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Decent Work and the Digital Gig Economy:
A Developing Country Perspective on Employment Impacts and Standards in Online Outsourcing, Crowdwork, etc

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2017

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Decent Work and the Digital Gig Economy: *A Developing Country Perspective on Employment Impacts and Standards in Online Outsourcing, Crowdwork, etc*

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2017

Abstract

This paper presents a review of current evidence and ideas relating to the digital gig economy (DGE): contingent (task- or project-based) intangible work delivered digitally and done for money, organised via online outsourcing platforms that are marketplaces bringing together buyers and sellers. Examples of such platforms include Freelancer, Upwork, Amazon Mechanical Turk and Zhubajie/Witmart.

While the paper takes a particular interest in the perspective of workers in developing countries, most of its findings will apply globally, and many will apply to the broader gig / sharing / platform economy.

This document aims to be comprehensive and so readers are directed to particular items of interest, posed in terms of question:

- What are the key definitions and terminology: see Box 1
- How big and how fast-growing is the DGE sector: see start of Section B
- What are the positive impacts of DGE work: see Section B1
- What are the negative impacts and problems of DGE work: see Section B2
- Why intervene to improve the digital gig economy: see Section B3
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- Can existing codes and standards be used in the digital gig economy: see Section C2iii
- What stakeholder-specific motivations and barriers will shape application of decent work standards: see Section C2iv
- What should be the next steps in terms of action and research: see Section D

Other questions addressed include:

- What are the problems with the current evidence base: see Box 2
- How can DGE problems and solutions be represented graphically: see Box 3
- What should be the aim of DGE intervention: see Section C2i
- Should decent work standards apply broader or narrower than just the digital gig economy: see Section C2ii
- What do individual items of literature have to say about problems, recommendations, proposals and codes for the digital gig economy: see Appendices

A. Introduction

Being largely hidden from public view, the size of the digital gig economy (see Box 1 for terminology) is rather a matter of guesswork. However, rough estimates (see below) suggest this is a sector worth nearly US$5bn and involving around 60m workers in the global South. Beyond these approximations, there is general agreement that online labour is growing fast as an economic phenomenon, and that it will thus be an increasingly important model in the future of work and the future of economic development.

As summarised below, online labour is associated with both positive and negative outcomes at micro and macro level. Concern about the negative outcomes has led to both calls for interventions and actual interventions by various stakeholders. Many of these come in the form of proposals, guidelines and codes all of which aim to alter the behaviour of key digital gig economy (DGE) actors. They can often be thought of as ethical standards of some sort given they are promoted in the name of fairness, justice, etc; but they also fall under the heading of "decent work". The aim of this paper is to systematically review both impacts and recommendations for the digital gig economy, in order to create a union list of standards; answering a call for more work on DGE interventions (Beerepoot & Lambregts 2015). This will be done particularly from the perspective of DGE workers in developing countries, given that they represent the great majority of such workers.

The evidence base and methodology for this paper is a review of literature. The initial search – undertaken via Google Scholar in mid-2017 – sought to circumvent the problem of multiple terminologies by using the name of the largest platform, Upwork, and "developing countries" to identify relevant sources. From these there was a snowball citation search both backwards and forwards to identify relevant items. In addition, more general items were sourced through search for material on codes and standards in the digital gig economy, on the foundations of decent work, and on broader ethical standards.

Following this Introduction, the paper has two main sections. The first reviews the employment-related impacts associated with the digital gig economy; both the positive impacts and also the problems. The latter are then reviewed in order to understand what rationale – if any – exists for intervening in pursuit of better outcomes for DGE workers. The second main section reviews recommendations, proposals and codes and synthesises these into a union set of "decent digital work" standards that could be applied. It then investigates key issues in the application of such standards: their purpose, their scope of application, the possibility of using existing codes or standards, and the motivations and barriers that will shape interventions in practice. A short final section outlines next steps for action and research.

BOX 1: WHAT'S IN A NAME – GIG ECONOMY TERMINOLOGY

Heeks (2017) analyses the many different terminologies that can be used in this domain and concludes that the prime term from a work and labour focus would be "online labour"; from a client-side focus would be "online outsourcing" and as an overall domain would be "(digital) gig economy" (see Figure 1). Here, online labour is defined as contingent (task- or project-based) intangible work delivered digitally and done for money, organised via online outsourcing platforms that are marketplaces bringing together buyers and sellers (combining definitions from Horton (2010), Lehdonvirta et al (2014) and Graham et al (2017b)).

Schmidt (2017) provides a comprehensive taxonomy of online labour, and divides it into two types:

- **Crowd work** where tasks are not given to a specific individual and which is further sub-divided into *microwork* (tiny units of piecemeal task as for Amazon Mechanical Turk or Crowdflower) and *contest-based* (many compete for the task but "only one result is used and paid for" as for 99designs). Examples of microwork include data entry, tagging or interpretation of content, completion of surveys, and finding of information (Berg 2016). Examples of contest-based work include creation of a design such as a company logo.
- **Online freelancing** where a more substantial task is given to an identified individual as for Upwork or Freelancer. Examples of the variety of online freelancing work include software development, web development, translation, transcription, data analytics, design, administrative support, and sales and marketing (Agrawal et al 2013, Margaryan 2016).

In practice, divisions are blurred and it probably makes more sense to think of a continuum of online labour from microwork to online freelancing.

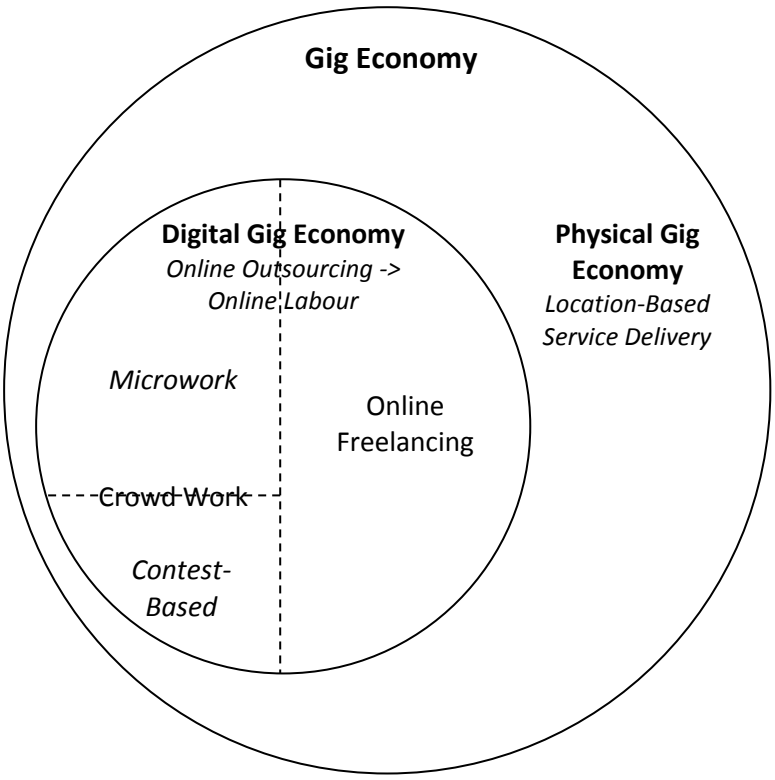

Figure 1: Categorising the Gig Economy

Note that online labour represents the digitisation of both work and work organisation (Huws 2017). It is therefore separated from other types of gig economy work where only the organisation of work is digitised: in these cases, the service allocated via a platform is tangible and delivered to a client in a physical location. Often referred to as the on-demand economy/work – though here the term "physical gig economy" is used – this covers well-known platforms such as Uber, Airbnb, TaskRabbit, etc. The overall superset of gig economy activity increasingly uses the term "platform": hence, platform economy and platform labour.

