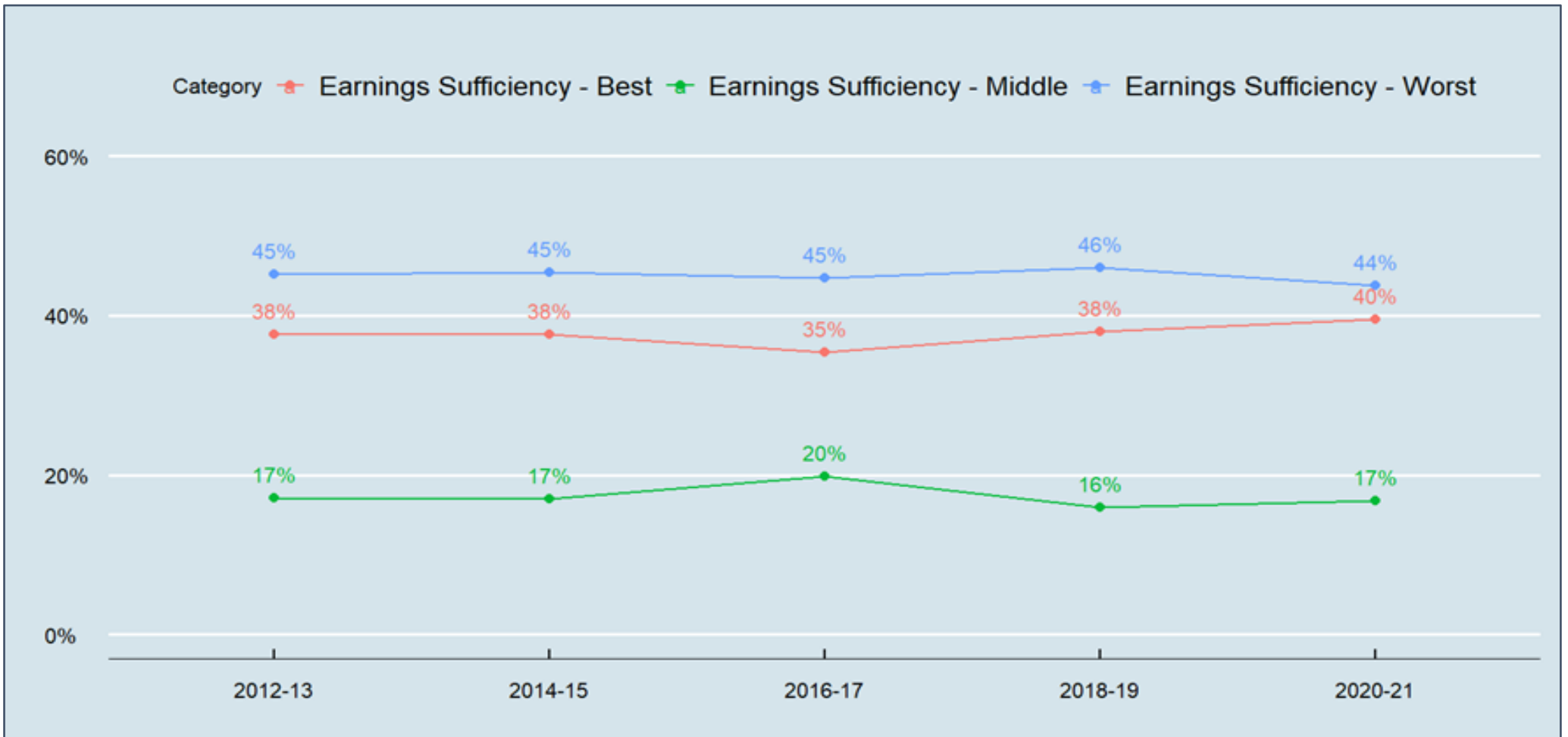
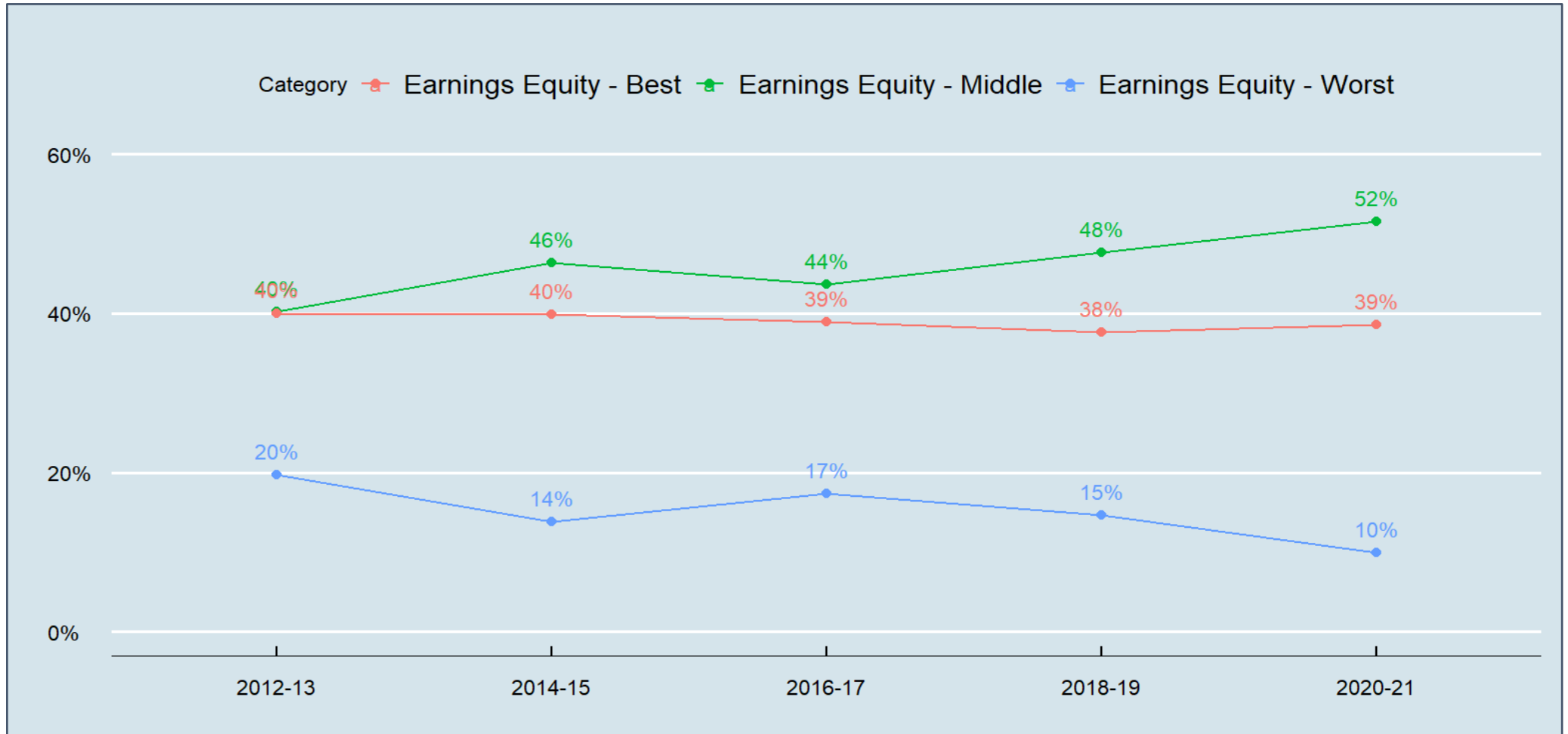


