

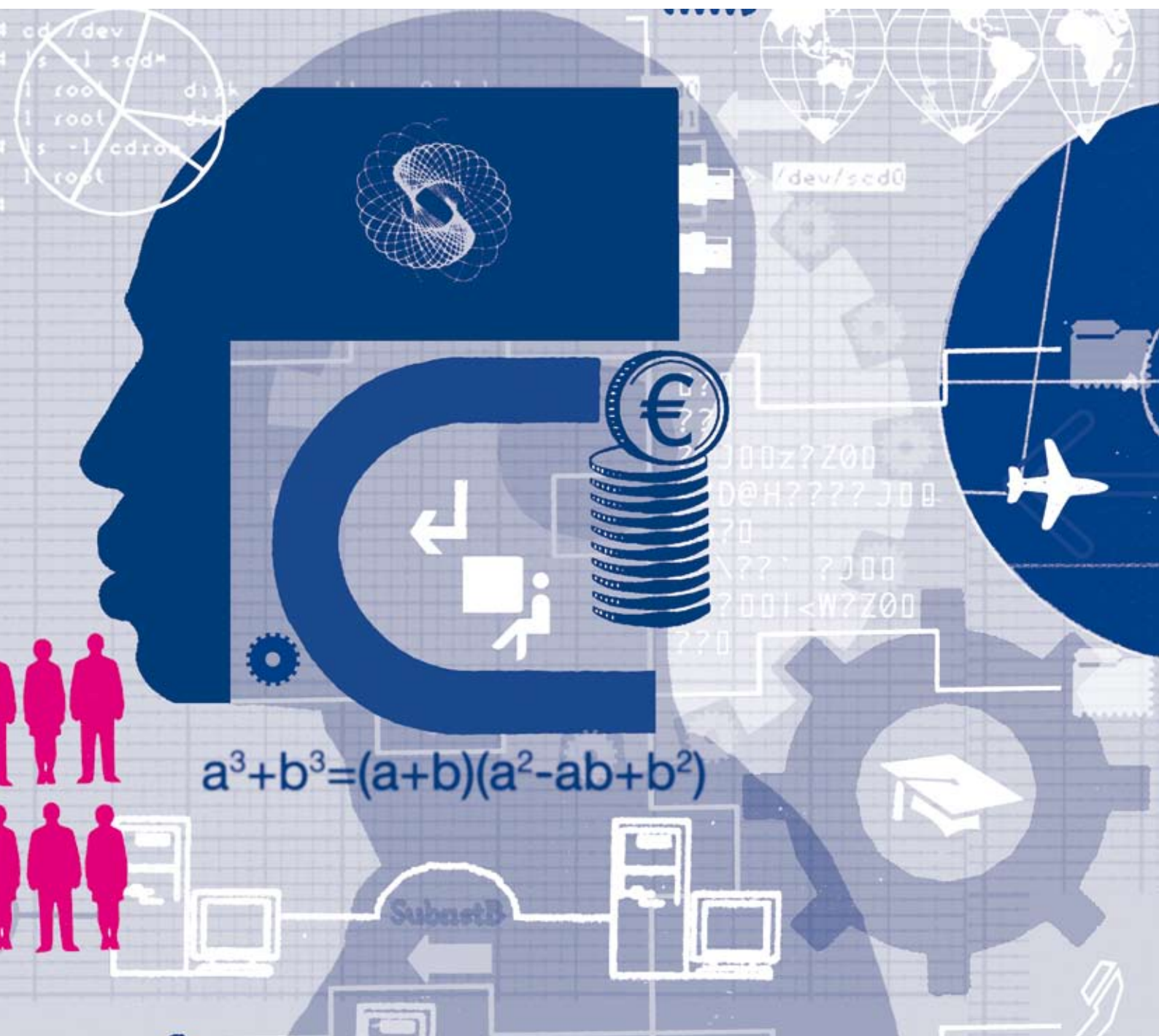


the work foundation

Is Knowledge Work Better For Us? Knowledge workers, good work and wellbeing

A Knowledge Economy Programme Report

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This report has drawn on some of the initial research work and discussions from The Work Foundation's first phase of the Knowledge Economy programme, which was completed in April 2009. We are now in the second phase that is running from May 2009-May 2011. The views set out here are entirely those of The Work Foundation and do not represent those of the sponsoring organisations.

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Executive summary

In this report we bring together our insights on the health and wellbeing of the workforce and the changing nature of work in the knowledge economy to examine whether knowledge work is good work and better for our health and wellbeing. We explore data from our knowledge worker survey and build on the findings from our previous report which provided a new definition of knowledge work.

The knowledge economy and the nature of work

Three closely related changes over the past 40 years have transformed our economy. First, a shift to higher value added services – technology and knowledge intensive industries (as defined by the OECD). Second, a shift from traditional physical assets such as machinery and buildings to investment in intangible assets such as software and human capital. Third, we have seen an increase in the number of employees with higher levels of qualifications.

With all these changes we might have expected to see a significant improvement in both the quality of work and the wellbeing of the workforce. Employers are investing more in their better educated workforce and in ways of organising work. Although measuring change in job quality over time is not straightforward, what evidence does exist suggests little or no increase in job quality with the growth of knowledge based jobs and industries. Research examining trends over time suggests some decline in job quality during the '80s with some improvement in the '90s. Overall, employees report what might be interpreted as reasonable job quality though comparisons to European counterparts reveals room for improvement. The returns for the huge investment of time and effort in trying to up the rhetoric around investing in people as 'our most important asset' appear to have been poor.

Why is job quality important? There is a moral and humanitarian element to any call to employers to provide better quality jobs. There is also an economic imperative. Better jobs mean healthier workers; which means less cost to employers and society and better productivity.

Wellbeing and the workforce

The health and wellbeing of the workforce has important economic implications. Many of the UK working age population are not healthy enough to do make a full contribution to the productivity and growth of the UK economy. Ill health in the UK has been estimated to cost employers and society around £100 billion a year, the equivalent of the GDP of Portugal. Demographic, economic and lifestyle choices suggest that the UK workforce will soon be older and less healthy putting more strain on the NHS and adding cost for employers through sickness absence and presenteeism.

While much of the ill health in our society is caused by individual lifestyle choices, this does not account for all ill health or associated costs. Evidence from a variety of disciplines clearly shows that the causes of ill health can be attributed to four general categories: lifestyle, social, genetic and work-related. Work related causes are defined by a broader set of issues than the traditional health and safety perspective of physical injury and diseases caused by the working environment. The definition of wellbeing adopted by the World Health Organisation outlines wellbeing as ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.’ Work can cause both physical injury and mental distress; it can also exacerbate the impact of conditions with different origins.

Crucially, the workplace can play a more positive role in our wellbeing, beyond simply avoiding causing harm; evidence shows that work is good for us. Not simply in playing a positive role in recovery from ill health, but also playing a positive role in our general health and wellbeing.

There are two broad approaches that employers can take to influence employee wellbeing. First, using the workplace to educate employees about healthier lifestyles and offer easy access to programmes to support their healthy choices (such as gym membership, scans, quick access to occupational health or healthy canteen food). In this scenario, employers facilitate and enable individuals to make healthy lifestyle choices, the ultimate decision and action remains with the employee. There are, however, a range of factors that contribute to health and wellbeing which are within employers’ sphere of influence to control and change. These revolve around the quality of work. Evidence clearly illustrates that the quality of work employees have influences their wellbeing. What is as yet unclear is whether as the nature of work changes, with a shift towards more ‘knowledge work’, the quality of work is improving. Does the knowledge economy mean more ‘good work’? Is ‘knowledge work’ good for us?

Is knowledge work better?

Defining knowledge work has traditionally been based on qualification level or job title, which tells us little of what workers actually do. In our previous report examining the findings from our survey of 2,000 UK workers, we were able to classify workers by the degree to which their jobs are knowledge intensive, based on the actual tasks they perform as part of their jobs. We estimated that 30 per cent of the workforce form the ‘core’ knowledge worker group, with a further 30 per cent requiring some knowledge and 40 per cent requiring little knowledge.

Building on these findings we examined further data from the survey on job quality and employee wellbeing. It is these findings that we present in this report to build a picture of the

quality of jobs in the UK and draw closer to an understanding of whether knowledge work is indeed better for us than non-knowledge work.

In summary our findings revealed that:

- Overall, core knowledge workers reported feeling healthier than other workers and that their health had fewer negative effects on their work.
- Core knowledge workers report better perceptions of job quality than other workers with higher levels of autonomy and social capital, less repetitiveness and less intensity.
- Job quality overall is reasonable, but compared to other research against our European counterparts there is still room for improvement.
- While on the surface knowledge work may therefore appear better for us than non-knowledge work, further analysis reveals that the differences in personal outcomes between workers are primarily attributable to levels of job quality.
- That means there is potential for all workers in the knowledge economy to benefit from better health and wellbeing through better job quality. The degree of knowledge use in jobs is not the critical factor.
- Changing individual lifestyle choices is part of the solution towards a healthier workforce but it needs to be combined with improvements in job quality.
- Specifically job intensity, skills match and social capital were critical aspects of job quality that positively influenced wellbeing, job and life satisfaction.
- Our findings reveal the importance of a positive match of skills to job requirement for wellbeing. Yet fewer than half of workers report a good match. This finding again illustrates there is room for improvement in UK jobs.
- Critically our findings suggest that around 30 per cent of jobs could be classified as 'bad jobs'. These jobs are concentrated around the less knowledge intensive jobs in the labour market.

Conclusion

The main conclusion that we can draw from the evidence presented in this paper is that job quality provides a way to improve the health and wellbeing of the workforce, regardless of the degree of knowledge content of their jobs. The knowledge economy does not appear to be a divisive force in terms of worker job quality or wellbeing. Neither does it appear to be generating overall improvements in job quality. While UK workers overall report reasonable levels of satisfaction with the quality of their work comparable evidence suggests there is room for improvement. Our findings support existing evidence that better quality jobs are better for wellbeing and that this is irrespective of whether the jobs are knowledge jobs. Crucially there

are a significant number of 'bad jobs' in the UK. Given the importance of establishing a healthy workforce, these findings suggest there is scope for employers and policymakers to focus on improving job quality as a route to better employee wellbeing rather than using the workplace solely as a vehicle to facilitate individual lifestyle behaviour change. To that end we recommend a mixed programme of regulatory and non-regulatory reforms.

1. Workforce wellbeing and the knowledge economy

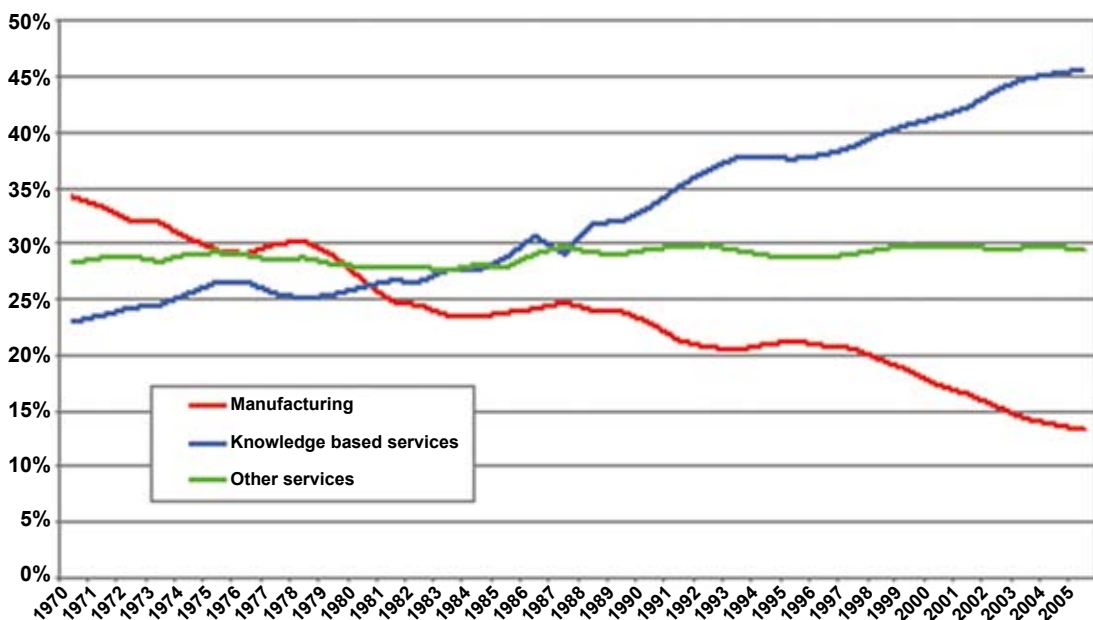
This report explores both the incidence of good work in the UK knowledge economy and the health and wellbeing of workers. It examines whether patterns of good work and job quality are linked to health and wellbeing. Exploring the world of work in the knowledge economy and the health and wellbeing of workers are two key areas of research for The Work Foundation, and in this report we bring together some of the most important insights of our work.

