

Online, on call: the spread of digitally organised just-in-time working and its implications for standard employment models

Ursula Huws , Neil H. Spencer and Dag S. Syrdal

This article questions whether the dominant policy discourse, in which a normative model of standard employment is counterposed to 'non-standard' or 'atypical' employment, enables us to capture the diversity of fluid labour markets in which work is dynamically reshaped in an interaction between different kinds of employment status and work organisation. Drawing on surveys in the UK, Germany, Sweden and the Netherlands that investigate work managed via online platforms ('crowdwork') and associated practices, it demonstrates that crowdwork represents part of a continuum. Not only do most crowd workers combine work for online platforms with other forms of work or income generation, but also many of the ICT-related practices associated with crowdwork are widespread across the rest of the labour market where a growing number of workers are 'logged'. Future research should not just focus on crowdworkers as a special case but on new patterns of work organisation in the regular workforce.

Keywords: platform labour, crowd work, standard employment model, survey, online labour, varieties of capitalism, just-in-time labour, work organisation.

Introduction

The emergence of work managed by online platforms (sometimes known as 'crowdwork' or the 'gig economy') has often been viewed as representing a new form of 'atypical' or 'non-standard' employment. This article argues that it does not so much constitute a separately identifiable form of work but an extreme example of a much broader series of trends that are also affecting forms of work and employment generally regarded as 'regular', 'typical' or 'standard'. It asks, in other words, whether the

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normative model that has been used as a benchmark in Western Europe since the end of World War II has now lost its validity.

In the first two decades of the 21st century, there has been a dissolution of many of the characteristic features of work as it was normatively conceived in the second half of the 20th century. Several socio-economic and technological trends have converged to bring about a breakdown of clear spatial boundaries between work and leisure, a disintegration of fixed occupational identities and a dispersal of work, both spatially and contractually, along extended global value chains. Despite the increasing number of deviations from the standard model of work laid down in most developed Western economies in the mid-20th century, this model is still generally referred to as the norm, with other forms of work treated, both by policymakers and by academics, as 'atypical' or 'non-standard'. One such form of 'atypical' work that has become the focus of attention in the 2010s is work managed via online platforms (referred to in this article as 'crowdwork'). This is a form of work that does not fit easily into existing classification systems of workers—by occupation, by sector, by place of work or by type of contract—and is therefore exceptionally difficult to measure.

This article draws on a series of population surveys carried out in four European countries designed to identify crowdworkers. It argues that, although it represents an extreme example of precarious work, crowdwork cannot usefully be defined as 'atypical' or 'non-standard'. On the contrary, many of the features associated with it are becoming increasingly prevalent in many occupations across the labour market, bringing the normative conventional model of work and employment itself into question.

We begin by summarising the conceptual approaches that have been taken in the past to explaining variations in the standard employment model, including precariousness. We then briefly review the existing research on crowdwork before presenting the preliminary results of four online surveys, conducted in the UK, Germany, Netherlands and Sweden, co-funded by the Foundation for European Progressive Studies (FEPS) and the trade union confederation UNI Europa, which, for the first time, provided evidence of the extent and characteristics of crowdwork practices. We end by drawing some conclusions from these results and reflecting on their implications for the notion of a standard model of work and employment in the context of digitalised globalised 21st century labour markets.

The European normative model of work and its varieties

The normative model of work that developed in Europe, and to some extent in other developed Western economies, after World War II has been analysed in a number of ways by scholars coming from a range of different theoretical perspectives. The period in which it developed has been conceived, variously, as the 'post-war Keynesian welfare state' (Jessop, 1990), 'the Golden Age of Capitalism' (Marglin and Schor, 1992), 'Les Trente glorieuses' (Fourastie, 1979) or 'Fordism' a concept which, in the French Regulation school approach (Aglietta, 1976; Lipietz and Macey, 1987), denotes a hegemonic mode of production/accumulation, linked to a particular historical period, rather than a specific form of work organisation.

For empirical researchers, the concept of a normative model of work raises two puzzles. The first is how to explain variations in the form it has taken in different national contexts. This has often been addressed by arguing that there are different 'worlds of welfare capitalism' (Esping-Andersen, 1990) or 'varieties of capitalism' (Coates, 2000; Hall and Soskice, 2001), with employment models, along with other economic features, being shaped by an interplay between international capitalism on the one hand and specific institutions on the other, in an approach often associated with Institutional Economics (Hodgson, 1988). The second conundrum facing researchers has been how to explain the observable empirical reality that the model of full-time permanent employment is far from universal, even in the countries with the most inclusive and egalitarian welfare regimes and social-democratic varieties of capitalism. This was theorised by Doeringer and Piore (1971) as a binary division between 'internal' or

'primary' and 'external' or 'secondary' labour markets, using the concept of 'dual labour markets', a concept that was subsequently replaced by some researchers (in the recognition that multiple models of employment could co-exist in the same economy) by that of 'labour market segmentation' (Burchell and Rubery, 1990; Wilkinson and Rubery, 1994). Another, related, approach has been to view the labour market in terms of a 'core' of secure workers with permanent jobs, surrounded by a 'periphery' of workers who can be called on as required by 'flexible organisations' to meet fluctuations in demand (Atkinson, 1984; Atkinson and Meager, 1986).