Figure 6. Time series indicator headcount ratios for Earnings Equity, Wave 4 (2012-13) to Wave 12 (2020-21).



has improved, this does not appear to have been enough to bring their overall earnings, once accounting for hours worked, above the Minimum Income Standards thresholds (see Figure 5). This trend requires further investigation, and has potential implications for the relative importance of wages vs. overall take-home pay in the conceptualisation and measurement of job quality. It appears not to be related to hours worked, since mean employee hours have remained constant across the time series, and is therefore likely related to the Minimum Income Standards thresholds set and how they relate to the earnings distribution and the cost of living.

The data suggest that there has been no corresponding improvement in the Earnings dimension for the self-employed. Because most studies of earnings trends for UK job quality use (employee-only) ASHE data, this has received less discussion in the literature. Whilst there has been some, albeit much less pronounced, improvement in Earnings Equity, this has been counter-acted by an equal and opposite fall in Earnings Sufficiency (see Table A3). The latter is likely related to a fall in self-employed working hours meaning that, whilst wages at the bottom of the distribution are up, their lower working hours prevent them from enjoying a minimum standard of living from their earnings alone.

4.3 DIMENSIONAL CORRELATIONS

Table 2 presents weighted Spearman correlation coefficients between each dimension of the QoW index. Tables 3-4 further illustrate this relationship, cross-tabulating the relationships between dimension headcount ratios for all dimensions. In general, there are relatively low correlations between dimension scores – this serves, in itself, as an illustration of the importance of measuring factors other than earnings in job quality. In line with some other job quality indices (see Muñoz de Bustillo 2011) there is a negative correlation between Work-Life Balance and other dimensions, especially Earnings. This reflects the fact that under-employed workers will score well on Excessive Hours, but poorly on Earnings Sufficiency. The negative correlation

is an intended effect of the QoW index: whilst the indicator cut-offs have been designed in a way that it should be possible for workers to score well in *both* Earnings *and* Work-Life Balance, the data show just 16% of workers are able to do so. This suggests the existence of work-family and family-work conflict for many workers in the index.

4.4 SUB-GROUP DIFFERENCES

Figure 5 shows the differences in weighted mean QoW intensity scores by selected five pairs of sub-groups. Further sub-group differences and information on the non-parametric statistical tests used are presented in Appendix A. The data show significant differences in QoW scores by sex, employee vs. self-employed status, region of residence, ethnicity, and age. Importantly, however, the differences are not uniform across each dimension. Reflecting the negative correlation between Work-Life Balance and other dimensions, there is a tendency for groups which score poor in other dimensions to score well in Work-Life Balance.

However, in all cases, overall QoW index scores for these sub-groups are worse: in other words, this difference fails to compensate for much poorer scores in other QoW dimensions. This is particularly stark for the self-employed, who score significantly better than employees on Work-Life Balance but significantly worse on all other dimensions (although it should be noted that there is a high degree of polarisation of self-employed Work-Life Balance scores, with a high proportion scoring Worst vs. employees, but an even higher proportion scoring Best).