1.1 Work in the knowledge economy

The economy has been transformed over the past forty years by three closely related changes.

Firstly, a shift to higher value added service activities – both through the rise of knowledge intensive industries and the transformation of sectors such as advanced manufacturing, where knowledge intensive employment is now as prevalent as in high tech services. In 2005 over half of value added employment was generated by technological and knowledge intensive industries as defined by the OECD. Figure 1.1 below shows how our economy has changed in terms of industrial structure – a shift common to all OECD economies for which we have comparable figures.

Figure 1.1: Economy restructures towards knowledge based services 1970-2005 – share of value added



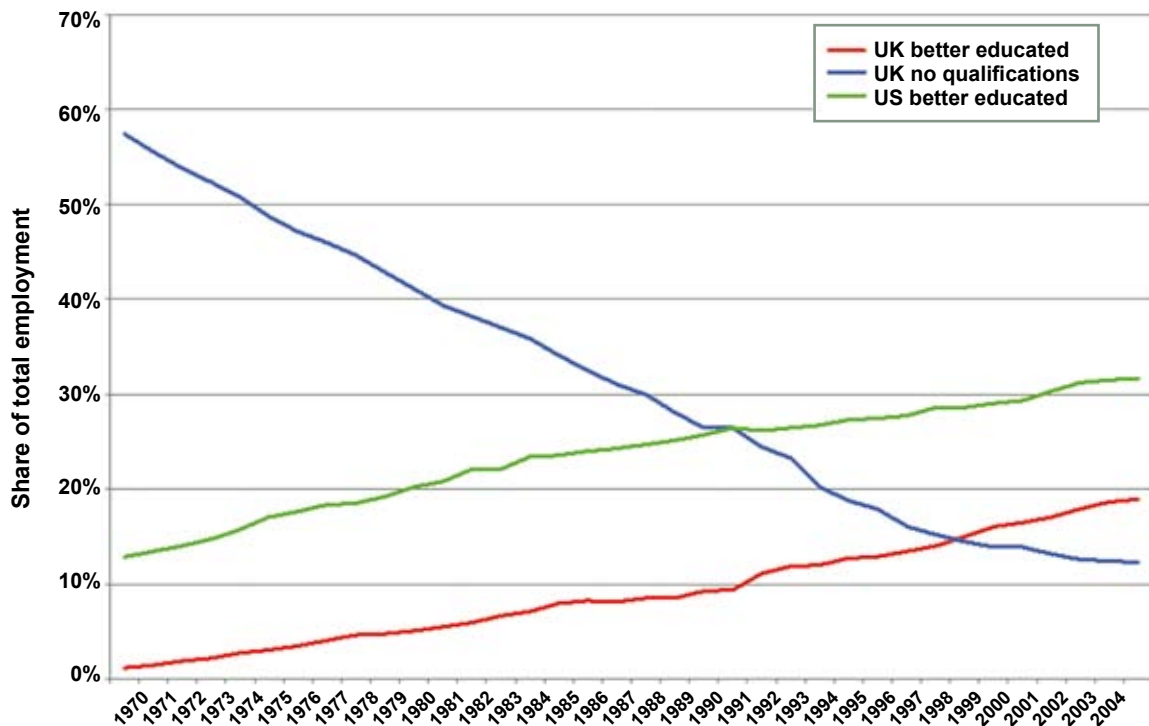
Source: EU KLEMS database

Note: Knowledge based services based on OECD definitions includes communications, financial services, business services, education and health. All other services includes retail, hospitality, transport, public administration and other community, social and personal services. Manufacturing includes both knowledge based and other sectors.

Secondly, a huge shift in investment priorities away from traditional physical investment in machines, office equipment, buildings and vehicles to knowledge based intangible assets such as software, human and organisational capital, R&D, brand equity, design and copyright. In 1970, business investment in such assets was worth 40 per cent of investment in physical assets, by 2004 the ratio was over 120 per cent. Latest estimates suggest business invested £28 billion in human capital (defined as employer provided training) and another £24 billion in organisational capital (defined as management time spent on structural organisational change).

Thirdly, we have seen the rise of the qualified workforce. In 1970 the majority of the workforce had no qualification and degree level qualification was reserved for less than one in ten. Today, the vast majority of workers have qualifications and between a fifth and a third have higher level qualifications (depending on the measure used). Figure 1.2 below shows changes in the UK workforce, although a similar picture is true for all the advanced industrialised economies.

Figure 1.2: Rise of the educated and qualified workforce 1970-2005



Source: EU KLEMS database

Note: UK, share of total workforce with degree or equivalent (better educated) and share with just basic schooling.

With all these changes we might have expected to see a significant improvement in both the quality of work and the wellbeing of the workforce. Employers have never invested more in a better educated workforce or in ways of organising work and work itself has become more knowledge intensive – at least in terms of the sort of activities the majority of the workforce now engages.¹

One might expect that an increase in well paid jobs in knowledge-intensive high value added services should result in an increase in job quality. Measuring job quality is much more problematic than measuring job quantity. We lack consistent measures that might allow us to look back at, say the 1970s, and even if we did it would be hard to judge the results because people tend to judge their quality of work by comparison with the norms of the day. So while some modern day workers might be appalled by the constraints and conditions of work in the 1970s, workers at the time might have formed a quite different judgement.

This said, the limited research in this area suggests no strong association between the growth of knowledge-based jobs and industries in the UK economy and improvements in workers' perceptions of job quality (Fauth and McVerry, 2008). In the UK, job quality deteriorated somewhat in the 1980s and improved in the 1990s. A recent study of job quality indicators between 1998 and 2004 suggested no further declines, but the main improvement was in

indicators linked to the overall state of the labour market rather than the underlying quality of employment (Brown, Charlwood and Spencer, 2006). Compared to its European counterparts, Coats and Lekhi (2008) argues that the UK still has some way to go in improving job quality. The returns to the huge investment of time and effort in trying to up to the rhetoric around investing in people as 'our most important asset' appear to have been poor.

1.2 The health and wellbeing of the workforce and its importance to the success of the UK economy has been rising up the political agenda in the last decade and is being increasingly recognised by employers. Ill health in the UK is a significant barrier to productivity not least through its costs to employers and society, estimated at around £100 billion a year, the equivalent of the GDP of Portugal (Black, 2008). For employers, sickness absence alone is already estimated to cost UK employers nearly £14 billion (CBI, 2007). The most frequently reported causes of this absence are musculoskeletal disorders and mental health conditions. So, what can employers do to combat these costs?

¹ All jobs require some knowledge. However, as we show in a later section, our measure of knowledge intensity focuses on the degree to which a job involves 'tacit' knowledge such as analytical or cognitive functions that cannot be written down. So we are looking at a particular sort of knowledge which allows us to distinguish between more and less knowledge intensive activities

Individual health behaviours and choices clearly contribute to the estimated costs and employers can play a role in facilitating change. However, work itself can contribute to ill health. Evidence from a variety of different disciplines clearly shows that the causes of ill health can be attributed to four general categories: lifestyle, social, genetic and work-related. Work related causes include a broader set of issues than the traditional health and safety perspective of physical injury and diseases caused by the working environment. The definition of wellbeing adopted by the World Health Organisation outlines wellbeing as ‘a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.’ Work can cause both physical injury and mental distress, it can also exacerbate the impact of conditions with different origins.

It is difficult to definitively attribute the exact contribution of work to ill health, and inaccuracies and limitations in recording mean the available data are likely to be conservative estimates. Significantly, what is not measured is the positive role that work can play in prevention or in supporting rehabilitation and recovery back into work.

The workplace can play a more positive role in our wellbeing beyond simply avoiding causing harm; work is good for us. A seminal review in 2006 (Waddell and Burton, 2006) of the role of work in our wellbeing concluded that not only is work better for our health than being unemployed, but ‘good work’ can play a positive role in our general health and wellbeing and recovery from ill health.

1.3 Role of the workplace in wellbeing

What can government and employers do to influence the health of their employees? How can what happens in the workplace influence health?

There are two broad approaches that employers can take to influence employee health. The first uses the workplace to educate employees on health lifestyles and offer easy access to programmes to support their healthy choices (such as gym membership, scans, quick access to occupational health or healthy canteen food). In this scenario employers facilitate and enable individuals to make healthy lifestyle choices, and the ultimate decision and action remains with the employee.

There are, however, a range of factors that contribute to health and wellbeing which are within employers’ direct sphere of influence to control and change. These revolve around the quality of work, and focusing on these factors constitutes the second approach employers can take.

The quality of work has long been shown to impact both personal and work outcomes. For example, Hackman and Oldham (1975) hypothesise that positive personal and work outcomes occur in the presence of five core job dimensions: variety, task identity, task significance, autonomy and feedback, collectively termed the 'motivating potential' of the job. These job dimensions directly affect workers' psychological states. Where they exist, employees report they feel that their jobs are meaningful, that they are directly responsible for relevant outcomes and that they have been recognised for such outcomes. On the other hand, where these conditions are not present, Karasek and his colleagues (1998) reveal that workers with intense physical and psychological job demands coupled with low skill usage and decision-making authority tend to experience the greatest health risks.

A large number of research studies have consistently documented links between poor job quality and health problems, suggesting that bad work can actually make employees unwell. Aspects of the job including heavy work demands, lack of control and autonomy, decision-making authority and social capital are significantly associated with health problems particularly in terms of sickness absence, elevated stress and psychological distress (Sanderson and Andrews 2006; Gimeno et al. 2004; Vahtera et al. 2000; Marchand, Demers, and Durand 2005; Broom et al. 2006; Bond and Galinsky 2006; Kudielka et al. 2005; Parkes 2003). Work from Marmot and colleagues (Marmot et al. 1991) based on a study of UK civil servants reports that associations between workers' social and economic status and health were partially accounted for by various characteristics of their work, suggesting that job quality and working conditions may be able to explain existing inequalities in workers' socioeconomic status and health.

The evidence clearly illustrates that the quality of the work employees have influences their wellbeing. What is as yet unclear is whether, as the nature of work changes with a shift towards more 'knowledge work', the quality of work is improving. Does the knowledge economy mean more 'good work'? Is 'knowledge work' good for us?

1.4 The changing nature of work

A prominent feature of the shift to the knowledge economy has been the mass application of computers across a wide variety of jobs. This has been driven both by the increase in technology intensive industries and the diffusion of general purpose technologies across more traditional industries such as retailing.

In principle, technological advance ought to be associated with improved job quality and more good jobs. Technology and associated innovations can make workers more efficient, allow real wages to increase faster than they otherwise would, and at the macro-economic level help create the conditions for full employment. It can also make jobs more interesting, creative and

fulfilling by eliminating mundane secondary tasks and opening up new ways of working, for example, through flexible working arrangements. Workers are also able to share their knowledge more widely. Knowledge tends to evolve rapidly thanks to both the tacit knowledge that workers bring into the workplace and the speed and range of ways that information and knowledge can now be exchanged. This requires workers to remain vigilant and keep abreast with the latest information, intelligence and trends.

Yet, while technology has enabled many workers to take more control over their work and has facilitated the decentralisation of decision-making, the same technology can also decrease autonomy by allowing managers the ability to monitor workers performance more readily. Some jobs created through the application of new technologies – such as some call centres – have been criticised for offering poor quality jobs. Work can also become more boring and stressful and less social as automation speeds up production and reduces workers to monitoring monotonous processes and breaks up teams.

To what extent have work roles shifted in the knowledge economy? Conclusions from our first report of the knowledge worker survey and our earlier research support the hypothesis that ‘the nature of work roles has been changing across the economy with perhaps the exception of the assistants and clerks. The workforce as a whole is becoming more skilled, partially as a result of technological advances, in terms of formal qualifications and acquired experience within jobs. The evidence from our survey suggests that it is increased demand for rather than excess supply of graduates that underlies the polarised employment growth across occupations’ (Brinkley et al., 2009).

1.5 **Changes in health and wellbeing** Concurrently with the rise of the knowledge economy, there has been a marked shift in the type of work-related reported health problems. Although physical symptoms such as musculoskeletal problems remain the most prevalent of work related health problems, their incidence has declined (HSE, 2009). In contrast, the prevalence of stress-related illness has been increasing.

The Work Foundation’s analysis of Eurostat data revealed that stress is concentrated among workers in the top-three standard occupational classifications, that is, those traditionally defined as knowledge workers (Fauth and McVerry, 2008). These occupational groups are also less likely to report musculoskeletal disorders; reinforcing the interpretation that the growth of the knowledge economy and the associated jobs are changing the type of work-related health conditions workers are experiencing.

In the UK, the 2009 CIPD Absence Management survey suggested that 56 per cent of HR managers of non-manual workers believed stress to be the primary cause of long-term absence, whilst the corresponding figure for manual workers was 49 per cent. HR managers also thought that heavy workloads (55 per cent) were the primary reason for increasing stress levels. This stood in contrast with the perceptions about long hours (13 per cent), job insecurity (13 per cent) and lack of autonomy (9 per cent) being primary forces for generating stress. In reality, these aspects of job quality have been consistently linked to health outcomes. These results suggest that despite the widely published evidence, HR managers are not aware that long hours, job insecurity and autonomy are linked to health outcomes.