B. The Digital Gig Economy and its Impacts

Any statistics cited here must be taken with a large pinch of salt because of the poor and limited state of the evidence base (see Box 2). We can say that the overall size of the digital gig economy was estimated at US$2bn in 2013 growing to US$4.8bn in 2016 with Upwork, Freelancer, and Zhubajie/Witmart said to make up about half of the total and online freelancing much larger than microwork (Kuek et al 2015). Emergence of the sector has been driven by the platforms' combination of competitive logic and technical innovation, which they have used to win market share from existing IT outsourcing but also to generate new forms of outsourcing (Huws 2017). Growth has been driven on the supply side by competitive logic of clients seeking and obtaining three key benefits: lower costs (financial and time), greater flexibility, and access to a wider skills pool (i.e. higher quality workers) (Bergvall-Kareborn & Howcroft 2014, Corporaal 2017a). And growth has been driven on the supply side and intermediary (government, donors) side by the positive benefits that online outsourcing can deliver (see Section B1).

As a result, growth rate data includes 31% per annum growth in revenue and 35% per annum growth in registered worker numbers on Upwork (Codagnone et al 2016), with equivalent figures for Zhubajie being 65% and 35% (To & Lai 2015). From the client side, a 14% annual growth in tasks posted is registered across five main platforms (Kassi & Lehdonvirta 2016), and 85% of global executives indicated plans to grow the use of online freelancers (Accenture 2017). Finally, development agencies and developing country governments are launching online outsourcing initiatives to provide access particularly to marginalised or underemployed groups such as women and young people (Malik et al 2017).

In terms of worker numbers, there were an estimated 45m registered workers on Western-based online outsourcing platforms in 2015 (Codagnone et al 2016)[1]. Of these one can estimate based on survey ratios (Agrawal et al 2013, Lehdonvirta et al 2014) that 36m are from low- and middle-income countries with particular concentrations in India, the Philippines, Pakistan and Bangladesh and limited involvement – though still some presence – from sub-Saharan Africa and Latin America. To these one can add an estimated 25m registered workers on Chinese-based platforms (so the global total was up to 70m in 2015; around 2.3% of the global workforce) (To & Lai 2015). With at most around 10% of registered workers considered active (Kuek et al 2015), that would suggest 6.1m active workers in low- and middle-income countries. With India and the Philippines both estimated to make up just under one quarter of the overall global totals for Western-based platforms, this would translate into roughly 10m registered and 1m active workers in each country: 2% and 0.2% of the Indian labour force respectively; 22% and 2.2% in the

[1] By far the largest of the platforms are Freelancer (18m registered workers), Upwork (10m), Crowdsource (8m) and Crowdflower (5m) (Codagnone et al 2016). In addition, there are Chinese platforms: Zhubajie / Witmart (10m), Epweike (6m), Taskcn (3m) and 680 (3m) (To & Lai 2015), and one can estimate these would have added c 25m to the total workforce in 2015. Note, that totals are likely to be an overestimate as workers may well be registered on multiple platforms but will be an underestimate for 2017 given high growth rates; for example, by 2017 Zhubajie/Witmart was estimated to have 15m registered workers (Li et al 2017).

Philippines; with the equivalent figures for China being 3.1% and 0.3% (World Bank 2017)[2]. Of these active workers in developing countries, one can estimate that something like 30-50% – up to three million – have online labour as their primary source of income (Khanna et al 2010, Berg 2016, Brawley & Pury 2016).[3]

The actual size of the digital gig economy is therefore relatively limited as has been its impact on the wider economy and labour market (Brinkley 2016, Codagnone et al 2016). Its demand for attention then comes from two sources: first, its representation of a new model of employment (albeit one that continues and amplifies longer-standing trends); and second, its high growth rates which mean it will have an ever-increasing economic, social and political impact (Schmidt 2017).

Given this emergent importance, the current evidence base was reviewed to understand both the positive impacts of online labour, but also the problems that are arising. This review – reported next – also identified a series of challenges with the current evidence base (see Box 2).

BOX 2: DIGITAL GIG ECONOMY EVIDENCE BASE CHALLENGES

There are two sets of challenges identified here. First, there are challenges that hamper the current evidence base:

- Paucity: in general terms, evidence on the impact of online labour is lacking. The recency of the phenomenon is one explanation[4], meaning that there is an absence of evidence on the wider and longer-term impacts of this form of employment (Codagnone et al 2016). Quantitative data is particularly lacking, and data on work in developing countries is particularly lacking.
- Stakeholder Skew: where field evidence on the digital gig economy has been gathered, the great majority of respondents are workers; probably because they are relatively easy to contact. Other stakeholders are sometimes included but only in small numbers, and – partly due to their invisibility – clients and platform representatives are particularly rarely heard from. Employees of platform firms are never heard from even though digital firm staff have been shown in other contexts to be an important driver of adoption of ethical standards (Heeks et al 2015).
- Labour Skew: where evidence from online workers has been gathered, the great majority of respondents are active workers; probably because they are relatively easy to contact. Those who were trained for online labour but never registered on a platform; those who registered but never found work; those who registered and found some work but then gave up – these constituencies are rarely heard from[5]. And when active

[2] In comparison it is estimated that 1-2% of US, UK and Swedish labour forces have overall (i.e. digital or physical) gig economy work as their main employment, 3-4% work regularly in this sector, and 10% have worked at least once (Codagnone et al 2016).

[3] One must therefore reject the discourse of "pin money" or "playbour" sometimes associated with the digital gig economy (Berg 2016, Berg & De Stefano 2017).

[4] Key dates include the launch of Elance in 1999, oDesk in 2003 (they merged in 2013 and became Upwork in 2015) and Amazon Mechanical Turk in 2005. However, real growth of online outsourcing platforms is dated from 2008 (Huws 2017), and it was some way into the 2010s before appearance of academic research really kicked in.