Women score better on Work-Life Balance, but this is more than compensated for by considerably worse scores in Earnings due to the higher weighting of the latter in the index. For younger workers (16-24) and workers of Pakistani ethnicity, there are notably significant differences in the Insurance and Security dimensions in addition to poor scores on Earnings, suggesting that interventions to improve QoW in these two subgroups would need to place a greater emphasis on improving job security and increasing pension enrolment. Within UK regions, London and the South

Table 2. Weighted Spearman correlation coefficients between each QoW dimension in Wave 12 (2020-21).

	Earnings	Insurance	Security	Autonomy and Voice	Work-Life Balance	Prospects
Earnings	-	0.36	0.28	0.27	-0.14	0.31
Insurance		-	0.46	0.30	-0.10	0.17
Security			-	0.24	-0.09	0.11
Autonomy and Voice				-	0.12	0.09
Work-Life Balance					-	-0.13
Prospects						-

Table 3. Cross-tabulation of weighted proportion of workers in the index scoring (a) **below the dimensional headcount ratio threshold (≤ 0.5) (top-right half) in both dimensions and (b) above the dimensional headcount ratio threshold (> 0.5) in both dimensions (bottom-left half) for each dimension. Pooled data (Waves 4, 6, 8, 10 and 12).**

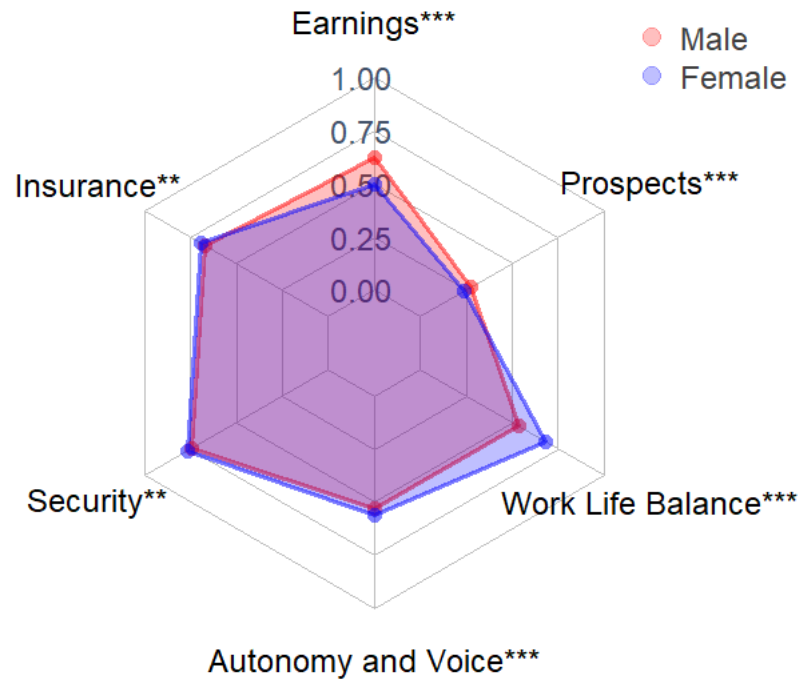
	Earnings	Insurance	Security	Autonomy and Voice	Work-Life Balance	Prospects
Earnings	-	33%	24%	43%	25%	57%
Insurance	30%	-	24%	38%	20%	42%
Security	18%	46%	-	28%	16%	33%
Autonomy and Voice	18%	29%	28%	-	35%	62%
Work-Life Balance	16%	28%	33%	19%	-	45%
Prospects	5%	5%	6%	3%	3%	-

Table 4. Cross-tabulation of weighted proportion of workers in the index scoring below the dimensional headcount ratio threshold (≤ 0.5) in one dimension and above headcount ratio threshold (> 0.5) in another dimension for each dimension of QoW. Pooled data.

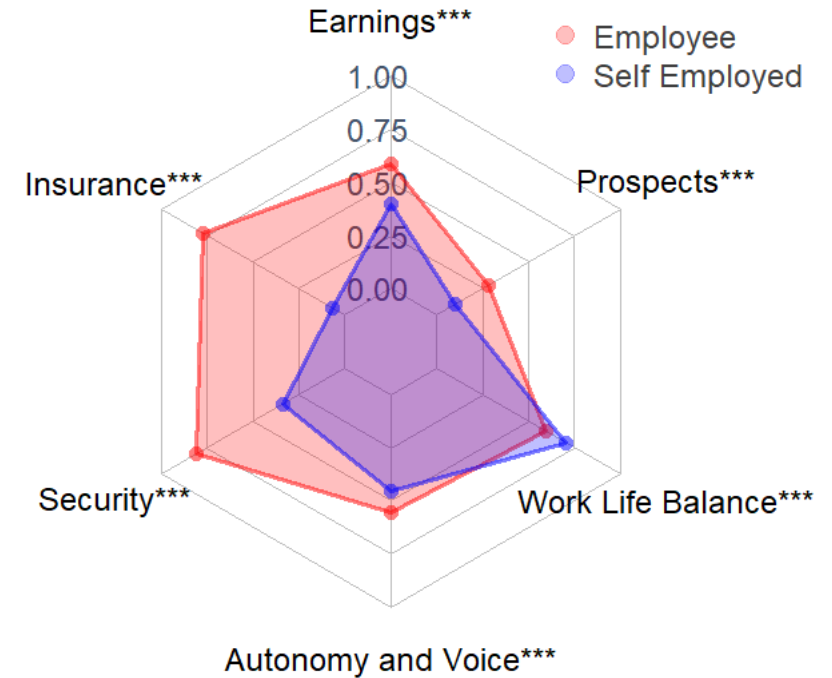
	Earnings ≤ 0.5	Insurance ≤ 0.5	Security ≤ 0.5	Autonomy and Voice ≤ 0.5	Work-Life Balance ≤ 0.5	Prospects ≤ 0.5
Earnings > 0.5	-	11%	11%	23%	24%	36%
Insurance > 0.5	27%	-	10%	27%	29%	51%
Security > 0.5	36%	19%	-	38%	33%	60%
Autonomy and Voice > 0.5	16%	5%	6%	-	14%	31%
Work-Life Balance > 0.5	35%	23%	18%	31%	-	48%
Prospects > 0.5	3%	2%	2%	4%	4%	-