At first glance, these findings suggest that the cause and nature of work-related diseases may have been changing with the rise of the knowledge economy. Not only has the amount of physical labour required decreased but health and safety legislation has had a preventative effect with respect to many physical work related injuries. While the physical nature of work has changed many argue that increased work intensity, increased discretion and intellectual demands imposed on workers in the knowledge economy are key contributing factors to the cause and nature of work-related ill health. Indeed, the prevalence of work-related stress has increased alongside the numbers of knowledge workers.

It is important to also note that there is a close connection between physical and mental wellbeing. Records by employers typically register only one reason for absence, yet in reality multiple factors contribute to absence and act as barriers to return to work. Most conditions have high rates of co-morbidity, for example back pain and depression. It is often the more easily diagnosed or explained condition that is reported and recorded. While only one symptom is recorded as the cause of absence the story is more complex. The nationally reported figures of illness incidence and prevalence rates are therefore likely to underestimate the numbers suffering from different conditions. The complexity also means return to work is impacted by a range of factors for which employers need to adapt yet are not always aware of.

The problems do not look set to get better any time soon. Individual health behaviours together with the changing nature of work look set to escalate the rates of ill health in the working age population. A report published in 2009 analysed the future health of the workforce to 2030 and found that the workforce of the future will be older and more obese, as well as living with more long term conditions (such as chronic heart disease, mental illness, musculoskeletal disorders, diabetes and asthma), leading less healthy lives and having more caring responsibilities for others (Vaughan-Jones and Barnham, 2009). Demographics and worsening pension provision imply that working lives will become longer, with more people needing to work beyond the state

retirement age. Thus the burden of disease will rise if these current trends continue, resulting in significant costs to the NHS and employers.

1.6 **What is knowledge work and is it good for us?** The nature of many jobs has undoubtedly changed as discussed above, not least due to the arrival of computers and the Internet. But does the growth of the knowledge economy really mean more knowledge work? And does more knowledge work mean more good work and a healthier workforce? Answering these questions depends largely on your definition of knowledge work. Previous studies, including our own, use established definitions of knowledge workers and knowledge work that are somewhat problematic, but until now were the only way of classifying knowledge workers. The standard ways used to delineate knowledge workers as a category have been either through the top-three occupational groups (professionals, associate professionals and managers and senior officials) or those employees with at least a tertiary education qualification.

Although these definitions are likely to capture large proportions of the knowledge workers, they seem to ignore the fact that technological progress has been changing the nature of jobs in the knowledge economy. In practice, this implies that workers falling under the top-three occupational classifications are also likely to perform knowledge-intensive tasks. On the other hand, given the higher skills that jobs such as administrators now require thanks to information and communications technology, it is likely that not all graduates necessarily perform knowledge-intensive jobs.

To define knowledge workers and knowledge work taking into account these changes, it is necessary to re-draw the boundaries based on what workers actually do at work. Moreover, the above definitions of knowledge work seem to impose a binary distinction across the workforce, assuming that workers either are knowledge workers or they are not. The changes in the nature of jobs suggest that more fine-grained distinctions are plausible. To tease these distinctions out, it is necessary to have a closer look at what people actually do in their jobs in the knowledge economy. This more granulated definition is also necessary in order to investigate the effects of knowledge work on job quality and health and wellbeing.

The next section recaps our earlier report which set out a new definition of knowledge work based on our survey of 2,000 workers in the UK (see Brinkley et al, 2009 for a full report of our definition of knowledge work). The section also sets out other measures used in the survey, the analysis of which is presented in the remainder of this report to address the relationship between knowledge work, good work and the wellbeing of workers.

2. Knowledge work and good work: Definitions and application

Who are the knowledge workers, and how would we know when work is actually ‘good work’? How do we measure the health and wellbeing of the workforce? It is important to clarify the definitions of the terms we use if we are interested in being able to assess whether the knowledge economy promotes good work and if so, to what extent this affects the health and wellbeing of the workforce in the knowledge economy.

In this section, we review our definitions of knowledge work, good work and health and wellbeing. Then we explain how we use and measure these concepts for the purposes of our analysis.

2.1
Re-defining
knowledge
work

In our earlier report based on our survey of knowledge workers, we sought to create an improved definition of knowledge workers and knowledge work. Knowledge work and knowledge workers are terms often used but with various connotations. When an attempt is made to define knowledge work, it is usually through broad measures such as by occupational classification or by education level, most usually the possession of at least a higher education degree. Even though there are good reasons that justify the use of the above definitions as proxies for knowledge workers and knowledge work, we believe that at best this gives a partial and simplistic view of knowledge work in the UK.

The use of knowledge and information have become so central to the production of organisational value that the skill requirements for a broad range of jobs in the knowledge economy have increased. Therefore, it would not be surprising if the use of occupational classifications as a proxy for the knowledge content of work is unsatisfactory. Similarly, the definition of knowledge workers as workers with at least a higher education degree is likely to overlook the fact that people with vocational training qualifications are also likely to be involved in knowledge intensive forms of work. We sought to re-define knowledge work based on what UK workers actually do at work.

To construct a data-driven definition of knowledge work, we thus opted for conducting our own survey of workers. The overarching aims of our survey were to reach a better understanding of what makes knowledge work unique and to identify the prevalence of ‘specialist’ knowledge tasks across the workforce. Based on a sample of 2,011 UK workers employed in at least one job for 20 hours or more per week, we assessed how frequently workers engaged in 186 different tasks or activities that fell into ten categories.² We subsequently classified workers into

² The ten task categories were determined by factor analysis. For a more detailed description of the survey and our analysis see Brinkley et al (2009) Knowledge Work and Knowledge Workers. London: The Work Foundation

clusters based on the pattern of their activity at work. Our analyses revealed seven distinct worker clusters:

- Leaders and innovators;
- Experts and analysts;
- Information managers;
- Maintenance and logistics operators;
- Care and welfare workers;
- Servers and sellers;
- Assistants and clerks.

We further sought to rank these clusters according to the cognitive complexity of the tasks that workers have to regularly perform at work. To gauge this complexity we used three criteria. First, the frequent and specialist use of information technology as part of their job. Secondly, the type and variability of methods of sharing and capturing knowledge and ideas when performing new tasks. And thirdly, the perception of the surveyed workers themselves about the complexity of the tasks they have to perform.

Our findings suggested that we can portray the composition of the Knowledge Economy workforce and the work that workers actually do in a 30-30-40 shape:

Figure 2.1: The 30-30-40 knowledge economy workforce



Source: The Work Foundation

- About a third of workers were in jobs requiring high knowledge content. This core group of knowledge workers could be split into the leaders and innovators who most frequently engaged in tasks requiring tacit in addition to codified knowledge, and the experts and analysts who performed high-level analytical tasks, but did not regularly engage in some of the other specialist knowledge tasks.
- A further 30 per cent of workers were engaged in jobs with moderate knowledge content – primarily codified knowledge – relating to the cluster specific tasks that define these jobs as well as the people management and communication tasks that were shared by most workers. This group comprised the information managers, care and welfare workers and servers and sellers.
- Finally, 40 per cent of workers were engaged in jobs with few knowledge tasks. The maintenance and logistics operators and assistants and clerks clusters reported mostly use of codified (rather than tacit) knowledge for their jobs.

2.2 2.2.1 Good work

Definitions of good work, health and wellbeing

The Work Foundation's concept of 'good work' focuses on the features of jobs that make it a favourable experience for workers, have been linked to positive health and wellbeing outcomes and also boost productivity, thereby benefiting employers at the same time. According to Coats and Lekhi (2008, 6), these features include:

- Employment security;
- Work that is not characterised by monotony and repetition;
- Autonomy, control and task discretion;
- A balance between the efforts workers make and the rewards that they receive;
- Whether the workers have the skills they need to cope with periods of intense pressure;
- Observance of the basic principles of procedural justice;
- Strong workplace relationships (social capital).

To measure the quality of work, based on the above definition, we drew on our previous analysis of job quality in knowledge workers using data from the European Working Conditions Survey (EWCS) (Fauth and McVerry, 2008). We also added additional items not contained within the EWCS to ensure all aspects of the above definition were included. Table 2.1 below sets out the questions we asked our survey participants by the characteristics of good work we included. Where multiple items were asked to understand one concept our later analysis combines the items together in one scale.

Table 2.1: Measurement of good work job quality characteristics

Good work – job quality characteristic	Proxy
Employment security	<ul style="list-style-type: none"> • Workers' satisfaction with their job security
Work that is not monotonous or repetitive/(absence of) repetitive tasks	<ul style="list-style-type: none"> • Workers' perception of job involving repetitive tasks
Autonomy, control and task discretion	<ul style="list-style-type: none"> • Workers' perception of autonomy to make own decisions • Freedom to decide how to do work and to choose their pace of work
Balance between efforts made and rewards received	<ul style="list-style-type: none"> • Workers' satisfaction with pay
Appropriately skilled to cope with periods of intense pressure/job-skills match	<ul style="list-style-type: none"> • Workers perception of whether their job duties correspond to their skill level and experience • Whether they need further training to cope • Whether they would be able to take on more demanding duties
Strong workplace relationships/social capital	<ul style="list-style-type: none"> • Workers' perception of whether they are treated fairly at work, whether co-workers take a personal interest in them • Whether their supervisor always considers their best interests when making decisions that concern them
Job complexity	<ul style="list-style-type: none"> • Workers' perception of whether their job involves independently solving unexpected problems, complex tasks and learning new things
(Absence of) Job intensity	<ul style="list-style-type: none"> • Workers' perception of whether they are overworked • Whether they are overwhelmed by their workloads • Whether colleagues make conflicting demands on them

In addition to examining the individual scales above and their composite items we also created an overall index of good work indicators to enable us to examine the patterns of good work across all of the clusters. To do this we simplified the data. All of the variables above were recoded so that they were on a 'yes' or 'no' scale.³

³ For example, among the items that were rated on a 5-point agreement scale, workers who responded 'agree' or 'strongly agree' were given a score of 1 ('yes'), while other workers were given a score of 0 ('no'). This type of coding enabled us to count the number of indicators each worker reported

2.2.2 Job satisfaction

We assessed workers' satisfaction with their jobs along five domains: (1) pay, (2) security, (3) the work itself, (4) the sense of achievement you get and (5) hours. Respondents were asked to rate their level of satisfaction on a 1-5 scale from very satisfied to very dissatisfied.

Workers were also asked to indicate how they perceive their current job, selecting from three options:

1. You like your job and see yourself doing it for the foreseeable future.
2. You do not like your job, but see yourself doing it for the foreseeable future.
3. Your job is a way to pay the bills while you wait for something better to come along.

2.2.3 Life satisfaction

To assess the relationship between work and life in general we examined the degree to which workers felt the hours and demands of their jobs impacted on their fulfilment and enjoyment of personal responsibilities and activities. The overall scale was created using the mean of agreement (1=strongly disagree to 5=strongly agree) with the following three statements:

1. The demands of my work interfere with my home and personal life.
2. The amount of time my job takes up makes it difficult to fulfil personal responsibilities.
3. Due to work-related duties, I regularly have to make changes to my plans for personal activities.

We also administered the Satisfaction with Life Scale (Diener et al. 1985), a five item questionnaire that assesses respondents' views of their current life, how closely it aligns to how they envisioned their life to be and their contentment with their choices and actions. More specifically, we asked respondents to rate their agreement (1=strongly agree to 5=strongly disagree) with the following statements:

1. In most ways, my life is close to how I would like it to be.
2. I'm happy with my current lifestyle.
3. All things considered, I am satisfied with my life.
4. I've got the things out of life that I've wanted to get by this stage.
5. I would not change much about the things that I have done in my life, even if I could.

2.2.4 Health and wellbeing

In order to gauge the effects of knowledge and good work on the health and wellbeing of workers, we asked our survey respondents to report on their health, their job-satisfaction and any spill overs between their work and their personal life.

We included two items related to health in the survey. First, workers rated their general health on a 5-point scale (1=poor to 5=excellent). Second, they reported the number of days over the four weeks prior that they were unable to go to work or carry out their normal tasks because of a health-related issue.

The following section summarises the findings of our survey regarding these measures and illustrates their variation across clusters of workers in the knowledge economy.

3. Is knowledge work good work?

Following our definition of good work in the previous section we now explore each of the indicators of good work in more detail: job security, reward, experience and skills, complexity, autonomy and control, intensity and job social capital. Finally, we consider an overall index of job quality.

3.1 Job security

First we turn to perceptions of job security.⁴ It should be noted that the perceptions of job security reported here were collected in 2007, before the financial crisis and recession of 2009. One might expect satisfaction with job security to have since declined.

The results, illustrated in Figure 3.1 below, reveal that while more than half of the workforce were satisfied with their job security, those performing the fewest knowledge tasks, ie the maintenance and logistics operators and the assistants and clerks were the least satisfied with that aspect of their jobs.