[5] Malik et al (2017) for example divide those associated with online outsourcing initiatives in Pakistan into four categories: Sinkers (who are trained and registered but never move into online work; these are the majority;

workers are heard from, they are often more-experienced workers given studies identify the Pareto-type distribution in work with, for example, 10% of workers on one platform undertaking 80% of the work (Codagnone et al 2016).

- Platform Skew: though not subject to a systematic analysis, there looks to be a lot of data relating to particular platforms; out of synch with their actual importance. For example, Google Scholar shows roughly ten times more papers on Amazon Mechanical Turk than on oDesk / Upwork[6]; yet the latter appears to have around twenty times more workers than the former (*ibid.*). The same is true of Chinese platforms. In 2015, Zhubajie/Witmart, Epweike, Taskcn and 680 had 22m registered workers; compared to c.40m on the top four Western platforms (To & Lai 2015)[7]. Yet they were mentioned in only one of the many general sources on the digital gig economy (Kuek et al 2015).
- Cross-Sectionality: because of the relative recency of online labour, most studies lack a sense of longitudinal dynamics in what is a constantly-changing context. For example, reports on payment levels may be unduly optimistic if they do not account for a trend of increasing (over-)supply of labour (Graham et al 2017b); conversely reports on conditions of work may be unduly pessimistic if they do not account for improvements made over time by some platforms (such as oDesk's introduction of a minimum hourly rate: currently US$3 on Upwork).

Second, there are challenges because of the way in which the evidence base has been presented or interpreted:

- Optimism: some sources appear unduly optimistic about the impact of online labour. For example, Accenture (2017) makes no mention of any downsides and instead extols the cheaper, faster, more flexible labour force that online labour platforms can deliver. This approach might be associated with a pro-business, neo-liberal perspective.
- Pessimism: some sources appear unduly pessimistic about the impact of online labour. For example, Graham et al (2017b) dedicate one column to the positive value of online labour and three-and-a-half pages to negative impacts. This approach might be associated with a pro-labour, neo-Marxist perspective.[8]
- False consciousness: the difficulty of correctly interpreting evidence from workers. This applies particularly to those in developing countries where, as a generalisation (Kuek et al 2015, D'Cruz & Noronha 2016), workers a) are fairly happy about online labour in absolute terms, seeing the positives outweighing the negatives, and b) are happier in relative terms about online labour than their counterparts in the global North. As discussed in more detail below, if one takes this at face value it provides limited impetus for reform of the digital gig economy. Such impetus can only be derived if one supra-

for example, estimated as 60% of those attending one training programme); Strugglers (who register and are seeking work but not able to get it e.g. due to the Catch-22 that they need a reputational profile to get work but can't get a reputational profile without work); Survivors (who occasionally get work e.g. one interviewee who had got one job out of more than 300 applied for); Swimmers (who are making a living; typically US$250-300 per month; some swimmers graduate on to work for clients outside the platform).

[6] 22,500 sources for "Amazon Mechanical Turk" (an underestimate given some sources use variations of this term), and 2,443 for "oDesk" or "Upwork" (eliminating duplicates).

[7] Noting the Chinese platforms include some (minority) proportion of physical gig economy work, and some use the contest-based model of outsourcing (Kuek et al 2015, To & Lai 2015).

[8] D'Cruz & Noronha (2016:60) note that "Through the lens of Western scholars, freelancers engaged in crowdsourcing are precarious workers providing immaterial labour", and contrast this with the much more positive views of Indian freelancers themselves.

interprets the evidence by attaching to the respondents a state akin to false consciousness in which they are unaware of the true nature of their labour, and of its wider and longer-term impacts, as per suggestions of "the gains blinding them to . . . the challenges" (*ibid.*:60).

- Universalism: some sources do not differentiate the context of global South and global North. In particular, they do not recognise that labour markets and labour market institutions in the global South are typically quite different to those in the global North (*ibid.*). This impacts the comparative benchmarks against which workers judge online labour. Two other types of universalism can also be seen. First, a universalisation of workers not geographically but in occupational terms. More differentiated evidence (Lehdonvirta 2016) suggests different impact experiences of, for example, online freelancers vs. micro-workers, and those using the platforms as a main source of income vs. those supplementing other income sources. Second, a universalisation of platforms when the organising logics, pay levels, working conditions, etc may differ quite considerably between platforms (*ibid.*).
- Exceptionalism: many sources set the scope of their focus as the gig economy or digital gig economy. But as others (e.g. Aloisi 2015, De Stefano 2015, Graham et al 2017b, Huws 2017[9], Schmidt 2017) have pointed out, what platforms are doing is channel particular forces of late-stage capitalism and amplifying or reproducing much broader trends including casualisation/informalisation of employment along temporal, spatial and institutional dimensions; commodification and outsourcing of work tasks; ICT-enabled globalisation of work; ICT-/algorithm-enabled monitoring and management of work; and liberalisation of the regulation of work. The challenge here relates partly to interpretation of evidence, but more to the scope of recommended interventions; i.e. whether they should apply specifically to the digital gig economy, or be part of a much broader scope. This is an issue discussed further below.

The current paper will not necessarily surmount these challenges, which bring two implications. First, a need for more and better research on this topic. Second, some degree of caution in interpretation of current evidence.

B1. Positive Impacts of Online Labour in Developing Countries

Although they will be impacted by local institutional forces of cultural norms and symbolism, a core impetus for workers to seek work via online labour platforms is that they perceive the benefit/cost ratio to be better than that for alternative employment (if such exists). Most do seem to hold such a perception and there is almost universal reporting, as noted above, that developing country DGE workers are mostly happy with their work. Bearing in mind the Box 2 caveats, some specific positive impacts can be extracted from current literature:

Employment Opportunities. The dominant pattern of DGE work flow is a client in the global North outsourcing online to a worker in the global South. As such, absent the platform,

[9] "Far from constituting a new, discrete 'add-on' to traditional forms of employment and work organization, online platforms represent an extreme form of practices that have been becoming established in mainstream organizations across many sectors of the economy over decades" (Huws 2017:41).

such employment would not have been accessible to developing country workers.[10] At both an overall and specific level, then, online outsourcing provides new employment opportunities for those in the global South (D'Cruz 2017). For those who were unemployed prior to taking up DGE work – estimated as a quarter of developing country workers but at least double that for those with online labour as their primary income source (Berg 2016) – then this provides a livelihood: something they had at least temporarily not been able to access.

Inclusion. Local labour markets in developing countries can often discriminate against or exclude certain categories of worker: those working outside their home country; those without formal qualifications; those with home responsibilities; those with disabilities or health problems; etc (De Stefano 2015, Graham et al 2017a). There are examples of all such workers finding that equivalent institutional barriers did not exist on digital platforms, and that they were able to engage in productive work. This has particularly been reported for women, with developing country participation rates for women undertaking DGE work – while still below those for men – being well above rates more generally for non-agricultural work (Kuek et al 2015, World Bank 2016).