For policy-makers, workers who do not fit the standard employment model have generally been defined as exceptions to this norm: as being in 'non-standard' or 'atypical' employment (see for instance, OECD, 2015; Cazes & Nesporova for the ILO, 2003; Broughton, Biletta & Kullander for Eurofound, 2010), with statistics most likely to be collected for part-time workers and workers on fixed-term contracts, seen as the two most common forms of atypicality. These terms, which reinforce the idea of a norm, but duck the question of how exceptions to it are created, have been adopted by many labour market researchers, albeit in the recognition that 'atypical' work takes many different forms, creating problems of definition and cross-country comparison (see, for instance, de Grip *et al.*, 1997; Duell, 2004; Keller and Seifert, 2005). Further analysis, especially in the fields of labour sociology and gender studies, has shown that patterns of exclusion from the primary labour market of 'normal' employment are strongly gendered and racialised (Smith and Rubery, 1998; Perrons, 2000; Vosko, 2000) and can thus not be explained without reference to broader social structures, external to the labour market *per se*. The literature on homeworking (Huws, 1984; Huws and Bisset, 1984; Huws *et al.*, 1990; Phizacklea and Wolowitz, 1995; Felstead *et al.*, 2005) supplies evidence of the complexity of these interactions.

Scholarly attempts to explain the progressive weakening of the standard employment model since (at least) the 1990s, have primarily come from two directions.

The first of these draws from sources both in mainstream organisational studies (e.g. Porter, 1990; Dunning, 1993) and in World Systems theory (e.g. Wallerstein, 1979; Arrighi *et al.*, 1999) analysing corporate restructuring as a driver of changes in the organisation and character of employment, often paying particular attention to value chain restructuring (Gereffi *et al.*, 2005; Flecker and Meil, 2010). Combined with insights from labour sociology, in particular the labour process theory tradition (Braverman, 1974; Thompson, 2009), this strand has given rise to a rich seam of studies that anatomise the ways in which organisational restructuring has been accompanied by the fragmentation and outsourcing of business functions and tasks, the blurring of organisational boundaries, the devolution of formal responsibility for employment (but not ultimate managerial control) and the development of new employment models (see for example Grimshaw *et al.*, 2002; Marchington *et al.*, 2006; Muehlberger, 2007; Flecker, 2009).

The second strand draws in particular on the concept of 'Post-Fordism' developed within French Regulation School theory (Amin, 1994; Jessop, 1995; Lipietz, 1997) and on Italian Workerist (Wright, 2002) and Autonomist (Lazzarato, 1996; Hardt and Negri, 2004; Morini and Fumagalli, 2010; Fumagalli, 2015) theory. This approach tends to focus on precariousness as a generalised feature of a particular phase of capitalist development, even to the notion of a 'precariat' (Standing, 2011) as a new class, rather than the more specific focus on the casualisation of designated groups of workers in particular positions in organisations and their value chains that has characterised much of the scholarship in the first approach.

Recently, there has been something of a convergence between these two approaches, thanks in part to a growing body of empirical research on precarious creative and knowledge workers among scholars working in the field of communications and cultural studies (see for example, Ross, 2009; Gill & Pratt, 2008). A new field of precarious work studies appears to be emerging, drawing to varying degrees from both these traditions, with empirical work focusing on workers across a wide spectrum of sectors and occupations, for example new media workers (Gill, 2010), academic researchers (Norkus *et al.*, 2016), domestic workers (Pernigotti, 2012), call centre workers (Brophy,

2011), radio producers (Bonini and Gandini, 2016) and medical staff (Palukka and Tiilikka, 2011).

In most of this literature precarious work is still counterposed to a normative model of 'standard', 'typical' or 'decent'¹ work, leaving the dominant paradigm more or less intact, though increasingly problematic. Nevertheless, this expanding body of evidence cumulatively paints a picture of highly diverse labour markets across Europe (and indeed elsewhere around the globe), a heterogeneity that cannot easily be captured in the labour market statistics that, perforce, have to assign people to the binary categories of 'full time' or 'part time', 'permanent' or 'temporary', 'employed' or 'self-employed', 'in work' or 'seeking work', although these simple statistics do nevertheless provide valuable evidence of trends.

This is the context in which 'crowd employment' has begun to attract the attention of scholars and policy makers as a 'new form of employment' (Eurofound, 2015). The next section of this article discusses the existing research literature on this phenomenon, which we term 'crowdwork' for the purposes of this article, by which we mean paid work organised by online platforms acting as intermediaries between workers and their employers or clients (see Huws, 2015, 2016a,b; Huws, 2017; Huws *et al.*, 2017).

Crowdwork

The emergence of online platforms for managing work in the early 21st century took many labour market researchers by surprise. Like that of other technologically enabled developments in the organisation of labour (such as teleworking, or offshore outsourcing), it was heralded by a confusing terminological flurry, deriving from several different conceptual frameworks, not all of which were related to the market for paid labour.

Some of these terms, such as 'peer production' (Bauwens, 2006) and 'collaborative consumption' (Botsman and Rogers, 2010) refer to notions of a 'sharing economy' (Benkler, 2004; Horton and Zeckhauser, 2016) in which online platforms are conceived simply as intermediaries between individuals wanting to share goods and services, not necessarily for reimbursement. Related to such terms are others that focus particularly on the blurring of boundaries between production and consumption, such as 'prosumption' (Toffler, 1980; Ritzer and Jurgenson, 2010) 'co-creation' (Prahalad and Ramaswamy, 2000; Banks and Humphreys, 2008) and 'playbour' (Kücklich, 2005).

A third strand in the discourse, including the terms 'cloudsourcing' (Vaquero *et al.*, 2008; Muhic and Johansson, 2014) and 'crowdsourcing' (Howe and Robinson, 2005) draws on the notion of a 'human cloud' (Kaganer *et al.*, 2012) or 'crowd' (Surowiecki, 2005) whose brains can be picked or labour accessed via online intermediaries, whether this is carried out paid, unpaid or with the possibility of payment in the event of winning a competition. As indicated by the suffix 'sourcing', this terminology presents 'crowdwork' (Kittur *et al.*, 2013) as an evolution from earlier outsourcing or global sourcing practices which enable employers to select from a large pool of talent without entering into any long-term relationship of mutual commitment.