The relationship however, is not a straightforward linear one, in that an increase in knowledge intensity of a job does not always relate to a higher level of satisfaction with job security. For example, although leaders and innovators seemed to be the most satisfied cluster in terms of their job security, experts and analysts ranked below both care and welfare workers and servers and sellers but above information managers.

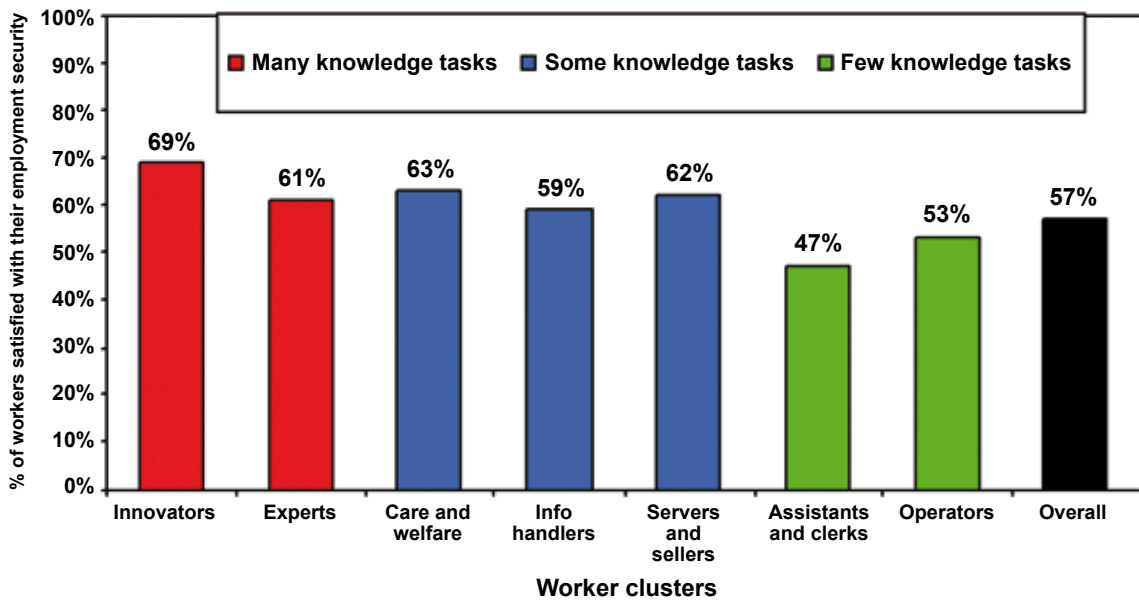
One possible explanation may lie with the stage of career or life that these groups of workers are at. Experts and analysts tended to be relatively young, especially compared to the leaders and innovators.⁵ It is possible that as such experts and analysts, being at the start of their career, expect to go through more short-term job placements and as such are satisfied with most levels of job security. However, age cannot be the complete explanation. Assistants and clerks consist of a similar proportion of workers aged 25-34 (25 per cent) as the experts and analysts cluster (28 per cent) yet were markedly less satisfied with their job security.

Consequently, it seems that either jobs with more knowledge tasks provide greater job security to the post holders than those with fewer knowledge tasks, or that those in jobs with more knowledge tasks are more comfortable with a limited level of security.

⁴ We asked our survey participants to tell us how satisfied they were with their job security. The possible answers to this question ranged from 'very satisfied'=1 to 'very dissatisfied'=5. We then recoded the answers to 'satisfied' with one's job security=1 if a worker was 'very satisfied' or simply 'satisfied' and 'dissatisfied'=0 if otherwise

⁵ See our previous report which provides more detailed description of each group: Brinkley, Fauth, Mahdon, Theodoropoulou (2009)

Figure 3.1: Perceived job security by worker cluster



Source: The Work Foundation

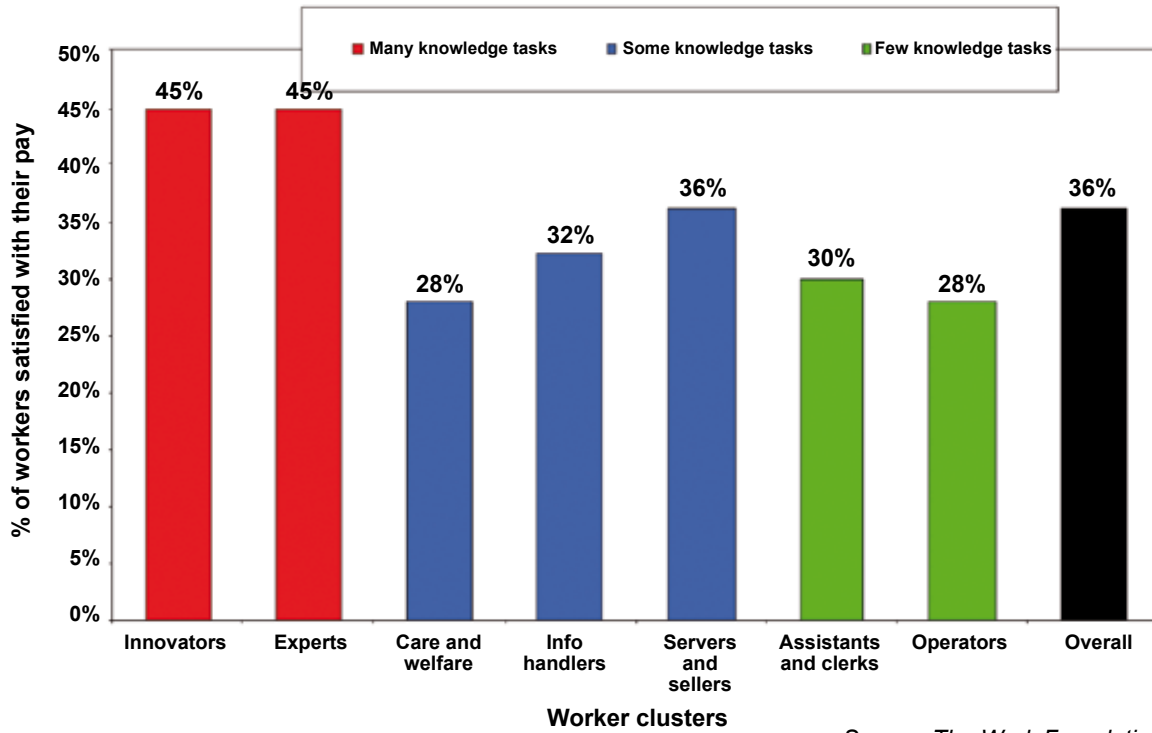
**3.2
Reward**

Turning to the issue of rewards, we examined respondent satisfaction with their pay. Figure 3.2 on the next page shows the results by cluster. Overall, only slightly more than one-third of our respondents were satisfied with their pay. In relative terms, our core knowledge worker clusters appeared to be most satisfied with their pay, although still fewer than half of workers were satisfied. Care and welfare workers were the least satisfied with their pay in spite of the relatively high number of knowledge tasks they perform. The differences in satisfaction with pay most likely reflect sector in income with many care and welfare jobs located in the public or third sector offering lower levels of pay.

**3.3
Experience
and skills**

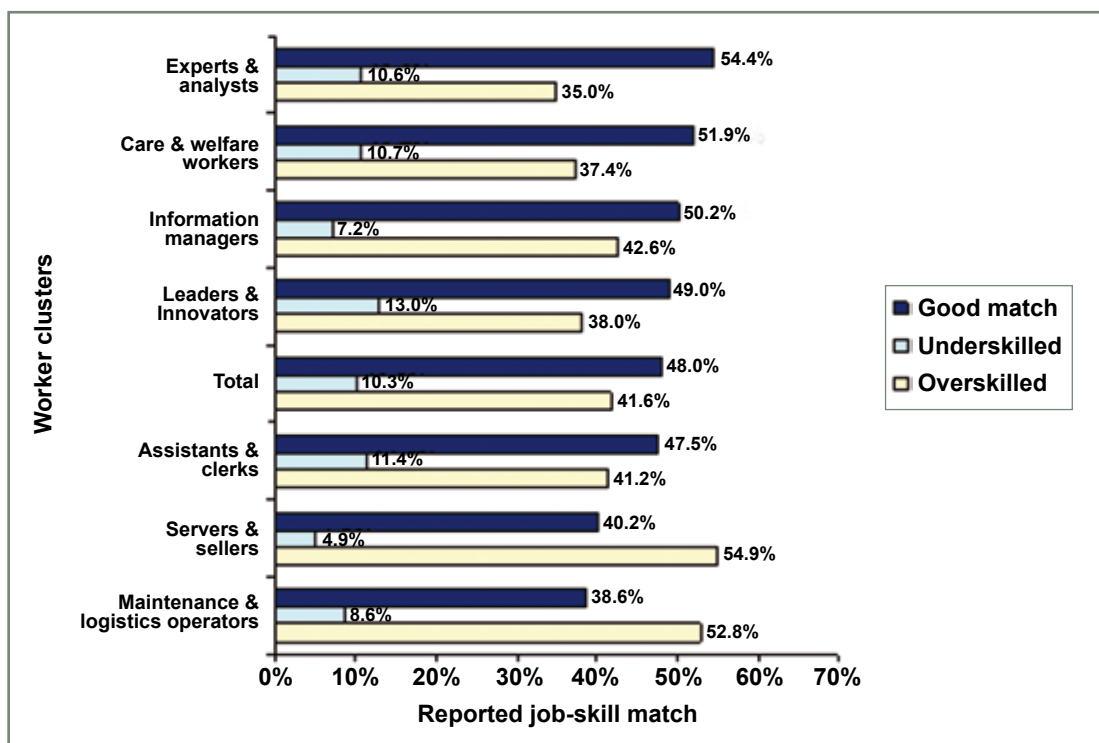
Turning to the extent to which jobs in the knowledge economy adequately use workers' skills set and experience, fewer than half of the respondents (48 per cent) indicated that their job duties matched well with their skills. Figure 3.3 on the next page shows the survey responses by worker cluster. The relationship between workers skills and job requirements and the degree of knowledge tasks undertaken is not straightforward. For example, experts and analysts were most likely to report a good match while leaders and innovators were very close to the average and below average for care and welfare workers and information managers.

Figure 3.2: Satisfaction with pay by worker cluster



Source: The Work Foundation

Figure 3.3: Job-skills/experience match by worker cluster



Source: The Work Foundation

Is knowledge work good work?

However, there is a pattern of sorts, worker clusters with the fewest knowledge tasks, such as maintenance and logistics operators and assistants and clerks, along with the servers and sellers, who perform some tacit knowledge tasks, reported the weakest (below average) match between worker skills and job requirements. It may be that jobs with few knowledge tasks do not require many job specific skills. On the other hand, the low ranking of the servers and sellers for job-skill match could probably be linked to the relatively high concentration of temporary, fixed-term employees in that cluster (Brinkley et al., 2009). Indeed, servers and sellers report the highest share of workers perceiving themselves as 'overskilled' for their job (55 per cent reported feeling overskilled).

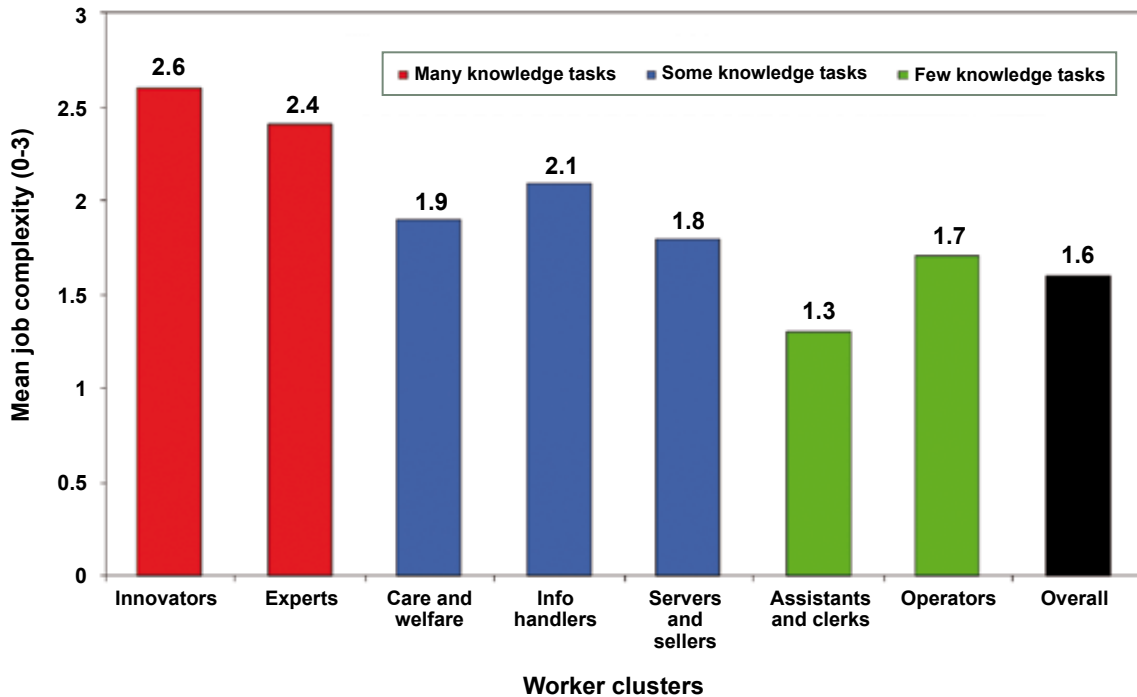
Generally, more than 40 per cent of workers in our sample felt that their skills were under utilised at work. This is interesting to note given that many employers claim that the supply of workers does not have adequate or the right mix of skills and previous experience for the existing vacancies (CBI, 2008) suggests a substantial mismatch between labour demand and labour supply in the knowledge economy.