Figure 5. Radar plots of differences in weighted means between selected pairs of sub-groups for each dimension of QoW in Wave 12 (2020-21). Asterisks represent whether the difference between the given two sub-groups is statistically significant at the 0.05 (*), 0.01(**) and 0.001(***) confidence level.

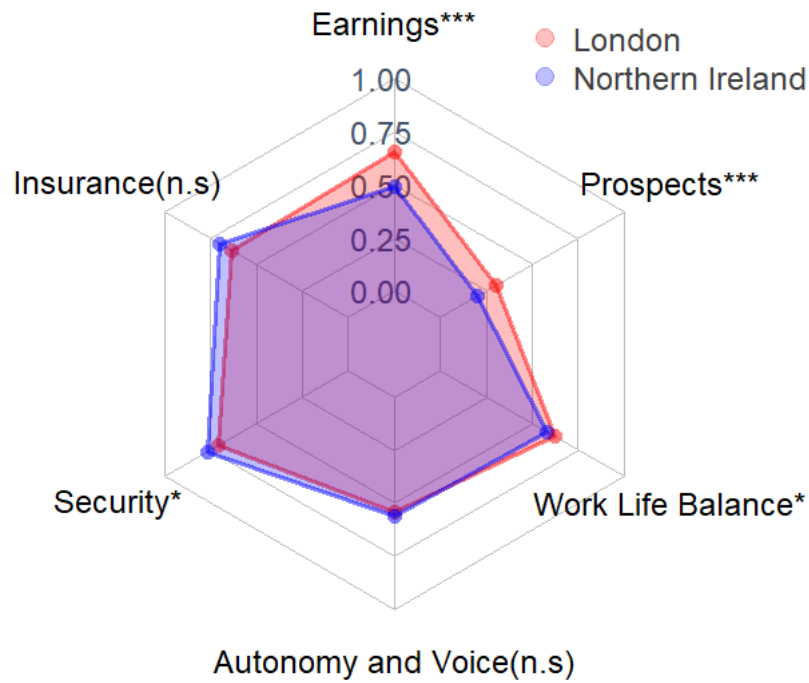
5a Male vs. Female



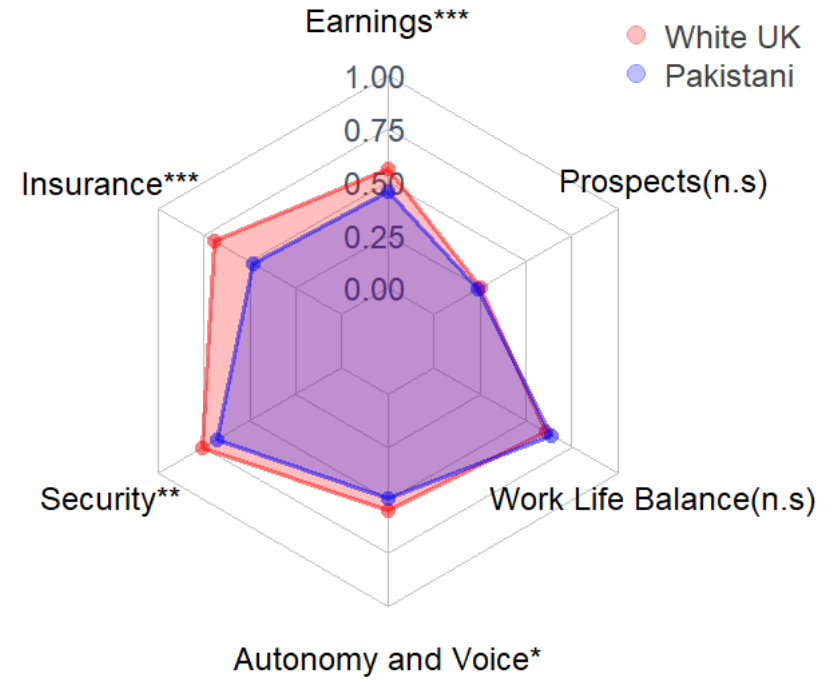
5b Employee vs. Self Employed



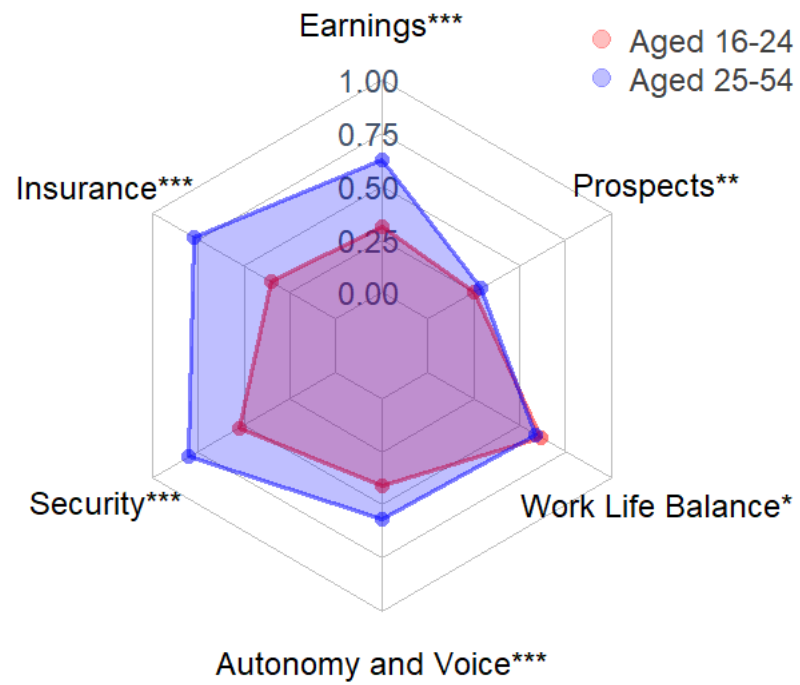
5c London vs. Northern Ireland



5d White UK vs. Pakistani



5e Aged 16-24 vs. 25-54



East tend to score significantly better on Earnings and Prospects, but significantly worse on Security, than the rest of the UK – the latter likely reflecting the more mobile labour force in these regions, with fewer years of continuous service (Appendix A, Table A6).

5. Conclusions

This paper has presented the first data on a synthetic index of QoW for the UK. It has operationalised a conceptual framework I introduced in an earlier paper, using an aggregation method that has been used in recent international studies. Drawing from the latest academic developments in multidimensional job quality, and in light of the particular legal and societal context in the UK, it has proposed and defended a range of indicators and dimensions of QoW, with an emphasis on data measuring objective rather than subjective indicators where available. The index is designed to address a lack of regular published data on job quality in UK national statistics, and to bridge the gulf between recent UK policymakers' applications of job quality and academic research on social indicators.

The results provide new evidence on the trends in QoW in the UK and its distribution across groups. It suggests widening polarisation between employees and self-employed workers: the former have seen significant improvements in Insurance and a slight improvement in Earnings, whilst the latter have seen a decline in QoW driven particularly by falls in Security and Prospects, but an improvement in Work-Life Balance. The nature of QoW differs significantly between sub-groups, which calls for nuanced distinctions to be made into the particular drivers of poor QoW by age, region, ethnicity, and sex.

The data suggests many workers face a challenge in simultaneously achieving work-family balance and decent earnings: where workers are able to score well in Work Family Balance, they tend to achieve this by sacrificing hours and thus scoring poorly on Earnings. Consistent with this,

also suggests that , despite improvements in wages at the bottom fifth of the distribution, there is no guarantee that this will lead to an improvement in the sufficiency of overall earnings to meet minimum standards.

As highlighted in the introduction, this paper provides an initial picture of the data available in the QoW index. Further analysis will be undertaken in future papers, particularly to explore the relationship between indicator, dimension and index scores and a range of other dependent variables, and the index will be supplemented by new indicators on prospects, health and safety and other areas.