Objectivity. DGE workers make favourable comparisons of online labour with its local, physical equivalents around subjective and perceptual elements. For example, they complain that in traditional local contracting, their expertise and work are not valued (Crosby & Rina 2017), that there is a lack of support or any basis for redress in case of problems with a client (D'Cruz & Noronha 2016), and that allocation of work is based on personal connections and managerial preferences rather than merit (Nandi 2014, D'Cruz & Noronha 2016):

> "Culturally, participants' experiences on Elance-oDesk contrast with traditional Indian social dynamics. Whereas Indian society is feudalistic, privileging personalised, identity-based relationships where hierarchy and sycophancy operate and favouritism and network-linked exchanges predominate ... crowdsourcing is seen as both emphasising merit, where competence and performance are accorded primacy, and greatly levelling client-freelancer differences through the system of mutual feedback" (*ibid.*:59)

Platform work also removes many cues that are bases for discrimination in physical work including disability, accent, mode of dress, age and more (De Stefano 2015).

Reasonable Earnings. There are several reports that include details about pay for online labour: Khanna et al (2010), Agrawal et al (2013), Kuek et al (2015), Berg (2016) and Martin et al (2016) to name but a few. An overall summary points to three features:

- Developing country workers are on average paid less than those in the global North; typically between one-third and two-thirds and accounted for by lower reputational profiles and/or lower pricing.
- Developing country workers earn far more in relative terms than those in the global North; typically 10-20 times the local minimum wage whereas those in the North are on average paid around minimum wage (the average of course hiding much variation[11]).

[10] Evidence from the client side is that in the absence of the platform, the work would either have been done in-house, or by a local worker, or not done at all (Agrawal et al 2013).

[11] For example, figures from Lehdonvirta (2016) show the standard deviation of pay to be 85% of the mean.

- Full-time developing country workers earn at or above a typical salary: for example Kuek et al (2015) report US$200-750 per month, and Agrawal et al (2013) report workers earning more than they would from alternative possible employment.

In comparison to local labour markets, payment may also be less delayed and more certain when undertaken via a digital platform (D'Cruz & Noronha 2016, Crosby & Rina 2017).

Career Development. Online labour often enables workers "to renew existing skills through practice, to discover and utilise latent skills and to develop specialist skills" (Barnes et al 2015:28). It builds new knowledge, and it may also enable workers to build a network of contacts (Malik et al 2017). It can therefore act as the foundation for, or a stepping-stone in, a career trajectory. Though these trajectories have yet to be quantified or examined in the long-term, there is consistent evidence of career progression:

- Beyond online outsourcing: those who move on to other forms of work, leveraging the skills and experience they have gained in online labour (D'Cruz & Noronha 2016).
- Through online outsourcing: those who build a client base and then take those clients off-platform and work for them direct (Malik et al 2017).
- Within online outsourcing: those who build an intermediary role for themselves, using their reputational profile to take on work which they then sub-contract to other workers either on- or off-platform (Graham et al 2017a).

Flexibility. Because of its global and virtual nature, digital gig economy work can be undertaken relatively flexibly in terms of timing and location; much more so than the vast majority of work available in developing countries (D'Cruz & Noronha 2016). Locational flexibility has included the ability to work from home, even where home is a relatively remote village (Crosby & Rina 2017). Reflecting this, flexibility is sometimes identified by workers as the foremost benefit of online labour (Agrawal et al 2013).

Travel/Environmental Cost. With workers typically working from home, the digital gig economy is not generally associated with travel. Depending on the alternatives, workers may save travel time and costs, and there may also be an environmental saving of carbon emissions (albeit remembering that use of ICTs is not carbon-free) (Fidler 2016).

Summary. In sum:

> "The core theme that emerged, encapsulating participants' experiences, was that of 'positives outweighing negatives'. The freelancers on Elance-oDesk we interviewed emphasised multiple gains, including employment opportunities, income, skill utilisation and enhancement, career progression, emphasis on merit, international exposure, flexibility and protection of workers' interests provided by the platform in relation to minimum wages, assured payments for work undertaken, authenticity checks, behavioural pointers and mechanisms for redress. Participants reported high degrees of satisfaction linked to these benefits to the extent that the challenges associated with their work, though acknowledged, were regarded as offset." (D'Cruz & Noronha 2016:48)

B2. Problems of Online Labour in Developing Countries

When successful, digital systems – including digital platforms – disrupt. Online labour platforms disrupt clients, competitors, workers, and "the social state and its welfare systems" (Schmidt 2017:9). While it is perfectly reasonable to allow what Schmidt (*ibid.*) calls "unregulated sandboxes" to try out new innovations, once problems become both evident and scaled, it is time for intervention to be considered. Online labour platforms are already well past this stage. As explained in Box 3, digital gig economy problems and solutions were classified into three overarching domains, and then into a set of specific categories within each of the domains. Analysis of the literature is presented in detail in Appendix 1, with an overview provided next, albeit the caveats of Box 2 must run alongside.

BOX 3: CATEGORISING DIGITAL GIG ECONOMY PROBLEMS AND SOLUTIONS

How should the experienced problems of DGE work and their potential solutions be categorised? This paper used a two-way process. First, an inductive schema was developed from the literature on impacts and solutions; gradually being revised and extended as new items of literature were incorporated. This was then compared with deductive frameworks; of which the eleven-element ILO (2013) schema for "decent work" was by far the most relevant, leading to further revision of the inductively-derived framework. To clarify the ILO framework, it was sorted into three main domains under which twelve elements[12] were subsumed (see Figure 2).