Moreover, if the good match between jobs and skills is an indication that workers' talents are well used and developed, the results on the last two indicators suggest that the majority of workers in the knowledge economy receives neither adequate monetary rewards nor use the full potential of their talent in the knowledge economy. The finding that talent is being wasted is clearly a problematic situation for individuals but also reflects untapped resource that organisations could be using to their advantage.

3.4 We also examined workers' perceptions of the complexity of their jobs including whether their
Job tasks involve: (1) independently solving unexpected problems, (2) repetitive tasks, (3) complex
complexity tasks and (4) learning new things.

On average, fewer than half the workers reported high complexity. The responses to job complexity were used as part of the criteria for classifying which groups of workers comprise core knowledge workers. Thus, as would be expected, job complexity was higher among workers with many knowledge tasks than among those with fewer knowledge tasks (see Figure 3.4). However, there are still some important insights to be gleaned from examining the details of job complexity in more depth.

Figure 3.4: Job complexity by worker cluster



Source: The Work Foundation

Indeed, there was wide variability across the worker clusters on the characteristics of complexity (see Table 3.1). Across the full sample, more than three-quarters of the sample reported solving unexpected problems at work and/or repetitive tasks. Just fewer than 60 per cent of the sample reported complexity and/or learning new things in their jobs.

While all our worker clusters reported relatively high degrees of repetition in their work, core knowledge workers were among those whose jobs involved relatively few repetitive tasks, along with care and welfare workers. Reports of repetition were quite high for administrators as well as servers and sellers. Leaders and innovators and experts and analysts, perhaps unsurprisingly, were the most likely to report learning new things, complexity and solving unexpected problems in their work, while assistants and clerks were quite unlikely to experience these qualities in their jobs. Maintenance and logistic operations and servers and sellers tended to report low levels of complexity in their roles, but did solve problems on the job.

Table 3.1: Percentage agreement with job complexity by worker cluster

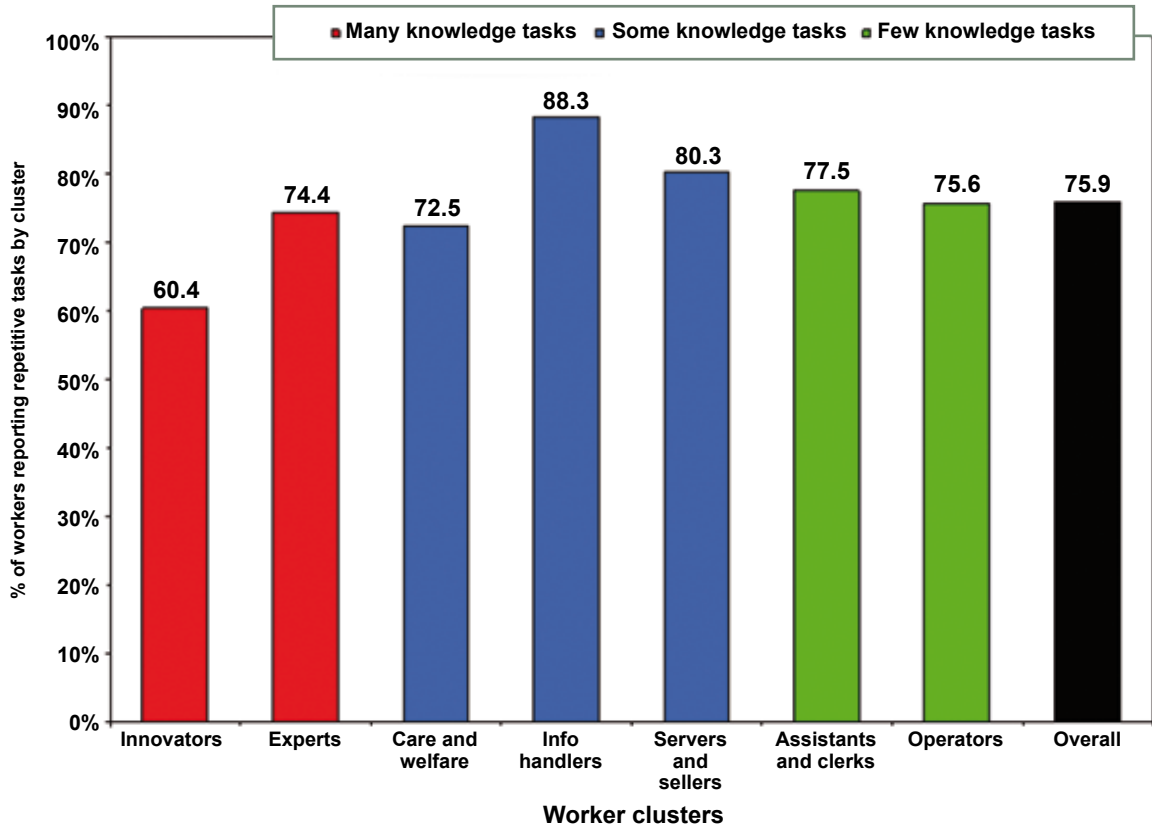
	Solving unexpected problems	Repetitive tasks	Complex tasks	Learning new things
Leaders and innovators	95%	60%	82%	79%
Experts and analysts	91%	74%	75%	73%
Information handlers	79%	88%	64%	62%
Maintenance and logistics operators	76%	76%	44%	49%
Care and welfare workers	75%	73%	50%	66%
Servers and sellers	75%	80%	43%	61%
Assistants and clerks	57%	78%	33%	39%
Total	76%	76%	55%	59%

In contrast to a perhaps intuitive expectation that repetitive tasks in a job reduces with an increase in knowledge tasks, particularly those requiring tacit knowledge, repetitiveness was more closely associated with the administrative content of jobs. For the three clusters of workers who reported above average degree of repetitive tasks, the jobs were characterised by a high frequency of administrative tasks. Therefore, administrative tasks appear to increase the repetitiveness of jobs regardless of the frequency with which knowledge tasks are part of the job. Information managers as a cluster for example, have more knowledge tasks as a core component of their job than assistants and clerks, yet they reported the highest levels of repetitiveness in their jobs (see Figure 3.5 on the next page).

These findings, similar to other research from The Work Foundation (Fauth and McVerry, 2008), suggest that many posts in the UK combine moderate to high levels of monotony with challenge and complexity. Across the sample, we found that 72 per cent of workers reported both repetition and one of the other three indicators of job complexity. Administrators were the most likely (87 per cent) to report this type of arrangement. Leaders and innovators were an exception to this trend, with noticeably lower reports of repetition in their posts (although still at 60 per cent).

3.5 **Autonomy and control** Autonomy and control, as mentioned earlier, are important aspects of ‘good work’. The two concepts are closely linked in that greater autonomy provides employees with greater control over the way they undertake their job. We asked our survey respondents to report their

Figure 3.5: Repetitiveness in tasks by worker cluster



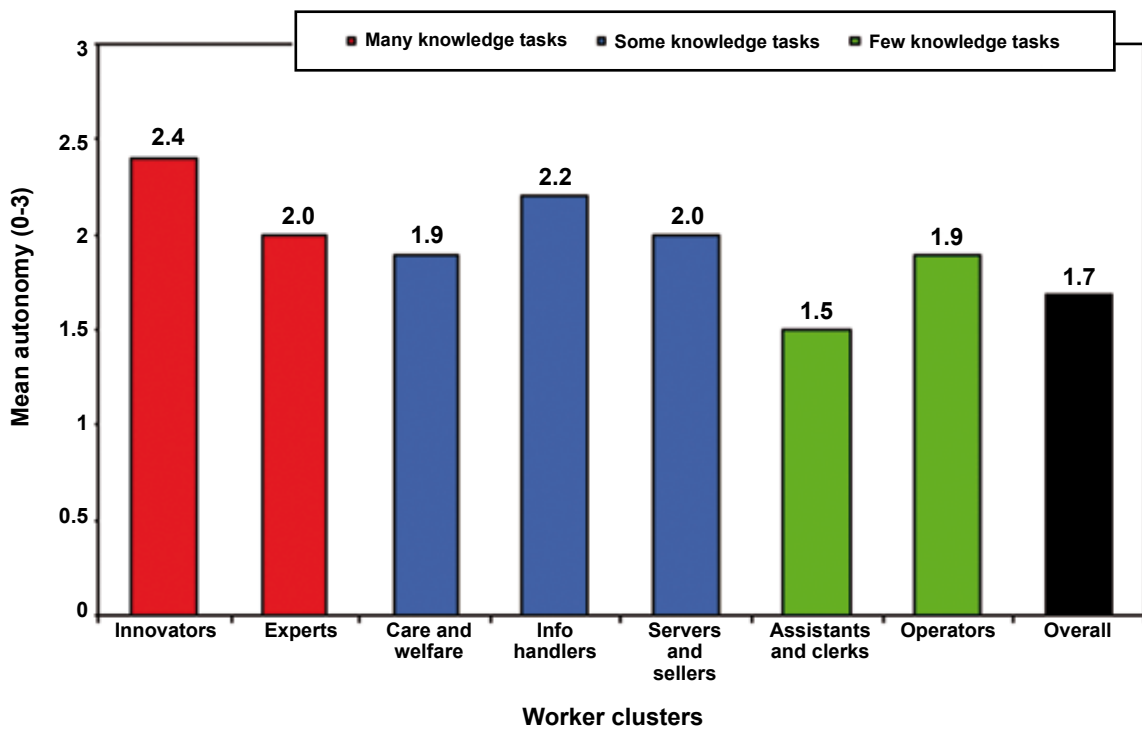
Source: The Work Foundation

perceptions on the extent to which they have autonomy in making their own decisions, for organising their work and choosing their pace of work. Figure 3.6 below presents a summary of how many of these three aspects of autonomy and control respondents reported were part of their job. The basic features of autonomy and job control were fairly ubiquitous across the labour force with the exception of the assistants and clerks. About two-thirds of our respondents were free to make their own decisions and organise their work. In contrast the extent to which workers were free to determine their pace of work was lower on average (56 per cent). These figures are higher than results from the Skills Survey 2006 where 43 per cent and 29 per cent of employees felt they had influence over how tasks were to be done and which ones respectively (Felstead et al 2007). It is likely that the different wording of the questions, ours focusing on work overall and the Skills Survey on tasks, can account for much of the discrepancy in the results.

Is knowledge work good work?

In our sample the levels of autonomy and control reported did not increase consistently with the degree of knowledge work performed. For example, maintenance and logistics operators reported more autonomy than care and welfare workers and information managers were more autonomous than experts and analysts. As might be expected, leaders and innovators had the greatest ability to determine their pace of work. However, autonomy surrounding the pace of work was the least common aspect of autonomy afforded to workers overall, suggesting that various external factors still control the timing and speed of work in the knowledge economy. Indeed this conclusion is supported by results in the Skills Survey examining external control over work performance over time. The authors conclude that 'taken together with the trends in tasks discretion, the evidence suggests that the loss of a sense of individual job control by employees from 1992 to 2001 was likely to be related to a growth in a wide variety of external constraints that have affected job performance. When these constraints were loosened, the decline in individual task discretion levelled off' (Felstead et al, 2007).