This employers' perspective becomes even more obvious in terms such as 'workforce as a service' (OnForce, 2013), 'workforce on demand' (Deloitte, 2015) 'just-in-time workforce' (De Stefano, 2016) or 'liquid workforce' (Accenture, 2016). On the labour supply side, a vocabulary is often used that relates back to more traditional forms of self-employment, such as 'gig economy' (Grossman and Woyke, 2015) a term that suggests that it is not only normal but also fun to hop creatively from job to job on an *ad hoc* basis.

Mostly lacking clear definitions, these, and many other similar terms, refer to related, but not necessarily identical, concepts, highlighting various features of the new, rapidly evolving forms of online management which are shaping and reshaping more and more aspects of contemporary labour. Much of the literature on the development of online platforms is, implicitly at least, technologically deterministic, treating it as a new and unprecedented phenomenon originating in Silicon Valley in the first decade of the 21st century when most of the best-known platforms were launched (E lance was founded in 1999, oDesk in 2003, Amazon Mechanical Turk in 2005, Taskrabbit in 2008

and Uber in 2009) as a direct result of technological innovation. Few attempts have been made to integrate it into broader conceptual frameworks for analysing labour markets, perhaps because the lack of clear definitions translates into a lack of indicators and hence an absence of statistics that can demonstrate the numbers, characteristics and geographical, occupational and sectoral distribution of this portion of the workforce. Partial exceptions to this include Bergvall-Kåreborn and Howcroft (2014).

Nevertheless, there have been attempts to develop definitions and typologies of crowdwork (see for example Green *et al.*, 2014; Brinkley, 2016; Durward *et al.*, 2016; Eurofound, 2015; Mandl, 2016; Estellés-Arolas and González-Ladrón-de-Guevara, 2012²) as well as to establish what their legal employment status might be (Stone, 2006; Felstiner, 2011; Dokko *et al.*, 2015; Katz, 2015; De Stefano, 2016).

There has also been empirical research on the characteristics of crowdworkers including surveys based on particular platforms (Ipeiritis, 2010a,b; Ross *et al.*, 2010; Irani, 2015; Berg, 2016), case studies (Green *et al.*, 2013), in-depth interviews (Caraway, 2010; D’Cruz and Noronha, 2016), secondary analysis of platform data (Gandini *et al.*, 2016) and action research carried out with the active participation of crowdworkers (LaPlante and Silberman, 2016; Milland, 2016). There have also been some attempts in the United States to measure the scale of participation in the online economy across whole populations. (Katz and Kreuger, 2016; Steinmetz, 2016).

What most of these exercises have in common is a presumption that crowdwork is a distinctive type of work, capable of being distinguished precisely from other kinds of work and, moreover, with its own stable sub-categories, with little or no attention to commonalities with those other kinds of work.

Our survey was designed in part to fill an empirical gap on the extent and characteristics of crowdwork in Europe. However by conceiving crowdwork as a constructed variable (i.e. using a definition based on a combination of different variables each of which can be analysed separately) it also aimed to analyse differences and commonalities among crowdworkers and non-crowdworkers across the whole labour market.

Survey design and methodology

Drawing on an extensive review of the existing literature (Huws, 2015; Huws, 2017) and with funding from the Foundation for European Progressive Studies and UNI Europa,³ online surveys were carried out of 8,690 adults in the UK, Sweden, Germany and the Netherlands between 22 January and 27 April 2016. The surveys were subsequently carried out in other European countries but we focus here on these four which were carried out in the first research period and illustrate a variety of different welfare regime types. The surveys were conducted by Ipsos MORI as add-ons to its regular national omnibus surveys, following recommended practice in research on the informal economy (Williams & Schnieder, 2016). All samples were stratified by age, gender, region and working status to be representative of the total adult working-age⁴ population. The results were then weighted to take account of known differences between online and offline populations in each country.

Given the lack of commonly recognised definitions and terminology, the approach that was adopted was to capture information about a wide range of practices with which crowdwork might be confused in other statistics, including other forms of online income generation and online job search. Crowdworkers could then be isolated from the broader sample by elimination. It was also possible to investigate several definitions of crowdwork by combining these variables in different ways. Questions were also asked about a range of other practices linked with online management, whether associated with crowdwork or more conventional forms of employment. The main empirical results of the survey have been published elsewhere (Huws *et al.*, 2017) and it is not our intention to repeat them here. Rather our objective is to explore overlaps between crowdworkers and other workers, and investigate similarities in the ways that their work is organised and managed.