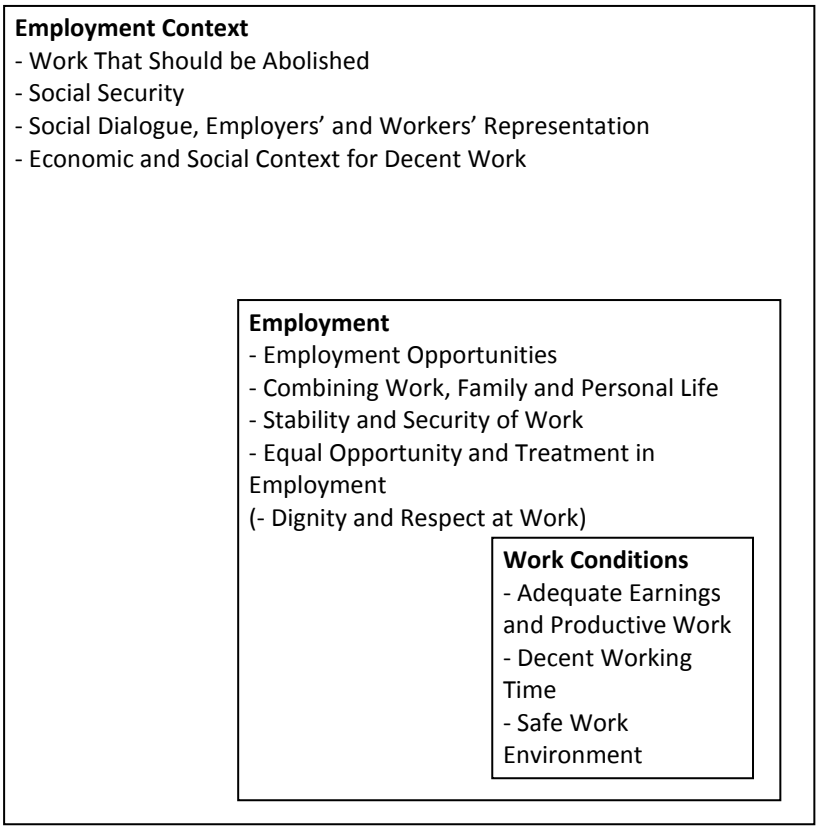

Figure 2: Domains and Categories of Decent Work

[12] Following Anker et al (2003), who research the measurement of decent work, a twelfth element was added; that of "dignity and respect at work", though this is not part of the official ILO list.

The final categorisation framework for the digital gig economy is substantially similar (see Figure 3). The main differences are:

- Absence of "work that should be abolished" since, although occasionally mentioned, there is no evidence yet of child or forced labour in the digital gig economy.
- Absence of "combining work, family and personal life" because this did not appear in the literature, separate from working hours issues.
- Separation of "freedom of association" and "social dialogue/collective bargaining" because a number of gig economy sources follow the earlier ILO agenda (e.g. Ghai 2003) which separates these two.
- Context specified into platform governance, accountability and other legislation/rights because these contextual issue arose in the literature.
- Employment opportunities understood both in the immediate term but also in the longer-term of career development, with the digital gig economy not yet seen as the context for a career (as opposed to just a job).
- Security of work understood especially in terms of employment status, with widespread use of "independent contractor" rather than "employee" status being a major bone of contention for DGE work. See also Box 5.
- Dignity and respect specifically including issues of data privacy and resolution of disputes between workers and platforms or clients.
- Addition of "work process" because many complaints and concerns of DGE workers relate to this.

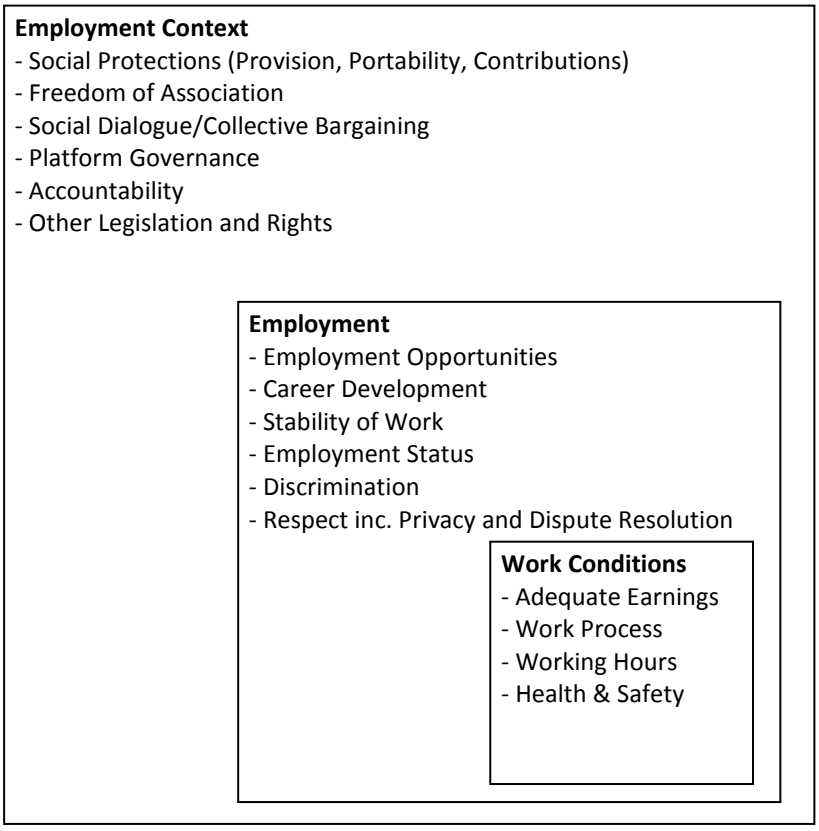

Figure 3: Domains and Categories of Decent Work in the Digital Gig Economy

Work Conditions. The majority of concerns about the negative impacts of online labour fall into this domain, which mainly deals with issues relating to the conduct of specific tasks; in particular:

- *Adequate Earnings*: there are complaints that payments are sometimes late in arriving, or that they are unfair by comparison with the amount of effort or skill expended (e.g. TBR 2013, Martin et al 2016). This may include concerns – more often expressed by researchers than recognised by the workers themselves – about unpaid time searching and bidding for work, learning new skills, providing feedback ratings, and on "interpretive labour": unpaid time spent trying to understand and accommodate client needs, including time spent on forums seeking information and support (Berg 2016, Martin et al 2016)[13]. The technology, telecommunications and data costs of accessing digital work must also be borne. There are many complaints that pay is too low. When analysed, this generally means that pay levels are seen to be below minimum wage: as noted above this is largely an issue for those based in the global North, not workers in developing countries (Berg 2016).
- *Work Process*: it is this that encompasses the greatest number of concerns, especially centring on lack of information and poor communication. This includes: lack of broader information about who the client is and what the purpose of the task is (particularly an issue with micro-tasking on Amazon Mechanical Turk (AMT)) (e.g. Bergvall-Kareborn & Howcroft 2014); a lack of information about the tasks such as what exactly is to be done and to what standard (e.g. Brawley & Pury 2016); and poor communication from clients and platforms including poor feedback on task performance (e.g. TBR 2013). Then, applying less to individual tasks and more to the overall organisation of work, there are worker complains about opacity of procedures including rejection of work, suspension from the platform or account termination, and progression to higher worker grades for those platforms which have this (e.g. Martin et al 2016). Few sources investigate further to analyse what problem these informational issues actually lead to for the worker, but a few can be hypothesised from the sources above and others (D'Cruz & Noronha 2016, Graham et al 2017a): these are a source of job dissatisfaction and stress, they lead to sub-optimal task performance (with pay and reputational knock-ons), and they require additional time. They also lead workers to perceive procedural discriminations even in the absence of hard evidence.
- *Working Hours*: especially for those in Asia, the North-South pattern of trade means that new jobs may be posted in the early hours of the morning, and thus work – at least bidding – must be undertaken at that time (D'Cruz & Noronha 2016, Martin et al 2016). As with work process, there is little analysis of why this is a problem; and one must infer that it interferes with work-life balance or, for those with other jobs, with work-work balance. The same might be true of overall working hours but there is little direct evidence: full-time developing country DGE workers are reported to average 20-40 hours per week (Kuek et al 2015, Brawley & Pury 2016), which is not excessive. Berg & De Stefano (2017) report 40% of workers working seven days a week but their overall hours are unclear. Only Margaryan (2016) reports 25% working more than 40 hours per week.