Nevertheless, the data suggests that Understanding Society has a range of advantages as the basis for a QoW index, comparing well with alternative datasets for the reasons outlined in Section 3.1 and elaborated on in Appendix B. There is potential for future research to build on this by making greater use of synthetic indices of job quality; identifying and testing further potential social indicators; linking Understanding Society data with administrative records and other surveys; developing international comparisons; and carrying out more detailed sub-group analysis. This would allow us to develop a more detailed picture of QoW both in the UK and internationally – in time paving the way towards regular published national statistics on job quality.

Notes

- 1.** In this paper, to avoid confusion over multiple terms, I exclusively use the term 'job quality' when reviewing existing literature. In Section 2, I then adopt the term 'Quality of Work' (QoW) to refer to the specific approach to measuring job quality being introduced in this paper.
- 2.** The term 'wellbeing' is used in this paper as a comprehensive term to refer to all aspects of peoples' quality of life. 'Work-related wellbeing' is defined strictly as the wellbeing people get from work resources. For simplicity, competing conceptions of quality of life, such as human need, are not referred to in this paper.
- 3.** For those with multiple jobs, Understanding Society prompts respondents to identify their main job as the one they are paid the most in or, if earnings are equal, they are asked the job with the most hours. Subsequent survey questions referring to the "current job" are questions about this main job. The question `jbsemp` asks workers whether they are an employee or self-employed in their current (ie main) job. This determines the nature of subsequent questions asked about this job. This means that coverage of multiple jobs in Understanding Society is, as with other surveys, incomplete; and that some questions asked of employees are not asked of self-employed, and vice-versa.
- 4.** To calculate this, net monthly labour income (`fimnlabnet_dv`) is converted into an annualised net earnings variable. Thresholds are then set by comparing this with the relevant annualised MIS thresholds from April of the year in which the respondent is interviewed. Note that as data collection in each wave takes place over three years, three thresholds are used in any given wave (although most respondents in each wave are interviewed in the first two of these years).
- 5.** To calculate this, the gross usual monthly labour income (`fimnlabgrs_dv`), employee hours worked (`jbhrs`), self-employed hours worked (`jshrs`) and hours worked in additional jobs (`j2hrs`) variables are converted into weekly variables. Weekly gross earnings are then divided by the sum of these variables.
- 6.** These are part-time working, working term-time only, job sharing, flexi-time, working a compressed week, working annualised hours, working from home on a regular basis, and other flexible work arrangements. Note two additional arrangements (zero-hours and on-call working) were introduced in wave 8, but these are excluded from the indicator because (a) they would make the time series inconsistent, and (b) in any event, literature would suggest both in fact reflect poor rather than good work-family balance.