Figure 3.6: Autonomy by worker cluster



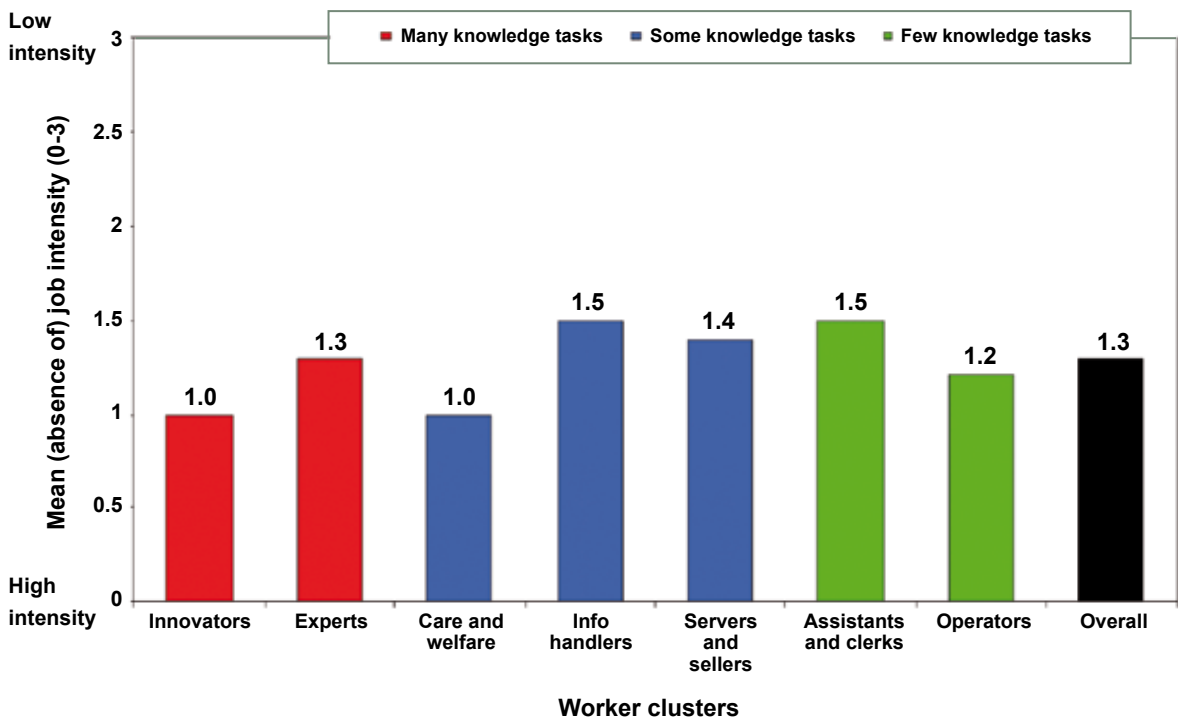
Source: The Work Foundation

3.6
Job intensity

Moving on to job intensity, we see that on average across all three measures of job intensity⁶, only about one-quarter of workers reported consistent intensity in their jobs. Assistants and clerks reported the least amount of intensity in their roles. Thus, while workers in the knowledge economy face a fair amount of challenge and complexity in their jobs, largely work does not appear to be unmanageable and overwhelming on a regular basis to most workers. This may be related to the fact that a large share of our survey respondents reported that their skills and experience exceeded the demands of their work.

Within job intensity, feeling overworked was the most common complaint for most workers, with the exception of leaders and innovators who most frequently reported conflicting demands at work. Care and welfare workers were most likely to report frequent job intensity across all indicators relative to the other clusters. Alongside the care and welfare workers, maintenance and logistics operators were most likely to report being overworked.

Figure 3.7: Job intensity by worker cluster



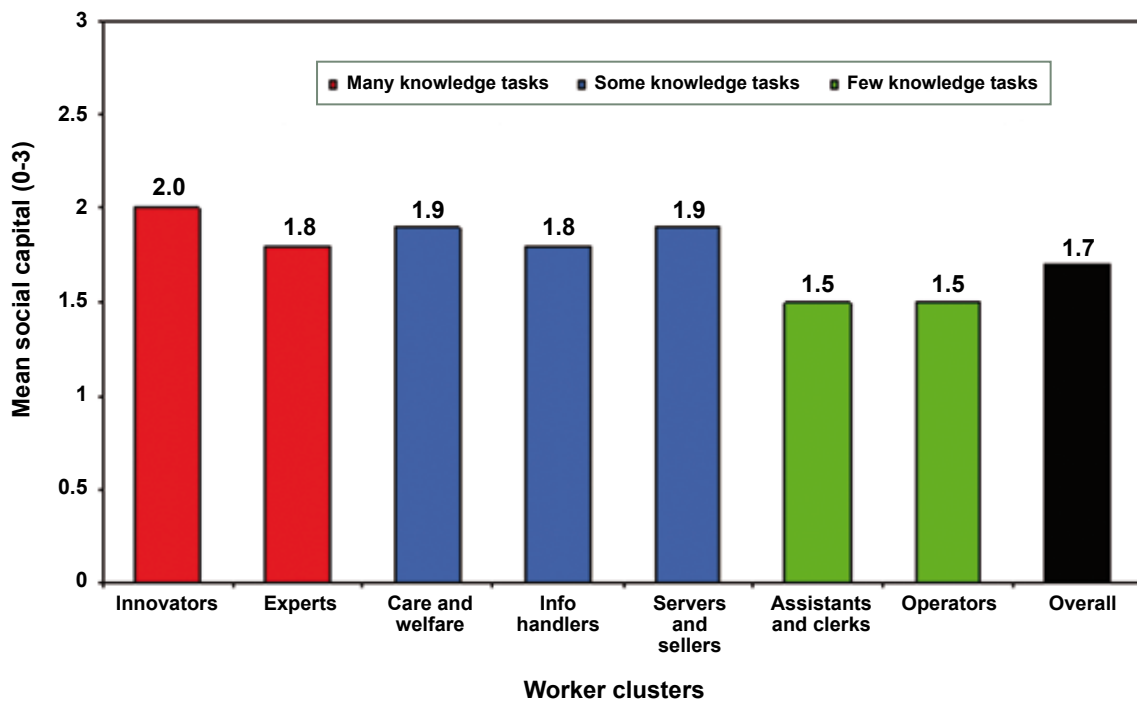
Source: The Work Foundation

⁶ We measured job intensity by asking our respondents their perceptions on three dimensions, namely, the frequency with which they feel: i) overworked, ii) overwhelmed by their workloads and iii) colleagues made conflicting demands on them

3.7
Social capital

Finally, we examined the degree of social capital perceived to exist in the workplace (measured here by perceptions of social support and fairness). Figure 3.8 presents the findings. Social capital was present across work clusters with relatively small variation, though the levels were not exceptionally high. With the exception of experts and analysts, social capital increased with the number of knowledge tasks that workers perform. In particular, those in roles requiring more knowledge tasks were more likely to agree that their supervisor considered their best interests when making decisions that concern them.

Figure 3.8: Social capital by worker cluster

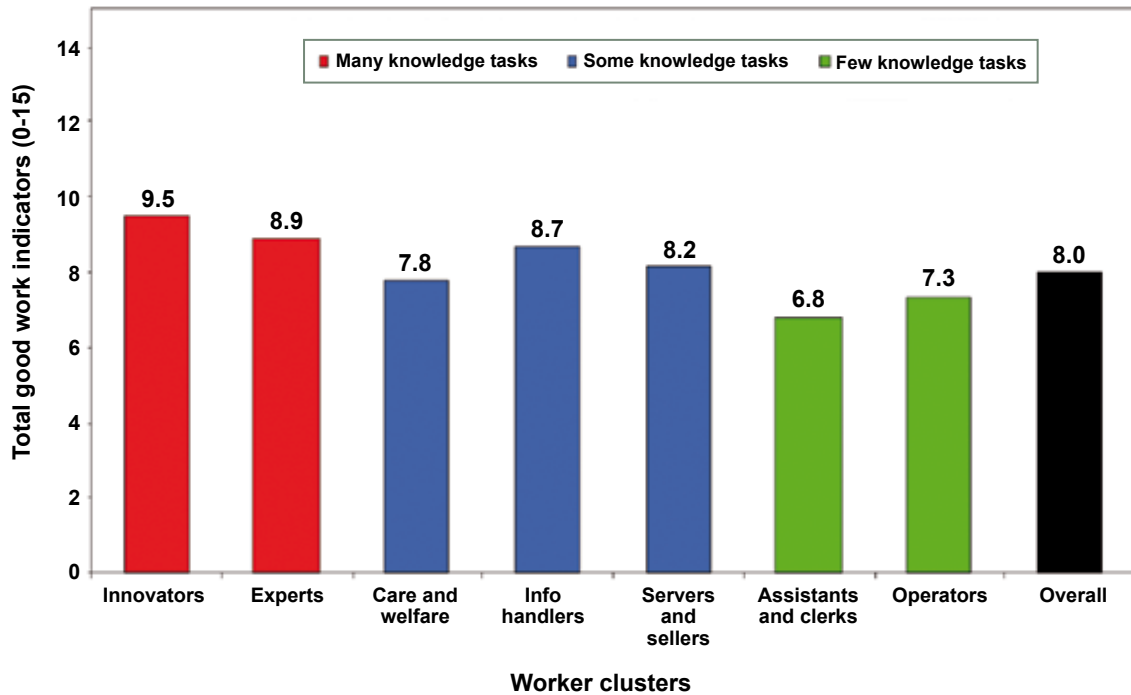


Source: The Work Foundation

3.8
Overall job quality

To examine perceptions of job quality overall, we calculated the total presence of 'good work indicators', as defined in the previous section, reported to exist by each person in our sample. Taken together we recoded 15 indicators of good work, giving each person a score of 0-15 of the total number of these characteristics they perceived their job offered. This overall measure provides us with an index of good work in the knowledge economy. Figure 3.9 presents the average scores for each of the worker clusters.

Figure 3.9: Total number of good work indicators by worker cluster



Source: The Work Foundation

Overall, the average index score was just over 8, indicating that workers had slightly more than half of the indicators present in their jobs. Leaders and innovators reported the highest level of job quality with 9.5 of 15 good work indicators in their current jobs. Experts and analysts, information managers and servers and sellers reported that their jobs possessed between 8-9 indicators. Assistants and clerks reported the lowest job quality, with less than 7 of the 15 indicators present in their work.

To provide an overview of the quality of work in the knowledge economy we recap the insights on job quality across the worker clusters:

- Across most of the good work indicators, leaders and innovators reported the highest levels of overall job quality; they also reported nearly the highest levels of job intensity.
- Experts and analysts exhibited relatively high job quality overall, but reported less autonomy and social capital than other groups.
- Information managers reported high levels of repetition, but had a high degree of good work characteristics for the other indicators including low intensity.

- Maintenance and logistics operators, and servers and sellers exhibited moderate job quality with some notable exceptions. Neither cluster reported high levels of complexity. Maintenance and logistics operators reported relatively low social capital at work.
- Care and welfare workers' jobs appeared to be defined by relatively low intensity with high levels of repetition, and social capital, but low levels of autonomy.
- Social capital was moderately high for servers and sellers, and care and welfare workers, suggesting a link between 'people-facing' jobs and positive relationships at work.
- Assistants and clerks, 28 per cent of the overall sample of workers, reported the lowest levels of good work overall, particularly in terms of job complexity and autonomy. About half of the workers in this cluster reported an adequate match between their skills and experience and the demands of their jobs, suggesting that many of these workers may not perceive themselves as experienced workers.

3.9 Room for improvement

Thus, by and large, the core group of knowledge workers experienced superior job quality relative to other workers. With the exception of leaders and innovators and assistants and clerks, the differences across the clusters were not overwhelming. These two groups reported particularly high or low scores correspondingly on measures of flexibility, complexity, autonomy and social capital compared to the other groups. However, barring these exceptions, while the knowledge economy does not appear to be driving a wedge in the labour force, neither has it improved the situation for all workers.

In addition to building a profile of workers in the UK knowledge economy, we also sought to understand their experiences at work. This section described in detail our findings on workers' perceptions of job quality. Among all workers, three areas need improvement: job repetition, social support at work and job-skill match. Furthermore, the relatively poor performance of the UK in terms of matching job roles with workers' skills and experience was notable for all cluster groups. This has implications for UK performance and suggests that firms are not adept at using workers' knowledge in the most effective manner.

Next we turn to personal outcomes that job quality contributes to: job satisfaction, life satisfaction and employee health and wellbeing.

4: Job quality and personal outcomes in the knowledge economy

4.1 Job satisfaction Having explored job quality we now turn to understanding the extent to which workers are satisfied with the jobs they have. We assessed workers' satisfaction with their jobs along three domains: (1) the work itself, (2) the sense of achievement you get and (3) hours. Table 4.1 below presents the percentage of workers within each cluster reporting satisfaction with the various domains of work.