[13] Berg (2016) estimates that one quarter of DGE workers' time is spent on search and preparation. However, this therefore appears to exclude the other elements of unpaid time – learning and interpretive – and is therefore likely to be an underestimate. On the former, Margaryan (2016) estimates that half of DGE workers do free online training courses to build work-relevant skills, and one third do paid-for courses.

- *Health and Safety*: only one instance of this was raised (Schmidt 2017) in relation to dealing with violent and pornographic content. However, the few descriptions of such work for social media firms (Chen 2014, Solon 2017) do not place it within the orbit of the digital gig economy: workers are either employed direct by the social media firms or by sub-contractor firms and platforms are not involved.

Employment. This domain seeks to deal with the wider and longer-term circumstances of working for a DGE platform, though this overlaps with work conditions in some of the experiences around discrimination and respect:

- *Employment Opportunities*: only one source (Martin et al 2016) mentioned the challenge for developing country workers of gaining access to digital gig economy work opportunities. Yet, this is an important issue if such opportunities are – as hoped – to be extended to marginalised groups in the global South. Barriers to employment include skills (such as English language and technical skills); knowledge (such as awareness of the existence of DGE work and of how to access digital platforms); and technical infrastructure (both the wider level such as reliable electricity and broadband telecommunications, and the specifics of devices suitable for online labour) (Malik et al 2017).
- *Career Development*: as noted above, recency of the digital gig economy means we have limited sense yet of the relation between online labour and career development. But it does appear that the majority of DGE workers do not make a career out of it (*ibid.*), and that others find themselves unable to upgrade to higher value-added work (Graham et al 2017a). For those who do wish to build a career, they can find themselves constrained by the platform-specificity of their profile (Aloisi 2015). The portfolio of ratings, feedback and tasks completed cannot readily be checked by potential employers, or moved to another platform.
- *Stability of Work*: the recognised flipside of flexibility is instability (Codagnone et al 2016. Fidler 2016). There is no guarantee that jobs matching a worker's experience will arise on a platform, nor is there any guarantee that they will be successful in bidding for such work. As a result, the flow of work (and hence payment) can be volatile and uncertain. In addition, for many workers there is an insufficiency of work: 90% of DGE workers reported they would like to be doing more work (Berg 2016); indeed, under- and unstable employment appear to be two main complaints of developing country workers.
- *Employment Status*: not an issue that appears to be raised by workers themselves, but noted by analysts that the status of most DGE workers as independent contractors rather than employees removes from them many labour rights and social protections (Aloisi 2015, De Stefano 2015). For further discussion, see Box 5 below.
- *Discrimination*: more is written about this than any other employment domain issue. There are instances of discriminatory behaviour. For example, job postings that discriminate on the basis of national origin or gender (Beerepoot & Lambregts 2015), a gender pay gap between men and women which at least partly seems to relate to women being less successful at pay negotiation (Dubey et al 2017), or individual examples of racism when clients make direct, off-platform contact with workers (D'Cruz 2017). The job posting behaviour may derive more from ignorance of clients about worker capabilities, than pervasive and purposeful categorical antipathies (Graham et al

2017a)[14]. And on the side of workers, negative perceptions seem to run ahead of realities, quite possibly due to the opacity of procedures noted above: a vacuum of understanding into which pre-conceptions can run. For example, workers perceive discrimination against those from the global South in selection by clients but Graham et al (2017b:8) report "our quantitative analyses did not uncover evidence of so-called "taste-based discrimination", that is, clients who would devalue workers from low- and middle-income countries regardless of their skill and track record".

- *Dignity and Respect at Work*: this particularly overlaps into the task-specific domain of work conditions, and largely arises from the livelihood experiences of DGE workers. It covers concerns about poor treatment by clients in rejecting work or failing to pay for work[15] (Berg 2016, Martin et al 2016), and theoretical (i.e. not-yet evidenced) concerns about the privacy of data about workers (Codagnone et al 2016, Schmidt 2017). And it covers more widespread concerns about the lack of means to resolve problems when they do arise: particularly viewed in terms of the absence of an appeals or independent/alternative dispute resolution mechanism (TBR 2013, Berg 2016, Brawley & Pury 2016, Martin et al 2016, Schmidt 2017).

Employment Context. Much less has been written on issues within this domain, which relate to the even-broader context within which work takes place; albeit still touching the lives of individual workers. Almost all are raised by researchers rather than emanating from the workers themselves:

- *Social Protections*: three authors in the literature review note that the contractual arrangements of DGE workers mean they receive no additional financial benefits or protections beyond their pay (Berg 2016, Codagnone et al 2016, Fidler 2016). This includes no paid leave of any kind, no insurance of any kind, and no longer-term contributions to pension or unemployment funds.
- *Freedom of Association/Social Dialogue*: two authors note the lack of formal worker associations among DGE workers, and a consequent lack of collective bargaining with either platforms or clients (Bergvall-Kareborn & Howcroft 2014, De Stefano 2015). There are a number of online forums and groupings: forums provided on-platform (e.g. Upwork's community forums and groups); off-platform social media groups (e.g. those hosted on Facebook and LinkedIn); and specific portals including discussion forums (both active e.g. TurkerNation, and inactive e.g. WeAreDynamo) and client/task rating systems (e.g. Turkopticon). However, none acts as a formal association or negotiates on behalf of DGE workers. In the global North, there are potential groupings but these are more of a hypothetical fit: the US Freelancers Union covers all freelancers and focuses more on providing services and support to workers-as-entrepreneurs; the UK Independent Workers Union of Great Britain has focused on physical gig economy workers. In the global South, there appear to be only nascent signs of worker associations within the digital economy overall (e.g. Govindarajan 2017), and none specific to the digital gig economy.

[14] Mill (2011) for example provides evidence that clients do discriminate on the basis of worker country of origin but based on their seeing that as a proxy for quality, rather than there being any racial or ethnic discrimination. This is reflected in the disappearance of any such bias for workers with higher reputation rankings.

[15] Including what appears to be occasional cases of deliberate fraud, though much of this seems to occur when clients and workers take tasks off-platform (D'Cruz & Noronha 2016).