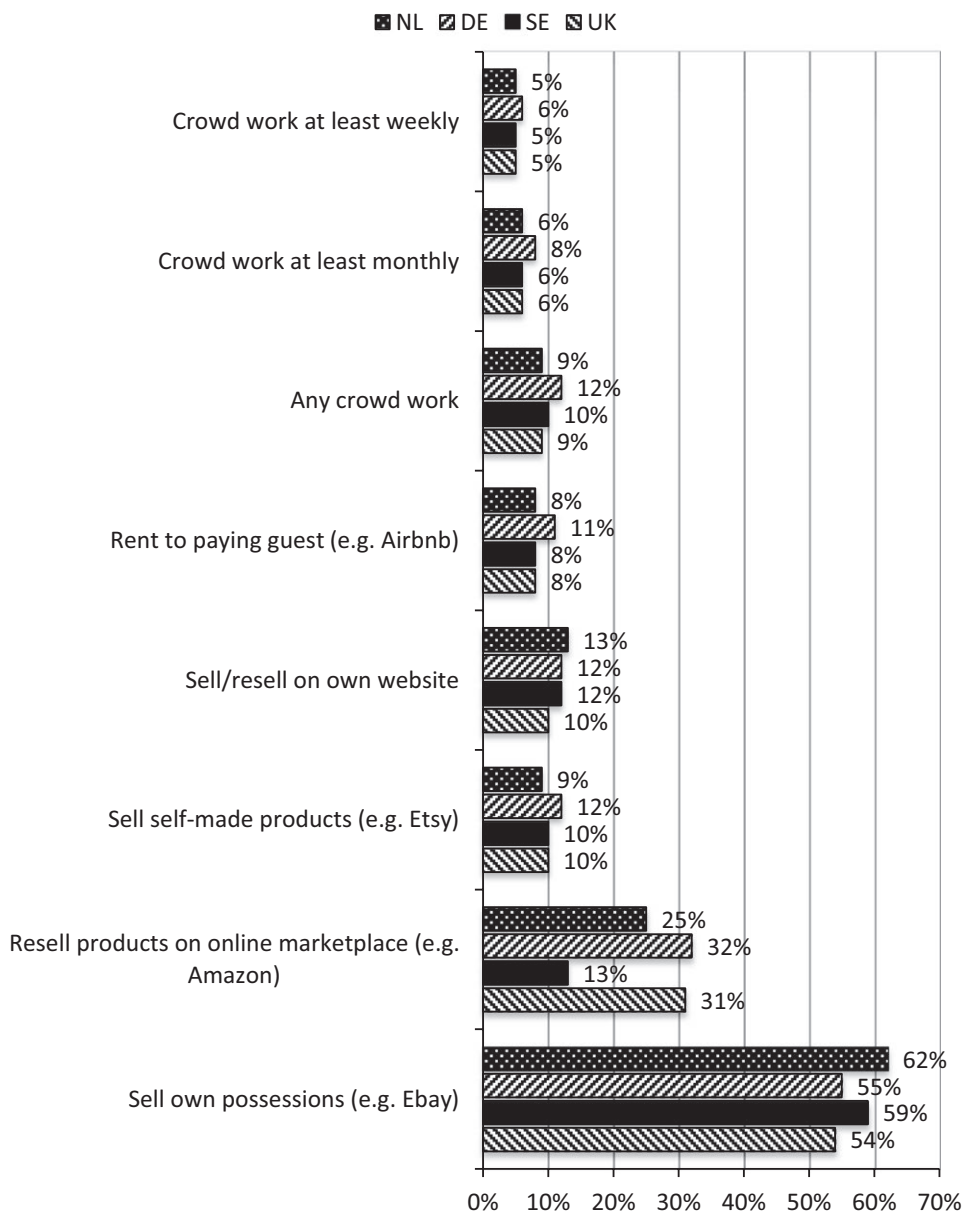


Figure 1: Participation in the online economy as a source of income, by country

Source: Hertfordshire Business School Crowd Work Survey, 2016.

Base: 2,238 respondents in the UK, 2,146 respondents in Sweden, 2,180 Respondents in Germany and 2,126 respondents in the Netherlands (weighted).

The analyses of the data are intended to be descriptive in nature, with a view to uncovering the story of how sections of the population are engaged with crowdwork and its associated practices. However, the deceptively simple nature of the analyses was only made possible by the careful nature of the data collection and the weighting strategies used. Rather than adopt a complex modelling approach to account for biases within a sample,

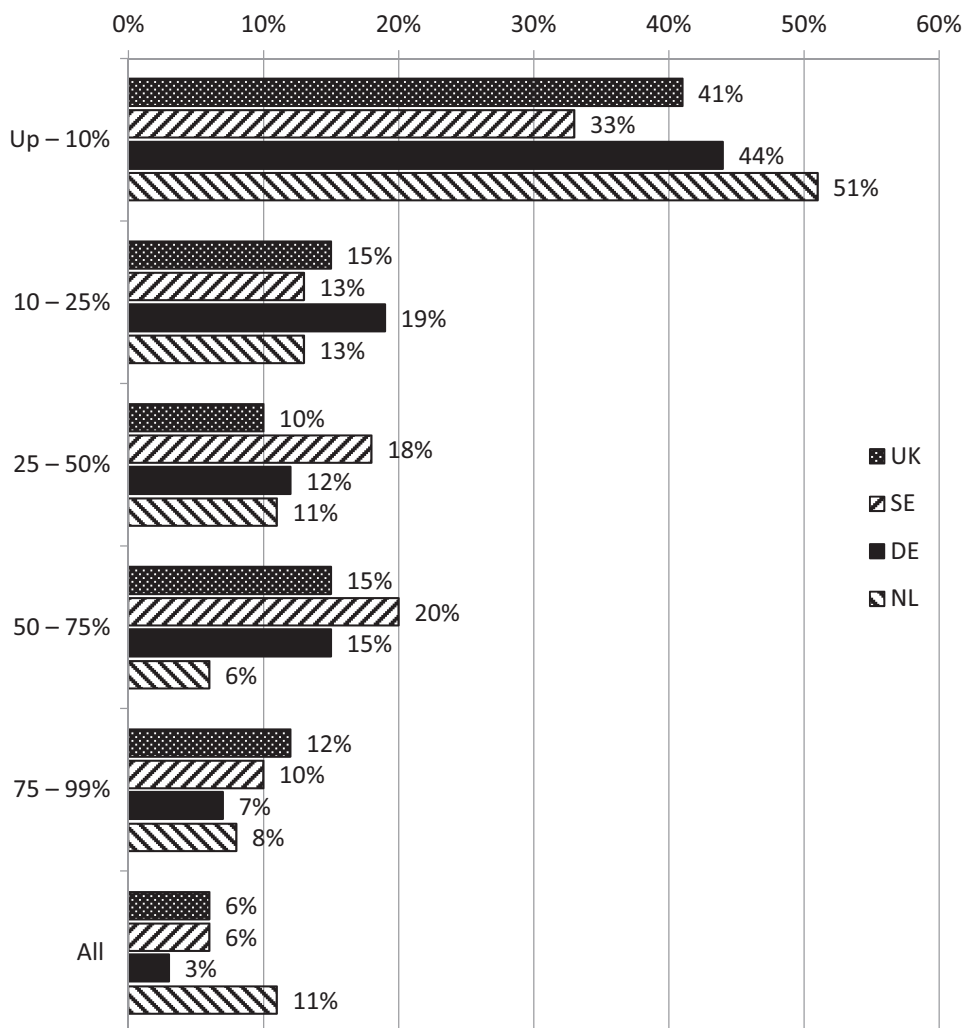


Figure 2: Earnings from crowdwork as a proportion of all income, all crowdworkers, by country with 'don't know' and 'prefer not to say' responses omitted (%)

Source: Hertfordshire Business School Crowd Work Survey, 2016.