References

- Alkire, S., Foster, J., 2011a. Understandings and misunderstandings of multidimensional poverty measurement. *J Econ Inequal* 9, 289–314. <https://doi.org/10.1007/s10888-011-9181-4>
- Alkire, S., Foster, J., 2011b. Counting and multidimensional poverty measurement. *Journal of Public Economics* 95, 476–487. <https://doi.org/10.1016/j.jpubeco.2010.11.006>
- Alkire, S., Foster, J.E., Seth, S., Santos, M.E., Roche, J.M., Ballón, P., 2015. *Multidimensional poverty measurement and analysis*, First edition. ed. Oxford University Press, New York, NY, USA.
- Anand, P., Hunter, G., Carter, I., Dowding, K., Guala, F., Van Hees, M., 2009. The Development of Capability Indicators. *Journal of Human Development and Capabilities* 10, 125–152. <https://doi.org/10.1080/14649880802675366>
- Anker, R., Chernyshev, I., Egger, P., Mehran, F., Ritter, J.A., 2003. Measuring decent work with statistical indicators. *International labour review* 142, 147–178.
- Annor, F., Burchell, B., 2018. A cross-national comparative study of work demands/support, work-to-family conflict and job outcomes: Ghana versus the United Kingdom. *Int'l Jnl of Cross Cultural Management* 18, 53–72. <https://doi.org/10.1177/1470595817746195>
- Barr, N.A., 2020. *The economics of the welfare state*, Sixth Edition. ed. Oxford University Press, Oxford, UK.
- Barr, N.A., Diamond, P.A., 2010. *Pension reform: a short guide*. Oxford University Press, New York.
- Belloni, M., Carrino, L., Meschi, E., 2022. The impact of working conditions on mental health: Novel evidence from the UK. *Labour Economics* 76, 102176. <https://doi.org/10.1016/j.labeco.2022.102176>
- Bennett, J.T., Kaufman, B.E. (Eds.), 2007. *What do unions do? a twenty-year perspective*. Transaction Publishers, New Brunswick, NJ, USA.
- Bescond, D., Chataignier, A., Mehran, F., 2003. Seven indicators to measure decent work: an international comparison. *International labour review* 142, 179–212.
- Bonvin, J.-M., 2012. Individual working lives and collective action. An introduction to capability for work and capability for voice. *Transfer: European Review of Labour and Research* 18, 9–18. <https://doi.org/10.1177/1024258911431046>
- Boroff, K.E., Lewin, D., 1997. Loyalty, Voice, and Intent to Exit a Union Firm: A Conceptual and Empirical Analysis. *Industrial and Labor Relations Review* 51, 50–63. <https://doi.org/10.2307/2525034>
- Bradshaw, J., Middleton, S., Davis, A., Oldfield, N., Smith, N., Cusworth, L., Williams, J., 2008. *A minimum income standard for Britain: What people think*. Joseph Rowntree Foundation, York, UK.
- Brown, A., Charlwood, A., Spencer, D.A., 2012. Not all that it might seem: why job satisfaction is worth studying despite it being a poor summary measure of job quality. *Work, Employment and Society* 26, 1007–1018. <https://doi.org/10.1177/0950017012461837>
- Budd, J.W., Gollan, P.J., Wilkinson, A., 2010. New approaches to employee voice and participation in organizations. *Human Relations* 63, 303–310. <https://doi.org/10.1177/0018726709348938>
- Burchardt, T., Vizard, P., 2011. 'Operationalizing' the capability approach as a basis for equality and human rights monitoring in twenty-first century Britain. *Journal of Human Development and Capabilities* 12, 91–119. <https://doi.org/10.1080/19452829.2011.541790>
- Cazes, S., Hijzen, A., Saint-Martin, A., 2016. *Measuring and Assessing Job Quality: The OECD Job Quality Framework (OECD Social, Employment and Migration Working Paper No. 174)*. OECD, Paris, France.
- Chung, H., van der Lippe, T., 2020. Flexible Working, Work–Life Balance, and Gender Equality: Introduction. *Soc Indic Res* 151, 365–381. <https://doi.org/10.1007/s11205-018-2025-x>