Table 4.1: Job satisfaction by worker cluster

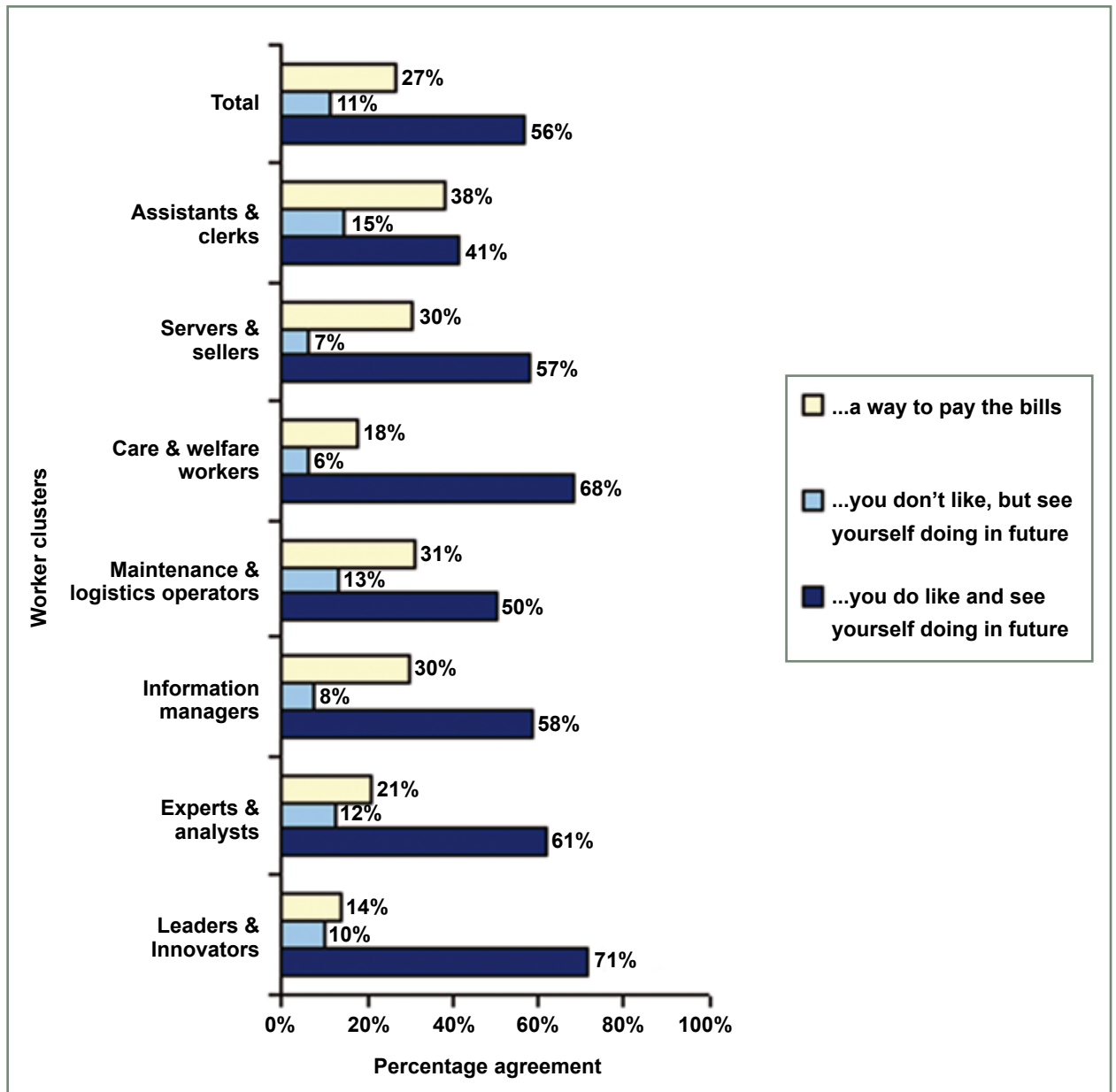
	Work itself	Sense of achievement	Hours
Leaders & innovators	72%	67%	62%
Experts & analysts	55%	65%	60%
Information managers	60%	55%	60%
Maintenance & logistics operators	54%	45%	40%
Care & welfare workers	65%	70%	57%
Servers & sellers	63%	55%	51%
Assistants & clerks	43%	38%	52%
Total	55%	51%	55%

With the exception of assistants and clerks, workers were generally satisfied with the work they do and the sense of achievement they get from their work. Notably, maintenance and logistics operators were relatively dissatisfied with their hours at work, which is not entirely surprising given their reported long and unsocial hours.⁷

Related to job satisfaction, workers were also asked to think about how they felt about their job when looking to the future. Across all clusters, with the exception of assistants and clerks, at least half of the respondents reported liking their jobs and believed they would remain in them for the foreseeable future (see Figure 4.1).

⁷ For more of our survey results on hours worked and flexibility see our first knowledge worker survey report Brinkley et al (2009)

Figure 4.1: Perceptions of current job by worker cluster



Source: The Work Foundation

Nearly three-quarters of leaders and innovators were content in their jobs; and more than 60 per cent of care and welfare workers and experts and analysts also reported enjoying their jobs. Workers who were not content with their jobs were more likely to perceive their posts as

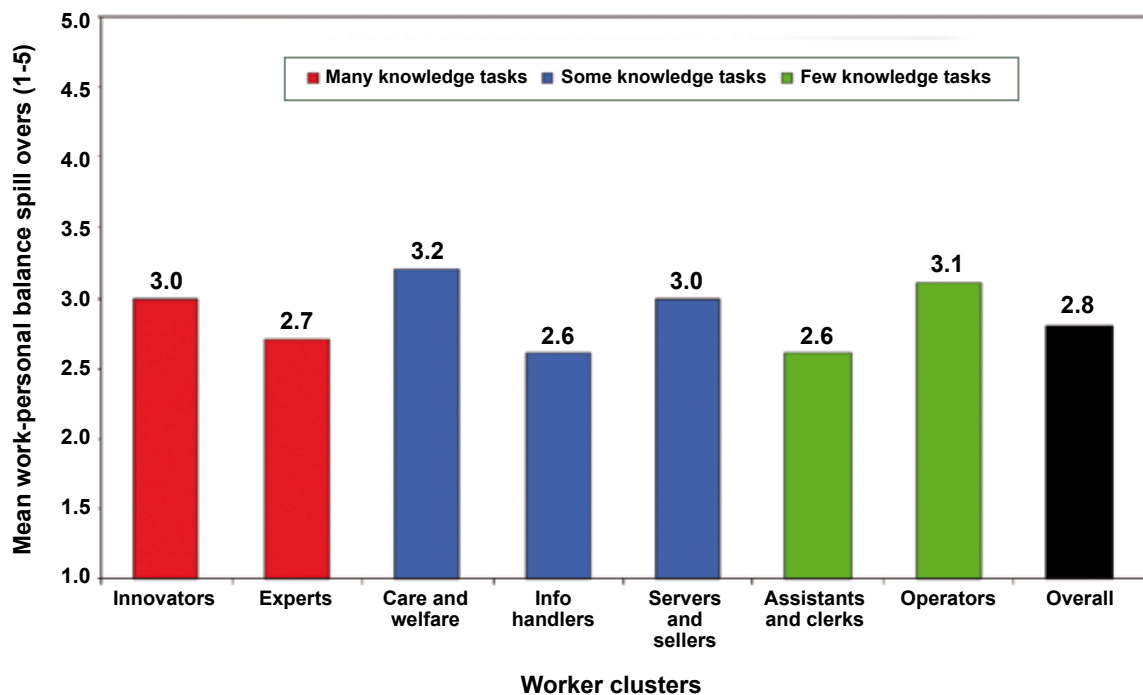
a way to pay the bills for now, rather than feeling trapped in their jobs. The remaining workers in this category didn't like their job but still felt they would be doing it for the foreseeable future, insinuating that they felt trapped.

Almost equal numbers of assistants and clerks reported that they liked their jobs while at the same time as simply a way to pay the bills. This finding, combined with the results about job quality and job satisfaction, suggests that there is a degree of bad work in the UK as evidenced by assistants and clerks – 28 per cent of the sample.

4.2
Work-life
balance
and life
satisfaction

We now turn to the extent to which workers felt the hours and demands of their jobs affect their fulfilment and enjoyment of personal responsibilities and activities. To explore this we created a combined score consisting of the mean agreement of the three dimensions: (1) the demands of work interfere with personal life, (2) there is a conflict between work and personal responsibilities and (3) work duties cause personal activities to be changed. The findings are presented in Figure 4.2 below.

Figure 4.2: Work-personal life spill overs by worker cluster



Source: The Work Foundation

Care and welfare workers, maintenance and logistics operators, and servers and sellers reported the highest levels of agreement to this scale. This finding corresponds with the findings on working hours and schedules set out in our previous report (Brinkley et al., 2009) and job intensity detailed in Section 3. Information managers, assistants and clerks and experts and analysts reported the least conflict between work and their personal lives. Overall, the workers in our survey only exhibited moderate tension between the two.

We also measured respondents' overall life satisfaction⁸ to better understand the relationship between work and life in general. Based on the 5 item scale we used to measure life satisfaction, the average across the different dimensions was 3.1 out of 5.0, suggesting slightly above moderate levels of satisfaction.

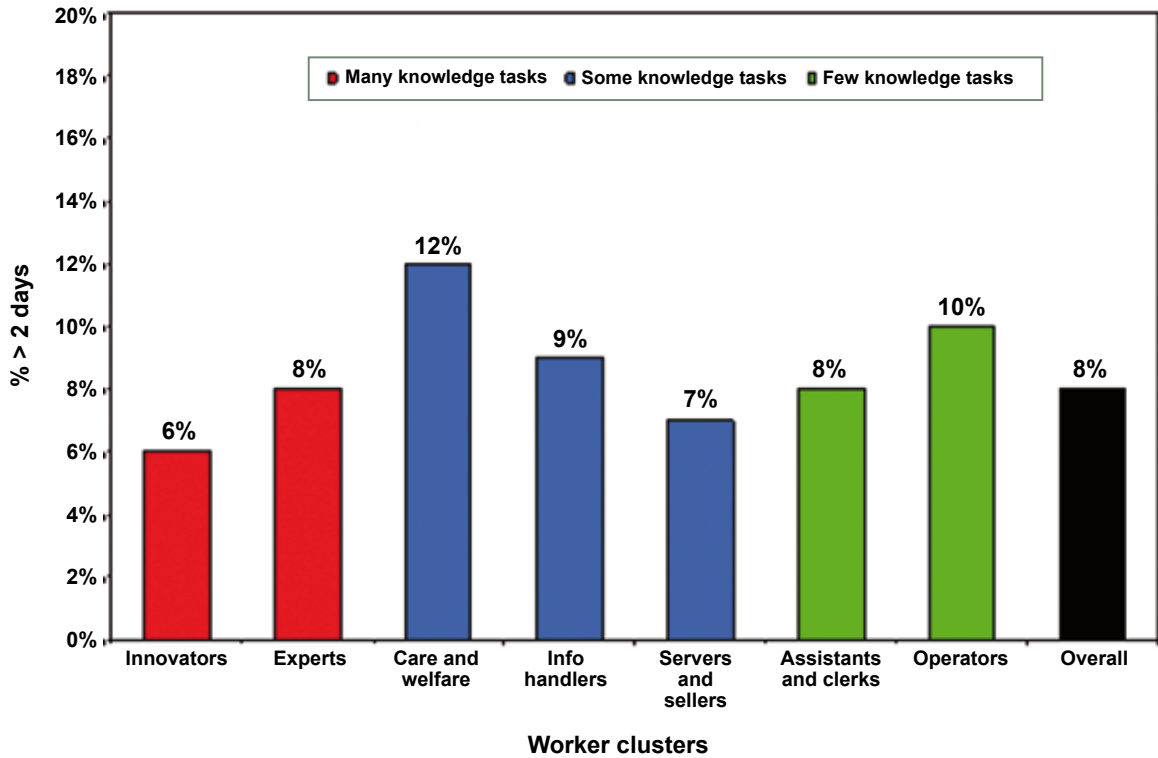
The responses of our survey participants on aspects of job and life satisfaction were moderately positively associated with each other. By which we mean higher satisfaction with the work itself was most strongly linked to higher reported life satisfaction. Clearly other aspects of workers' lives influence their life satisfaction beyond their jobs.

4.3 More than 95 per cent of leaders and innovators rated their health as 'very good' or 'excellent'.
Health and Percentages ranged from 88-91 per cent for the other worker clusters. Thus, while everyone
wellbeing reported quite good health, the leaders and innovators' perceptions were moderately better.

The lack of more extreme variability between the clusters might be due to the fact that we asked the survey respondents to report on their 'overall health' rather than on their assessment of specific health conditions. In contrast, respondent self reports of the degree to which health problems interfered with their work over the past four weeks responses were quite variable. About 15 per cent of workers reported some interference (1.1 days on average), yet the number of days reported varied from 1 to 28 days. Figure 4.3 below presents the percentage of workers reporting two or more days of ill health where they were unable to go into work or undertake normal tasks in the past month by work cluster.

⁸ Life satisfaction was measured using Diener et al's (1985) *Satisfaction with Life scale* 1-5 rating – see Section 2 for a full definition

Figure 4.3: Percentage of workers reporting health interfered with work more than two days in the past month by worker cluster



Source: The Work Foundation

Ill health mostly affected the ability of care and welfare workers (12 per cent) and maintenance and logistics operators (10 per cent) ability to carry out their normal work activities for two or more days over the past four weeks. The question asked people about the number of days they were unable to go to work or undertake normal tasks. It is likely that participants therefore interpreted this question as number of days of sickness absence taken in the last four weeks. As such it is perhaps to be expected that care and welfare workers, and maintenance and logistic operators might need to take more days off work through illness due to health and safety risks, for example, spreading infections to patients or operating machinery. Care and welfare workers may also have more health problems due to a greater exposure to illness than others, though their illness may also be due to institutional factors such as the way the NHS is managed. In contrast, ill health impacted only 6 per cent of leaders and innovators. For the other worker clusters, estimates ranged between 7 and 9 per cent. Thus, while our sample of UK workers reported 'good' to 'average' overall health, certain clusters of workers reported ill health that affected their work more seriously.