Base: 181 respondents in the UK, 163 respondents in Sweden, 223 Respondents in Germany and 141 respondents in the Netherlands stating that they had ever carried out crowdwork (weighted).

attention was paid to obtaining a well-balanced raw sample and the calculation of weights which could lead to population estimates being produced with minimum bias.⁵

Research findings

Embeddedness of crowdwork in other income-generating activities

The research revealed crowdwork as a practice that is difficult to distinguish from other income-generating activities. On the one hand, it is associated with other ways of earning an income online which do not involve the sale of labour; on the other hand, it is combined with other sources of earnings from work.

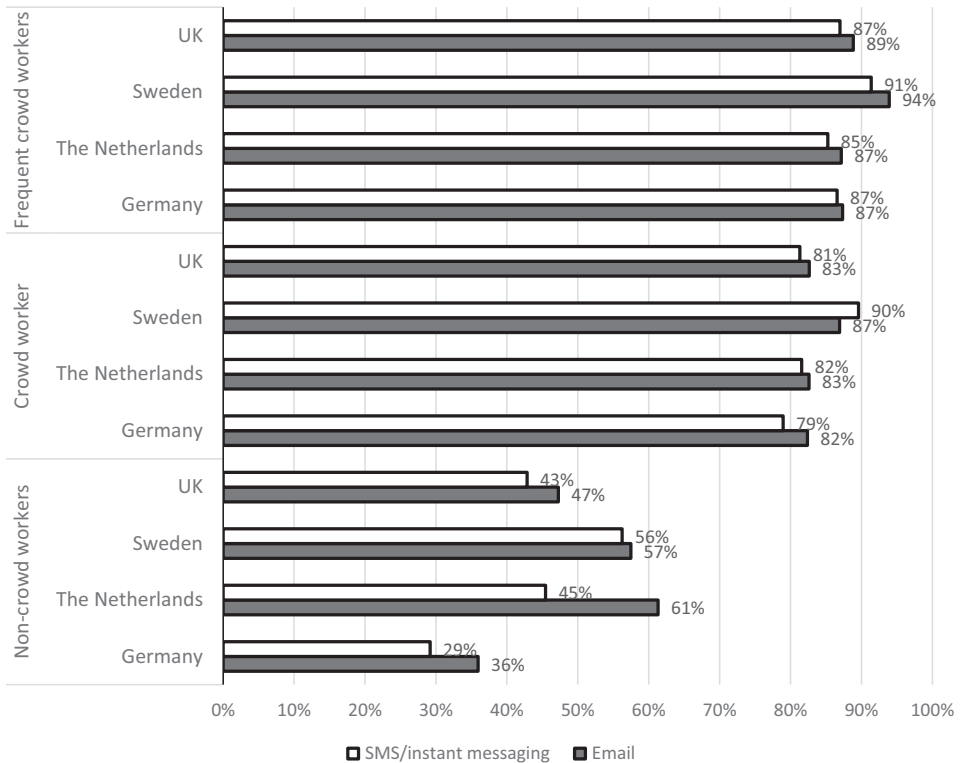


Figure 3: Sending or receiving email and instant messaging from home, by country: comparison of frequent crowdworkers, all crowdworkers and non-crowdworkers with ‘don’t know’ responses omitted (%)

Source: Hertfordshire Business School Crowd Work Survey, 2016.

Base: 2,180 respondents in the UK, 2,060 respondents in Sweden, 2,087 Respondents in Germany and 2,071 respondents in the Netherlands (weighted).

As Figure 1 shows, a large proportion of the population—over half the sample once a small number of ‘don’t know’ responses have been excluded—in each of the four countries surveyed used online platforms to generate an income in 2016, especially by selling and reselling goods online (on large generic platforms such as eBay or Amazon or on their own dedicated websites). A significant minority (between 8% and 11%) also used platforms like Airbnb to generate an income from renting out accommodation to paying guests. In this broader context, the proportion (ranging from 9% to 12% depending on country) who claimed to have at some point made an income by selling their labour online (crowdwork) is relatively modest.

For most, this was an occasional activity. Narrowing the focus down to those respondents who said they sold their labour via online platforms at least monthly produced a smaller group, representing 6%–8% of the sample, which fell further to 5%–6% when the focus was restricted to those who said they did crowdwork at least weekly. This group can be regarded as ‘frequent crowdworkers’. For the majority of crowdworkers, income from this work was a supplement to other earnings, as Figure 2 shows. Nevertheless, for a small minority (between 3% and 11% when omitting those who responded ‘don’t know’ or ‘prefer not to say’) it represented their only income, with a further 7%–12% for whom it constituted between 75% and 99% of total earnings. It constituted more than half of personal income for only 25% of crowdworkers in the Netherlands and in Germany, 36% in Sweden and 34% in the UK.