B3. Rationales for Intervention in the Digital Gig Economy

In some economic sectors, the nature of employment in developing countries is clearly abusive: workers are forced to work under slavery-like compulsion; their physical health and safety are in continuous danger; pay levels prevent anything but a life in chronic poverty; etc. This is clearly not the case for the majority of developing country DGE workers for whom the "positives outweigh the negatives" quote above holds true. When asked, they can provide examples of concerns and frustrations but in terms of direct negative impacts of their livelihoods there seem to be relatively few. The average full-time worker receives a reasonable wage in return for reasonable hours, without danger to life and limb and with discrimination probably more perceived than real.

From this perspective, then, there is little current evidence for intervention in the digital gig economy. And yet as noted in the next section, there are frequent recommendations and proposals for such intervention, so where would a rationale come from? This is a question not often explicitly asked.

There could be more evidence and rationale for intervention if the boundary was expanded in terms of the scope of work; to cover the whole gig economy by also encompassing the physical gig economy. This is not the focus for this current paper and there appears to be relatively little work on this topic. From what there is (e.g. Hunt & Machingura 2016, Surie & Koduganti 2016) it is not yet clear that the evidence on direct impacts will differ from the "positives outweigh the negatives" perspective for developing country workers, particularly given the evaluative comparator of pre-platform work.

An alternative wider view would be to expand the boundary geographically. Given the globalised nature of both DGE work and the organisation of work in the form of platforms, many – though not all – conceivable interventions would impact workers in the global North as well as the global South. Adding in this former group, there is stronger evidence of problems with online outsourcing; specifically in the form of pay levels but more generally reflected in the relatively-greater dissatisfaction experienced by workers (Fieseler et al 2017). So this provides some grounds for intervention.

The scope could be expanded chronologically to look at the longer-term impacts for those in developing countries of working in the digital gig economy. We know the majority of workers do not (yet) make a career in the digital gig economy. We know that personality differences play a role here[16], and we also know some move out of DGE work through choice: once they have paid their way through college, or once they use it as a stepping-

[16] Personality traits such as resilience are seen as a key differentiator of those who persist with DGE work as opposed to those who give up (Malik et al 2017). See also D'Cruz & Noronha (2016) who see those who have persevered demonstrating more entrepreneurial, resilient personality traits; and Barnes et al (2015:28) who cite the difference between "swimmers" and others as a) ability to overcome skill and other barriers to entry; b) employment of "continuous marketing, good client management skills and self-promotion"; c) operationalisation of "characteristics of self-efficacy, motivation, self-reliance and adaptability", though other factors may be at work.

stone to off-platform or alternative employment. But very likely others drop out due to the frustrations of online labour charted above: instances of non-payment, poor communication, unsocial hours, instability of work, instances of discrimination, opacity of decision-making, lack of adequate dispute resolution, etc.

As already indicated, the evidence base on longer-term impacts is limited but it segues into a final boundary expansion; of looking at the deeper picture of digital gig economy work. We can relate this to two different types of development: imminent and immanent (Hickey & Mohan 2005, Murphy & Carmody 2015). In this context, imminent development is that observed by looking "inside the platform": the incremental, individuated, short-term impacts on workers' livelihoods and lives as described in the first paragraph of this section. By contrast, immanent development looks "outside the platform" at the structural, collective, longer-term impacts of the spread of online labour in developing countries.

The core outcomes of immanent DGE development are seen to be chronic precarity and structural inequality (see Figure 4). Precarity – uncertainty, volatility and insecurity of employment – has already been noted above, and is something recognised by workers (Berg 2016, Codagnone et al 2016).

Structural inequality arises from a series of asymmetries:

- Value asymmetry. Digital gig economy value and hence financial benefits flow most to platforms, then to clients, and least to workers in relative terms (De Stefano 2015). This therefore reinforces inequalities between capital and labour and, given the pattern of trade, between global North and global South. One source of this has been the ability of the platform to shift costs; particularly to workers. As already noted, workers have to bear the costs of knowledge- and skill-building to enable entry into the market; of individual technical infrastructure; of ongoing training to remain competitive; and of interpretive labour. They also have to bear all the costs of social protections: holidays, sick leave, insurance, pensions, etc. Though largely unrecognised by the workers, all of these eat into their wages: from various approximations (Carson 2015, Berg 2016, Margaryan 2016) one can guesstimate that this may halve the net hourly rate earned. There is also a shift of cost from platform to clients who undertake some unpaid labour and provide their own local technical infrastructure, and from platforms to the state which provides some of the technical, human and institutional infrastructure necessary for platforms to function. Alongside the shifts in costs already noted, platforms tend to outsource their core ICT infrastructure to the cloud, and outsource much task management to algorithms or clients and workers (e.g. task matching, quality control, ratings). Overall, then, platforms work with a tiny full-time staff complement and minuscule marginal costs from they are able to capture rents (typically 10-20% of task cost: Schmidt 2017) by harnessing value from millions of units of labour and capital which they do not own and for which they disclaim responsibility.
- Risk asymmetry.[17] Within the shift in costs, platforms are also partly able to shift risks (*ibid.*). To workers, they shift the risk of investing in online labour as a livelihood and the

[17] An alternative perspective on risk combines issues of precarity and inequality via the seven types of (in)security associated with employment (Kantor et al 2006): Labour market security (e.g. employment status, notice period, no. days worked and hours); Employment security (e.g. type of contract, legality of employer); Income security (e.g. earnings, savings); Job security (e.g. advancement over past few years); Work security

risk of investing in bidding and undertaking individual tasks[18]. To clients, they shift the risk of sub-contracting work. To both parties, they shift most legal liabilities for work and payment.

- Resource asymmetry. As already noted, a set of resources is required for entry into DGE employment: especially knowledge, skills and technology. That the majority of workers in developing countries lack these resources creates within-country inequalities such that the worker benefits of online labour currently fall largely to a relatively elite group (De Stefano 2015). Although diversity does seem to be increasing over time, for example, the majority of developing country DGE workers have at least a first degree and the majority are male (Berg 2016, Brawley & Pury 2016). For those who take up online labour, these asymmetries also partly underpin between-country inequalities, such as those which lead wages in the global North to typically be reported higher than those in the global South (e.g. Beerepoot & Lambregts 2015).
- Information asymmetry. Online outsourcing platforms are a manifestation of Panopticon design. The platform sees all: every client, every worker, every bid, every transaction and in some cases, even surveils the work process of individual workers. And the platform understands all: every rule around payment, non-payment, work rejection, worker suspension, progression to higher membership levels, etc. Workers especially (and clients also to some extent) control none of this and see none of this. They have only a tiny porthole through which they see a minute part of the overall picture and they cannot even control their own profile (Schmidt 2017). Meanwhile, the internal details of platforms themselves and their staff are barely visible and barely accountable for their actions.
- Power asymmetry. Alongside information and other asymmetries is an unequal distribution of control over other sources of power which reinforce the platform-client-worker hierarchy. Platforms control the institutions and organisation of work including legal oversight, terms of service, and work context and management design (*ibid.*). They also control the technical systems into which work and work organisation are embedded. While this places platforms at the top of the pecking order, work organisation design also relatively empowers clients. In some platforms, they rate workers but are not themselves rated; they determine the nature of tasks, payment and related conditions; and they have the power to accept or refuse work (Aloisi 2015, Kingsley et al 2015).