However, the question does not cover performance at work. For those who reported that their health interfered with their ability to work and did come into work, it is likely that they were not performing to maximum capacity. Coming into work when unwell is often discussed in the literature as ‘presenteeism’. Recent work in the NHS identified that seven in ten of NHS workers report coming into work for one or more days in the last four weeks despite being ill enough to feel justified in staying at home (Boorman, 2009⁹). Boorman’s findings suggest that our figures here have not fully captured the negative impact of ill health on performance at work.

Assessment of our different outcome measures (job satisfaction, life satisfaction and work-personal life spill over, and health and wellbeing) by worker clusters revealed that, by and large, the leaders and innovators – part of our core group of knowledge workers – exhibited the most favourable outcomes. These workers were consistently most satisfied in their jobs and reported better health and wellbeing. Assistants and clerks and maintenance and logistics operators reported the lowest levels of satisfaction, and care and welfare workers, maintenance and logistics operators and information managers reported the greatest interference between health and work. Care and welfare workers and maintenance and logistics operators also reported the greatest degree of work-personal life spill overs across all workers. Next we explicitly explore the relationship between job quality and wellbeing.

4.4 Our final set of analyses examined whether the good work indicators were able to account for cluster differences in the two measures of health and wellbeing and the personal outcome. For these analyses we contrasted the leaders and innovators against the remaining six clusters. We did this because of the favourable findings for leaders and innovators compared to the other groups. We controlled for workers’ age and gender to mitigate differences in the outcomes due to these background characteristics.

By and large, findings revealed that the good work indicators accounted for cluster differences in the outcomes with a few exceptions, notably maintenance and logistics operators reported worse general health and lower life satisfaction than leaders and innovators. These findings mean that the path to improving health and life satisfaction in the knowledge economy is to improve job quality of all workers rather than increasing the number of knowledge workers. Additionally, information managers were less likely to report liking their jobs (versus perceiving it as a way to pay the bills) than leaders and innovators even after accounting for cluster differences in the good work indicators.

⁹ As part of the Boorman review The Work Foundation led a research project, in partnership with RAND Europe and Aston University, which undertook a survey of 11,700 NHS workers

Looking specifically at the relationship of different elements of good work to employee wellbeing provides us with some important insights into where employers and policymakers might need to focus their efforts. Job intensity was a significant predictor of all health and wellbeing outcomes. Workers reporting feeling overworked and overwhelmed by jobs and coping with conflicting demands were more likely to report poorer health and wellbeing outcomes.

Alongside this finding job skills match was also an important predictor of outcomes. A good job skills match was positively associated with high levels of job and life satisfaction and good perceptions of the current job and negatively associated with health interference with work.

Finally, social capital – the degree to which employees perceive they are treated fairly and that supervisors consider their best interests – was a significant predictor of all but one of the outcomes. This suggests that fairness at work is an important concept that merits further attention in the workplace, not least in its role in mitigating the impact of job intensity.

Perhaps, most importantly, the results from these analyses suggest that our leaders and innovators are not simply 'better off' than other types of workers vis-à-vis their health and wellbeing. Rather it is the higher levels of job quality and good work present in their jobs that gives them the leading edge over their fellow workers – *good work matters*.

5. Conclusions

In this report, we explored the relationship between job quality and worker wellbeing among the seven worker clusters. We also examined whether knowledge work is a divisive force in today's economy evidenced by the core group of knowledge workers enjoying significantly better job quality and wellbeing than the other clusters of workers.

Health and wellbeing of workers

The responses to the health question were intriguing. Around 90 per cent or more of the workforce rated their own health as excellent. This seems out of line with the more objective measures of workforce health that were cited at the start of this report, although it is consistent with the argument that work is usually good for our mental and physical well-being. It perhaps reveals that workers have a generally positive outlook on their health. However, the answers to this item do not allow us to draw strong conclusions about overall health given it was just one general question.

A more revealing question was around specific health conditions that affected people's ability to do the job. Over four weeks preceding the survey, 15 per cent of workers reported they thought health related problems were affecting their work performance. About half were short term health problems which affected performance for only one day. But 8 per cent reported two or more days, rising to 12 per cent for care workers. Some of these people would have been unable to go into work. Others however, may have gone in to work and therefore the loss of potential output may not have been obvious to managers in the same way that people taking sickness absence would have been. The economic impact and the impact on employee wellbeing could, over time, be considerable and comparable to more transparent costs such as workplace absence. Indeed estimates put the economic cost of presenteeism at around 1.5 times that of absence (Sainsbury Centre for Mental Health, 2007).

Are knowledge workers better off?

Knowledge workers did report better overall health and were less affected by health related problems in doing their job than other groups. They also report more job role challenge, autonomy, social capital and job satisfaction as well as less absence than other workers.

First, net job quality is relatively high for most workers (regardless of knowledge content in their jobs), notably in terms of capacity to solve problems and make decisions on the job and control how the job is done, as well as perceived fairness. Second, job satisfaction was relatively high, particularly in terms of satisfaction with the actual work they do: most workers feel fulfilled by their jobs. Thus, although there appears to be a slight net advantage for knowledge workers, the majority of workers in the UK find enjoyment in their jobs and report decent job quality. It would have been surprising if we had come up with a different result given the sort of jobs

that knowledge workers typically do. However, as knowledge workers have been growing as a share of the workforce, we might have expected more improvement in the job quality indicators. If the quality indicators are taken at face value – with all the caveats – this must imply either a widening gap in job quality between knowledge and non-knowledge workers or a fall in job quality for knowledge workers.

However, the story is more complicated than this simple comparison suggests. On some measures the difference between our core group of knowledge workers and other groups is modest. Net job quality is relatively high for most workers, notably in terms of capacity to solve problems and make decisions on the job, control how the job is done and perceived fairness. People in care and related work report high scores that are comparable with our ‘core’ group of knowledge workers. Second, job satisfaction was relatively high, particularly in terms of satisfaction with the actual work they do: most workers feel fulfilled by their jobs. The majority of workers in the UK find enjoyment in their jobs and report decent job quality.

However, we found that a significant number of ‘bad’ jobs also exist in the UK. The assistants and clerks group, comprising 28 per cent of the sample, reported relatively low job quality on all indicators. The growth of the knowledge economy appears to have done little to raise job quality amongst these groups of workers.

Job quality matters

Our findings demonstrate one of the reasons why job quality matters. Improving job quality provides an opportunity to address the ill health of the UK workforce. Overall job quality accounted for much of the difference in reported health and wellbeing across our sample of workers, regardless of age or gender. Specifically higher social capital, support and perceived fairness in the workplace can help to mitigate the negative impact of job intensity. These findings reinforce evidence from previous research by The Work Foundation and others as mentioned in Section 1, that highlight the positive impact that job quality can have on the health and wellbeing of workers.

Another finding that cuts across all our groups regardless of knowledge intensity, described in our previous report on this survey and reiterated here, is that just under half of workers reported that their current jobs made good use of their skill sets and previous experience. Our conclusion in our previous report was that there is a missed opportunity among UK employers to take fuller advantage of the skills, knowledge and experiences that employees have to share and refine on the job. Evidence presented in this report demonstrates that not only is this a missed opportunity but that a skills mismatch is an important predictor of poor health and wellbeing of employees.

Conclusions

Addressing job quality is not just a matter for employers. The last decade, and in particular the last five years, has seen the relationship between work and health rise up the political agenda. Increasingly policy makers and many employers are recognising that there is a role for the workplace in improving the health of employees. Most recently the independent review of the health of the working age population by Dame Carol Black outlined steps that the government should take to face the significant health challenges ahead. Following this the government has acted on many of Black's recommendations not least by undertaking an independent review of the health of the NHS workforce (Boorman review) as a first step in being an exemplar employer. Government should continue to implement all the recommendations in Black's review.

However, Coats (forthcoming) argues that the agenda is fragile and the direction of policy sometimes unclear. Whichever party is in power following the next election will be subject to constrained resources presenting an additional challenge. Yet not pursuing this agenda is not a realistic option. The trends in workforce health indicate significant cost will be incurred by society and employers in the coming years without intervention.

Thus we reiterate Coats's (2008) recommendation for a mixed programme of integrated regulatory and non-regulatory steps to realise improvements in job quality and workforce wellbeing. Job quality should not be seen simply as an end in itself. Instead it should be situated in a wider debate around quality of life and economic performance.

We recommend three regulatory changes:

- Removing the 'so-called' individual opt out clauses to the Working Time Regulation so that over a period of time employers move to a 48 hours maximum week.
- Expanding the Information and Consultation regulations, so that workers' representatives have the opportunity to discuss job quality with their employers.
- Requiring more details from companies in annual reports on health and safety performance and job quality.

It is not possible to legislate for many of the improved standards required such as high quality employment or social capital in the workplace. Consequently, in addition to better regulation to improve the above standards, non regulatory reform is also required.

Ministers have the power to influence the state of national debate over job quality and should use the opportunity of Marmot's review (2010) of health inequalities, together with the MacLeod

review (2009) of employee engagement as a way to build a coherent narrative to explain how job quality is related to wider policy objectives.

The forthcoming launch of the new Investor in People healthy business assessment will add another tool to government's armoury of soft regulation, together with the existing Health and Safety Executive's Stress Management Standards and the ACAS Good Employment relations model. These tools and the forthcoming introduction of the 'fit note' can be used by employers to start conversations within their organisations about job quality, engaging employees in identifying and developing solutions.

Social partners can also help to develop a dialogue at sectoral level and encourage voluntary minimum standards to be established. They can also facilitate networks to share best practice and transfer knowledge, specifically around skill utilisation and social capital at work, two areas that our findings reveal require particular focus from employers. Government can not only act as an exemplar employer but should also consider using public procurement creatively to improve the quality of employment across those organisations in the government's supply chain. Our findings indicate that if good work was a priority in all jobs, we would likely see better health and wellbeing across the workforce.

Appendix A. Description of organisational variables

Variable(s)	Description/Categories
Firm culture	Agreement (1=strongly disagree, 5=strongly agree) with four organisational descriptions: (1) loyalty and trust, (2) innovation and development, (3) aggressiveness and (4) formal rules in their organisation
Job skills match	Whether their current job demands are matched to their skill sets or (1) if they could cope with more demanding tasks or (2) need further training to complete their tasks
Repetition/job complexity	Whether (yes/no) jobs entail: (1) unforeseen problem solving, (2) repetitive tasks, (3) complex tasks and (4) learning new things
Autonomy	Agreement (1=strongly disagree, 5=strongly agree) that respondents have the: (1) ability to make decisions on own at work, (2) freedom to choose the methods of work and (3) freedom to choose pace of work
Job intensity	Frequency (1=never, 5=everyday) with which respondents feel (1) overworked, (2) overwhelmed by workload and (3) subject to conflicting demands
Social capital	Agreement (1=strongly disagree, 5=strongly agree) that respondents are: (1) treated fairly, (2) had attentive co-workers and (3) had supportive supervisors
Absenteeism/presenteeism	Number of days unable to carry out work tasks or go to work due to health reasons in past four weeks
General health	General perceptions of health (1=poor health, 5=excellent health)
Job satisfaction	Satisfaction (1=very dissatisfied, 5=very satisfied) with five aspects of work: (1) pay, (2) security, (3) the work itself, (4) sense of achievement and (5) hours
Life satisfaction	Agreement (1=strongly disagree, 5=strongly agree) that respondents feel: (1) their life was close to their ideal, (2) happiness with lifestyle, (3) general life satisfaction, (4) life achievement and (5) degree to which they would change their lives if they could
Perceptions of job	Whether respondents: (1) like their jobs and see themselves doing their jobs in the future, (2) dislike their jobs but see themselves doing their jobs in the future or (3) see their job as a way to pay the bills only
Work-personal life spill over	Agreement (1=strongly disagree, 5=strongly agree) that: (1) the demands of work interfere with personal life, (2) there is a conflict between work and personal responsibilities and (3) work duties cause personal activities to be changed

Appendix B. Sample demographic and background characteristics

Background characteristics	%/Mean
Gender (male)	51.3%
M(SD) Age	37.93 (10.29)
Ethnicity (White)	93.6%
Social grade (ABC1)	55.6%
Region	
North	39%
Midlands	31.4%
South	29.6%
Educational attainment (degree)	34.2%
Age complete FT ed. (>16)	60.4%
Marital status (married/cohabiting)	64.3%
Income (% greater than median)	47.1%
Occupation	
Manager and senior officials	19.3%
Professional occupations	13.1%
Associate professional and technical occupations	14.6%
Administrative and secretarial occupations	16.8%
Skilled trades occupations	5.8%
Personal service occupations	7.1%
Sales and customer service occupations	8.1%
Process, plant and machine operatives	7.5%
Elementary occupations	7.6%
Work in knowledge-intensive industry	52.5%

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