It is clear, therefore, that selling one’s labour via an online platform is part of a continuum of practices, including other forms of income generation via the Internet on the one

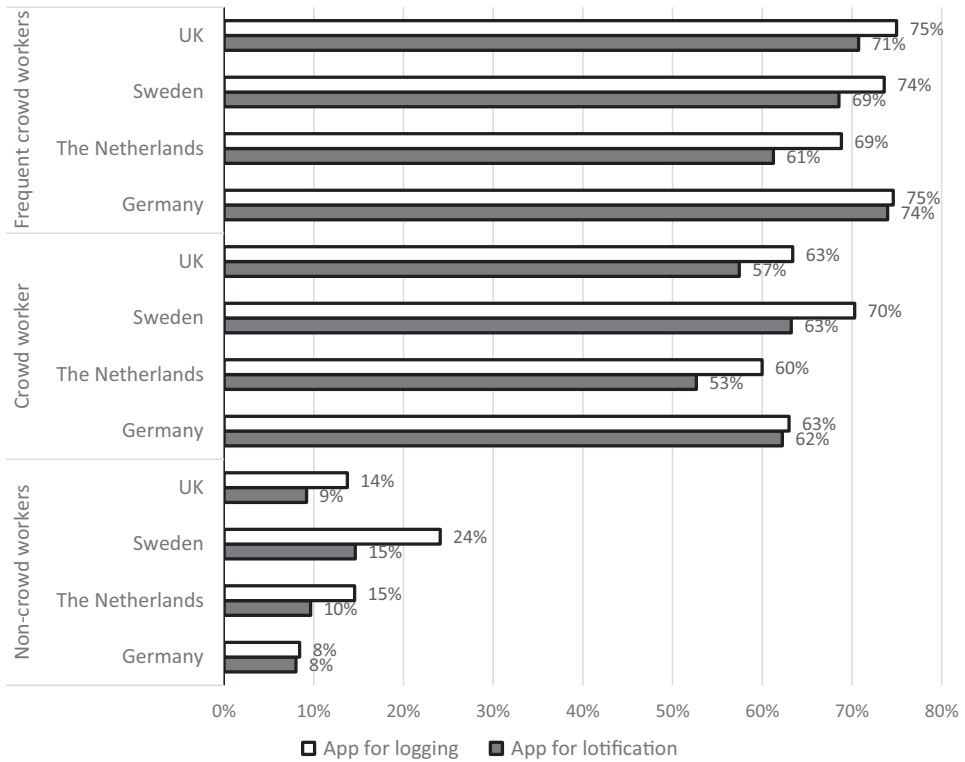


Figure 4: Use of 'app' to log work and notification of available work, by country: comparison of frequent crowdworkers, all crowdworkers and non-crowdworkers with 'don't know' responses omitted (%)

Source: Hertfordshire Business School Crowd Work Survey, 2016.

Base: 2,163 respondents in the UK, 2,025 respondents in Sweden, 2,086 Respondents in Germany and 2,057 respondents in the Netherlands (weighted).

hand and employment which is not obtained via online platforms on the other. Depending on where they are placed on this spectrum, many workers may be able, to some extent, to rely on the protections offered by standard employment contracts in their other part-time or full-time employment. But for a significant minority of the adult population (about one person in 40 across the whole sample), crowdwork provides the main source of income, suggesting a high degree of dependency on platforms and, with it, relative exclusion from these conventional forms of protection. While not wishing to minimise the social costs to these workers, the more important point here is that they are a minority and the experience of crowdwork is spread much more broadly across the working population.

The picture that emerges is one in which growing proportions of the population, including many people in 'regular' employment, are piecing together a livelihood from multiple sources of income, not all of which involve the sale of their labour. Where people are selling their labour, online platforms represent only one of several different sources of paid work.

Commonalities between crowdworkers and non-crowdworkers in terms of work organisation

We have already demonstrated that many workers who are in regular employment are also engaging in work managed via online platforms. We now turn to the question of

the extent to which the forms of work organisation found in crowdwork represent broader patterns, also found in other types of employment.

We focus here on three groups of ICT-related practices which enable crowdwork: the use of email or SMS communication from the home; the use of an ‘app’ provided by the employer or client to notify workers when work is available; and the use of specialised ‘apps’ or websites for logging work (e.g. to report the worker’s location, record the start and finishing times of jobs or record the hours worked).

Figures 3–5 compare the use of these practices among frequent (at least weekly) crowdworkers, occasional crowdworkers and non-crowdworkers in the four countries studied.

As expected, sending or receiving work-related emails and texts while at home, shown in Figure 3, is a very common practice among crowdworkers. Work-related email use was reported by between 87% (in the Netherlands and Germany) and 94% (in Sweden) among frequent (at least weekly) crowdworkers, and between 82% (in Germany) and 87% (in Sweden) of all crowdworkers. The picture for work-related text and instant messaging was similar, ranging between 85% (in the Netherlands) and 91% (in Sweden) among frequent crowdworkers, and between 79% (in Germany) and 90% (in Sweden) among all crowdworkers). More striking, however, is the high level of these practices among non-crowdworkers. Between 36% (in Germany) and 61% (in the Netherlands) send or receive work-related emails whilst at home. The comparable levels for texts or instant messages range from 29% (in Germany) to 56% (in Sweden). These are thus common practices for up to half of the non-crowd workforce, indicating