- Cominetti, N., McCurdy, C., Thwaites, G., Vieira-Marques, R., 2023. Low Pay Britain 2023: Improving low-paid work through higher minimum standards. Resolution Foundation and Centre for Economic Performance, London, UK.
- De Leonardis, O., Negrelli, S., Salais, R. (Eds.), 2012. Democracy and capabilities for voice: welfare, work and public deliberation in Europe, *Work & society*, 1376-0955. P.I.E. Peter Lang, Bruxelles ; New York.
- De Munck, J., Ferreras, I., 2013. Restructuring processes and capability for voice: case study of Volkswagen, Brussels. *International Journal of Manpower* 34, 397-412. <http://dx.doi.org.gate3.library.lse.ac.uk/10.1108/IJM-05-2013-0099>
- Dobbins, T., 2022. Good work: Policy and research on the quality of work in the UK (Research Briefing No. 9561). House of Commons Library, London, UK.
- Epstein, C.F. (Ed.), 1999. The part-time paradox: time norms, professional lives, family, and gender. Routledge, New York, USA.
- Esping-Andersen, G., 1996. Equality or employment? The interaction of wages, welfare states and family change. *Transfer: European Review of Labour and Research* 2, 615-634. <https://doi.org/10.1177/102425899600200405>
- European Commission, 2003. Improving quality in work: a review of recent progress (No. COM(2003) 728). European Commission, Brussels, Belgium.
- European Commission, 2001. Employment and social policies: a framework for investing in quality. European Commission, Brussels, Belgium.
- Felstead, A., Gallie, D., Green, F., Henseke, G., 2019. Conceiving, designing and trailing a short-form measure of job quality: a proof-of-concept study. *Industrial Relations Journal* 50, 2-19.
- Fisher, P., Fumagalli, L., Buck, N., Avram, S., 2019. Understanding Society and its income data (No. 2019- 08). University of Essex, Essex, UK.
- Freeman, R.B., Medoff, J.L., 1992. What do unions do?, 5th Edition. ed. Basic Books, New York, USA.
- Gallie, D. (Ed.), 2007. Employment regimes and the quality of work. Oxford University Press, Oxford, UK.
- Gallie, D., Felstead, A., Green, F., 2004. Changing Patterns of Task Discretion in Britain. *Work Employ Soc* 18, 243-266. <https://doi.org/10.1177/09500172004042769>
- García-Pérez, C., Prieto-Alaiz, M., Simón, H., 2017. A New Multidimensional Approach to Measuring Precarious Employment. *Soc Indic Res* 134, 437-454. <https://doi.org/10.1007/s11205-016-1447-6>
- Giupponi, G., Xu, X., 2020. What does the rise of self-employment tell us about the UK labour market? Institute for Fiscal Studies, London, UK.
- González, P., Sehnbruch, K., Apablaza, M., Méndez Pineda, R., Arriagada, V., 2021. A Multidimensional Approach to Measuring Quality of Employment (QoE) Deprivation in Six Central American Countries. *Soc Indic Res* 158, 107-141. <https://doi.org/10.1007/s11205-021-02648-0>
- Green, F., 2007. Demanding work: the paradox of job quality in the affluent economy. Princeton University Press, Princeton, NJ, USA.
- Green, F., 2001. It's Been A Hard Day's Night: The Concentration and Intensification of Work in Late Twentieth-Century Britain. *British Journal of Industrial Relations* 39, 53-80. <https://doi.org/10.1111/1467-8543.00189>
- Green, F., Felstead, A., Gallie, D., Henseke, G., 2021. Working Still Harder. *ILR Review* XX, 1-30. <https://doi.org/10.1177/0019793920977850>
- Hirsch, D., 2015. Inflation and the minimum income standard: past and future measures (CRSP Working Paper 645). Centre for Research in Social Policy, Loughborough University, Loughborough, UK.
- Hirschman, A.O., 1970. Exit, voice, and loyalty: responses to decline in firms, organizations, and states. Harvard University Press, Cambridge, MA, USA.
- Hobson, B., 2011. The Agency Gap in Work-Life Balance: Applying Sen's Capabilities Framework Within European Contexts. *Social Politics: International Studies in Gender, State & Society* 18, 147-167. <https://doi.org/10.1093/sp/jxr012>