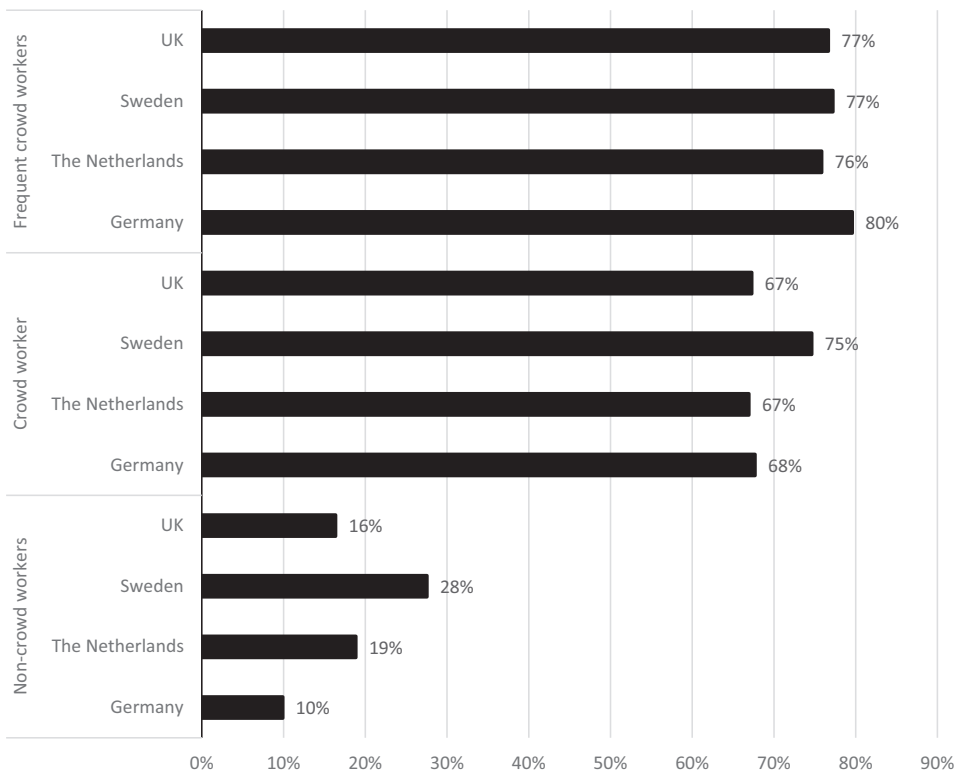


Figure 5: Either ‘app’ use, by country: comparison of frequent crowdworkers, occasional crowdworkers and non-crowdworkers with ‘don’t know’ responses omitted (%)

Source: Hertfordshire Business School Crowd Work Survey, 2016.

Base: 2,168 respondents in the UK, 2,020 respondents in Sweden, 2,085 Respondents in Germany and 2,061 respondents in the Netherlands (weighted).

a widespread breakdown of spatial and temporal boundaries between home and work.

We next turn to the more recent and specialised practice of using an 'app' on a smartphone or other electronic device to notify workers when work is available for them, often seen as a quintessential feature of 'just-in-time' working. Here too, as can be seen in Figure 4, the use of this practice rises with the intensity of crowdworking: between 61% and 74% of weekly crowdworkers use such apps, compared with 53%–63% of all crowdworkers and 8%–15% of non-crowdworkers. Once again, crowdwork can be seen as positioned at the more intensive end of a spectrum which also includes non-crowdworkers. At least a quarter of frequent crowdworkers and approximately half of all crowdworkers do not use such apps, while a small, but significant, proportion of non-crowdworkers are subjected to the same form of just-in-time discipline in the context of other forms of employment.

Finally, we focus on another electronic tool for the remote management of workers: the use of apps or platforms for logging working hours, also shown in Figure 4. This displays a similar picture. Around three quarters of frequent crowdworkers (ranging from 69% in the Netherlands to 75% in Germany and the UK) use such tools, as do 60%–70% of all crowdworkers. Among non-crowdworkers, the proportion ranges from 8% in Germany to 24% in Sweden. Again, it is evident that this practice is prevalent right across the workforce, although found more frequently among crowdworkers.

In other words, the practices used in the 'platform economy' can be seen as extreme cases of much more widespread forms of work organisation. Having to be available to check emails or respond to text messages from home, being summoned to work at short notice by an 'app' and having to log one's progress electronically are becoming increasingly prevalent features of employment right across the labour market in a development that has been dubbed 'logged labour' (Huws, 2016b).

The 'logged' workforce

We now look at the characteristics of the larger iceberg of which crowdwork represents the tip. Across the workforce as a whole in the four countries studied, between 34% (in Germany) and 53% (in Sweden) of adults in work send or receive work-related email from their homes with similar proportions (ranging from 29% to 53%) communicating in this way with employers or clients by text message. This represents an estimated 16 million people in the UK, 16 million in Germany, 5.5 million in the Netherlands and 2.8 million in Sweden, of whom 3 million are crowdworkers in the UK, 5 million in Germany, 800 thousand in the Netherlands and 900 thousand in Sweden. Crowdworkers can thus be seen to represent a *minority* of this bigger teleworking workforce, which is very large indeed.

Narrowing the focus down to practices which are more closely associated with on-line platforms, we looked at those workers using apps for summoning them to work or for logging their hours. Here, we found that across the workforce as a whole, between 19% (in Germany) and 32% (Sweden) use apps in this fashion. This represents 7 million people in the UK, 7 million people in Germany, 2 million people in the Netherlands, and 1.5 million people in Sweden. Of these, crowdworkers account for 2.5 million people in the UK, 4.3 million in Germany, with 630,000 crowdworking app users in the Netherlands and 400,000 in Sweden. Although, as would be expected, the usage of such apps is smaller in percentage terms across the population as a whole than among crowdworkers, when we look at the actual numbers of 'regular' workers managed by these apps it is clear that they considerably outnumber the app-using crowdworkers: for every crowdworker using such apps there are (depending on country) two or three other users who are *not* crowdworkers.

National differences cannot be understood purely as a function of the use of digital technology and platforms. The use of apps for notifications and logging of work and the use of emails and texts by employers varies from country to country. For instance,

Sweden has a relatively low frequency of crowdworkers, but a high frequency of app use and electronic communications outside of working hours. Germany has the lowest rate of app use, but is somewhere in the middle in terms of crowdwork frequency.

Breaking these figures down by age shows that they are most prevalent among the young. Even when controlling for gender, country and crowdworking status, working people under the age of 40 were much more likely to use apps for receiving notifications of available work and logging their work than working older respondents. (The odds ratio for either app was 1.57, which means that the odds of using either type of app were over 50% higher for younger respondents; the odds ratio for using both apps weekly was 1.67, meaning the odds of young people using both apps were about two-thirds higher than for older respondents). There were no significant differences in terms of email use or instant messaging—practices which have spread across all age ranges. The young profile of the more specialist app users suggest that these practices will increase over time; with new labour market entrants be increasingly expected to use them while the earlier adopters age.

Conclusion

What do these results tell us about the standard employment model in Europe?

First, they caution us against drawing sharp differentiations between ‘typical’ and ‘atypical’ types of employment, let alone a binary distinction between a ‘salaried’ and a ‘precarious’ (Standing, 2011). Rather, these results suggest that paid work is spread across a variegated spectrum in which there is a complex interaction between different kinds of employment status and different forms of work organisation, shaping a reality in which it might be more appropriate to speak of degrees of regularity and precarity. Further research on the changing lineaments of these interactions between work organisation and contractual status could build useful on analyses of data sources like the European Working Conditions Survey (see, for example, the insightful analysis of varieties of self-employment by Vermeylen *et al.* (2017).

Official EU statistics suggest that the majority of employment in Europe remains ‘standard’ (European Commission, 2017: 14) although non-standard employment is growing rapidly (from 23% among 25–39-year-olds in 1995 to 32% in 2016) and could become a majority of all employment by 2030 if present trends continue (*Ibid.*). Our results add weight to the evidence from this and other sources that a general precarisation of employment is taking place, and growing rapidly. In 2015, the International Labour Organization reported ‘a global shift away from the standard employment model, in which workers earn wages and salaries in a dependent employment relationship *vis-à-vis* their employers, have stable jobs and work full time. In advanced economies, the standard employment model is less and less dominant’ (International Labour Organization, 2015:1). Even within standard employment, the proportion who are on part-time or temporary contracts now accounts for nearly six of 10 workers (*ibid.*: 1). Meanwhile, the numbers who are not on standard employment contracts continue to rise. In the UK, for example, those on zero-hours contracts grew by three-quarters of a million between 2006 and 2016 while workers on temporary contracts grew by over 200,000 in the same period (Booth, 2016).

However, our results suggest that contractual status alone is not a reliable indicator and that it is necessary to probe deeper into the conditions of ‘standard workers’ to examine the extent to which their work is actually structured by the norms that supposedly underlie their standard contracts (a fixed working week with clear spatial and temporal boundaries between work and non-work and clear job descriptions that specify when and how work is to be carried out).

Our evidence suggests that, while crowdworkers may represent an extreme example of ‘logged labour’,⁶ expected to be available at any time to perform a specific task, their situation is by no means exceptional. Between a third and a half of non-crowdworkers now check their emails from their homes, suggesting a widespread blurring of the spatial and temporal boundaries of the working day. A smaller

minority (ranging from one in ten to one in 20 of the non-crowd workforce) are also expected to respond to apps telling them when to report for work, while between 8% and 24% use an app to log the work they have done. While further qualitative research will be required to investigate these patterns in greater depth, this suggests not only that 'standard' workers may be expected to work beyond normal hours but also that they are increasingly managed by performance.

Our results also make it apparent that high proportions of the labour force are supplementing the wages from their main employment with income from other sources, of which online platforms form one among several. In the process, they are stepping outside the boundaries of their designated occupation, taking on a multiplicity of economic roles that may range from petty trade to renting out property to providing personal services. Again, further qualitative research will be required to investigate the extent to which this is a new and growing phenomenon. However, it does cast doubt on the assumption underlying the standard employment model that it is the norm for workers to rely exclusively on their employer for their incomes. It also illustrates a general blurring of the boundaries that demarcate a particular 'job'. If we take a job to mean an activity linked to a clear occupational identity that is carried out by employees during fixed, specified hours, normally on the employer's premises, and providing all of the worker's income, we can see that several of these defining features have been eroded for a substantial proportion of the population.

Finally, the conclusion that an erosion of the standard employment model is taking place alongside the spread of new management practices also suggests a diminution of the differences between distinctive national models. One of the most striking feature of these results is the similarity between four countries with very different welfare regimes and 'varieties of capitalism' (with Germany regarded by Esping-Andersen (1990), as a classically 'corporatist' model, Sweden as 'social democratic', the UK as 'liberal' and the Netherlands as a social democratic/corporatist hybrid). Whatever is driving these patterns of crowdworking, it seems unlikely that these drivers are structurally embedded in specific national institutional frameworks.

We must conclude that the growth of crowdwork practices is related to broader international trends that may be spreading below the radar of nationally specific regulations. If this is the case, large questions are raised for national policy-makers about what kinds of regulation and social protection systems will be appropriate for the just-in-time labour markets that appear to be emerging in the 21st century.

Notes

1. The term 'decent work' has been adopted by the International Labour Organization (ILO) to frame a broad policy agenda for improvement of employment standards (see <http://www.ilo.org/global/topics/decent-work/lang-en/index.htm>). While not identical in meaning to the concept of 'standard employment' it overlaps with it in many respects in practice.
2. These—and their limitations or inadequacies—are discussed at length in Huws (2015) and Huws, Spencer, Syrdal & Holts (2017).
3. Additional co-funding for national surveys was provided by TNO in the Netherlands, Unionen in Sweden and ver.di and IG-Metall in Germany.
4. The main differences between the four national samples relate to the upper age ranges questioned, following the normal practices of national omnibus surveys in each country. In each of the four countries, the sample included people aged 16 and over, but in Sweden the upper cut-off point was 65 years of age, whereas this was 70 in Germany and the Netherlands and 75 in the UK.
5. Figures have been presented without confidence intervals because to include them on every occasion would make this paper unwieldy to read. For those percentages based on the whole sample within a country, all confidence intervals would be within approximately $\pm 2.2\%$ of the figures quoted. For percentages based on crowdworkers alone, confidence intervals would be within $\pm 5.0\%$ to 7.1% depending on the country (larger numbers of crowdworkers giving narrower

intervals). For percentages based on at least weekly crowdworkers alone, confidence intervals would be within $\pm 5.8\%$ to 10.0% depending on the country.

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