- Hovhannishan, S., Montalva-Talledo, V., Remick, T., Rodriguez-Castelán, C., Stamm, K., 2022. Global Job Quality: Evidence from wage employment across developing countries (Policy Research Working Paper 10134). World Bank, Washington DC, USA.
- ILO, 1999. Decent work, Report of the Director General of the ILO to the 87th session of the International Labour Conference. International Labour Organisation, Geneva, Switzerland.
- Irvine, G., White, D., Diffley, M., 2018. Measuring good work: the final report of the measuring job quality working group. Carnegie UK, Dunfermline, Scotland.
- Kalleberg, A.L., 2018. Precarious lives: job insecurity and well-being in rich democracies. Polity Press, Cambridge, UK.
- Kaminska, O., Lynn, P., 2019. Weighting and Sample Representation: Frequently Asked Questions. Institute for Social and Economic Research, University of Essex, Essex, UK.
- Leschke, J., Watt, A., 2014. Challenges in constructing a multi-dimensional European job quality index. *Social indicators research* 118, 1–31.
- Leschke, J., Watt, A., Finn, M., 2008. Putting a Number on Job Quality? Constructing a European Job Quality Index. *Social Indicators Research* 118, 1–31.
- Lewis, J., Giullari, S., 2005. The adult worker model family, gender equality and care: the search for new policy principles and the possibilities and problems of a capabilities approach. *Economy and Society* 34, 76–104. <https://doi.org/10.1080/0308514042000329342>
- Lindley, J., Machin, S., 2013. Wage inequality in the Labour years. *Oxford Review of Economic Policy* 29, 165–177. <https://doi.org/10.1093/oxrep/grt009>
- Lynn, P., 2011. Maintaining Cross-Sectional Representativeness in a Longitudinal General Population Survey. Institute for Social and Economic Research, University of Essex, Essex, UK.
- Machin, S., 2011. Changes in UK Wage Inequality Over the Last Forty Years, in: Gregg, P., Wadsworth, J. (Eds.), *The Labour Market in Winter: The State of Working Britain*. Oxford University Press, Oxford, UK. <https://doi.org/10.1093/acprof:osobl/9780199587377.003.0012>
- Matejic, P., 2017. Income Dynamics: Income movements and the persistence of low incomes. Department for Work and Pensions, London, UK.
- Muñoz de Bustillo, R. (Ed.), 2011. *Measuring more than money: the social economics of job quality*. Edward Elgar, Cheltenham, UK.
- Nussbaum, M.C., 2011. *Creating capabilities: the human development approach*. Belknap Press of Harvard University Press, Cambridge, MA, USA.
- OECD, 2019. *OECD employment outlook 2019: the future of work*, OECD employment outlook. Organisation for Economic Cooperation and Development, Paris, France. <https://doi.org/10.1787/9ee00155-en>
- OECD, 2017. *OECD Employment Outlook 2017*. Organisation for Economic Cooperation and Development, Paris, France.
- OECD, 2003. *OECD Employment Outlook 2003: towards more and better jobs*. Organisation for Economic Cooperation and Development, Paris, France.
- ONS, 2023. Average actual weekly hours of work for full-time workers (seasonally adjusted). Office for National Statistics, Newport, Wales, UK.
- ONS, 2022. Understanding changes in self-employment in the UK: January 2019 to March 2022. Office for National Statistics, Newport, Wales.
- Parasuraman, S., Simmers, C.A., 2001. Type of Employment, Work-Family Conflict and Well-Being: A Comparative Study. *Journal of Organizational Behavior* 22, 551–568.
- Piasna, A., Burchell, B., Sehnbruch, K., 2019. Job quality in European employment policy: one step forward, two steps back? *Transfer: European Review of Labour and Research* 25, 165–180. <https://doi.org/10.1177/1024258919832213>

- Qizilbash, M., 1996. Capabilities, well-being and human development: A survey. *The Journal of Development Studies* 33, 143–162. <https://doi.org/10.1080/00220389608422460>
- Resolution Foundation, 2023. Good work: How to renew the UK’s economic strategy and put better jobs at its heart, in: Panel Event for the Economy 2030 Inquiry. Resolution Foundation, London, UK.
- Robeyns, I., 2017. Wellbeing, freedom and social justice: the capability approach re-examined. Open Book Publishers, Cambridge, UK.
- Sehnbruch, K., González, P., Apablaza, M., Méndez, R., Arriagada, V., 2020. The Quality of Employment (QoE) in nine Latin American countries: A multidimensional perspective. *World development* 127, 104738-. <https://doi.org/10.1016/j.worlddev.2019.104738>
- Sen, A., 2000. Work and rights. *International labour review* 139, 81–92. <http://dx.doi.org/10.1111/j.1564-913X.2000.tb00406.x>
- Sen, A., 1992. Inequality reexamined, Reprint. ed. Oxford University Press, New York, USA.
- Sen, A., 1991. Welfare, preference and freedom. *Journal of econometrics, Journal of Econometrics* 50, 15–29. [https://doi.org/10.1016/0304-4076\(91\)90087-T](https://doi.org/10.1016/0304-4076(91)90087-T)
- Sen, A., 1987. Commodities and capabilities. Oxford Univ. Press, New Delhi.
- Slaughter, H., 2021. Labour Market Outlook Q2 2021. Resolution Foundation, London, UK.
- Spencer, D.A., 2015. Developing an understanding of meaningful work in economics: the case for a heterodox economics of work. *Cambridge Journal of Economics* 39, 675–688.
- Stephens, T.C., 2023. The Quality of Work (QoW): Towards a Capability Theory. *Journal of Human Development and Capabilities* 24, 1–27. <https://doi.org/10.1080/19452829.2023.2240738>
- Suppa, N., 2019. Work and Wellbeing: A Conceptual Proposal (Report No. 131). Oxford Poverty and Human Development Initiative, Oxford, UK.
- Taylor, M., 2017. Good work: the Taylor review of modern working practices. Department for Business, Energy and Industrial Strategy, London, UK.
- UK Data Service, 2015. Analysing change over time: repeated cross sectional and longitudinal survey data. UK Data Service, Colchester, University of Essex.
- Weidel, T., 2018. Moving Towards a Capability for Meaningful Labor. *Journal of Human Development and Capabilities* 19, 70–88. <https://doi.org/10.1080/19452829.2017.1408575>
- Wheatley, D., 2021. Workplace location and the quality of work: The case of urban-based workers in the UK. *Urban Studies* 58, 2233–2257. <https://doi.org/10.1177/0042098020911887>
- Williams, M., Koumenta, M., 2020. Occupational closure and job quality: The case of occupational licensing in Britain. *Human Relations* 73, 711–736. <https://doi.org/10.1177/0018726719843170>