(e.g. health and safety, no. days off from work-related illness, help with childcare); Skill reproduction security (e.g. training received, qualifications required for work); Representation security (e.g. membership of union or other collective organisation). Analysing these for DGE work (D'Cruz 2017) shows the growth in employment insecurity that has arisen because responsibility for most of these securities is borne by the worker: this is self-provision of employment security rather than – as in traditional employment – institutional provision via the employer.

[18] Despite this shift of risk to workers, managerialist literature continues to see workers as the core source of risk in online outsourcing: that they will produce work of poor quality; that they will not complete tasks assigned to them; that they will purloin or seek to retain intellectual property (Kaganer et al 2013). It is of course this mentality that actively seeks to automate workers out of the labour process.

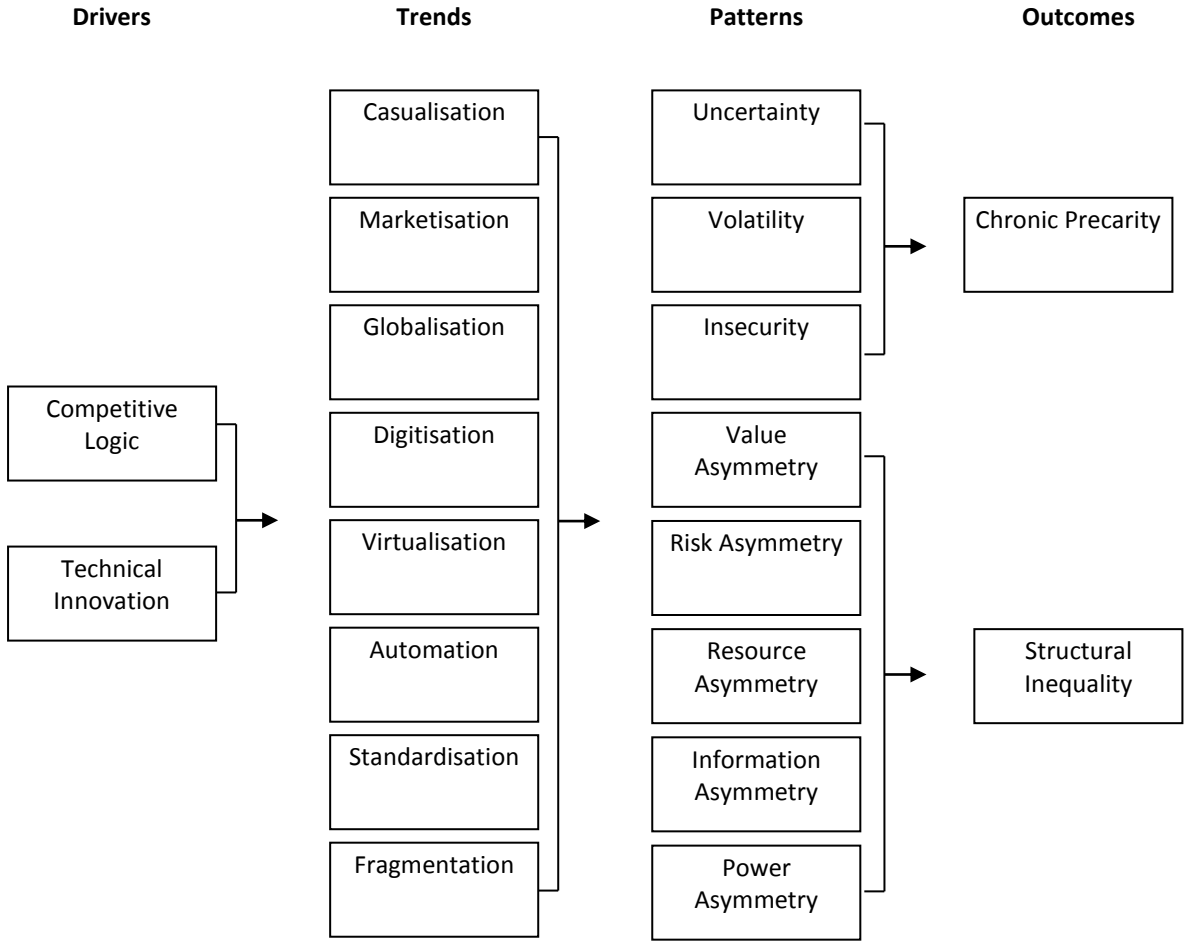

Figure 4: The Digital Gig Economy from an Immanent Development Standpoint

The overall question arises, then, whether precarity and inequality are a price worth paying for employment opportunity and flexibility?

It must be repeated that much of this is the work of analysts rather than derived from workers or from hard evidence. Indeed, the latter is distinctly lacking:

- A claimed source of power asymmetry is the oversupply of labour compared to demand (Graham et al 2017a). In terms of data on supply and demand, Upwork (2015) shows numbers of registered workers growing faster than numbers of clients while Graham et al (2017b) cite an average 9:1 ratio for developing country online labour between the number of registered worker profiles and the number of successful workers (those with at least one hour or US$1 billable work). However, neither of these proves oversupply because an unknown number of registered worker accounts could be abandoned and thus not constitute supply[19].
- One consequence of this and other structural features is the claim that the digital gig economy will be characterised by over-competition and, hence, by a race to the bottom

[19] And on Zhubajie, value of transactions has grown almost twice as fast as volume of registered workers (To & Lai 2015).

in terms of wages (Graham et al 2017a). There are anecdotal instances of under-bidding very low rates to win work (*ibid.*) but the very little longitudinal evidence on hourly payment rates (Agrawal et al 2013) shows no sign of declines over time.

- No broader evidence of specific relevance to the current focus could be found but Brinkley (2016:3) claims of the overall gig economy, "We find no evidence that the gig economy has increased the share of insecure employment in the labour market. It has not reduced the aggregate supply of permanent and full time employee jobs, or as yet significantly reduced conventional employment opportunities".

At present, then, the rationale for intervention from these immanent features can only come from two origins (Huws 2017, Schmidt 2017)[20]. First, the assumption that the breadth and depth of asymmetries is such that they must underlie inequalities that are damaging to society, and which require correction towards greater equity of value, risk, resources, information and power. Second, that what is shown here falls short of the standards for decent work, and that it is appropriate to try to "hold the line" on decent work and not accept that an eroded quality of work should become the new norm.

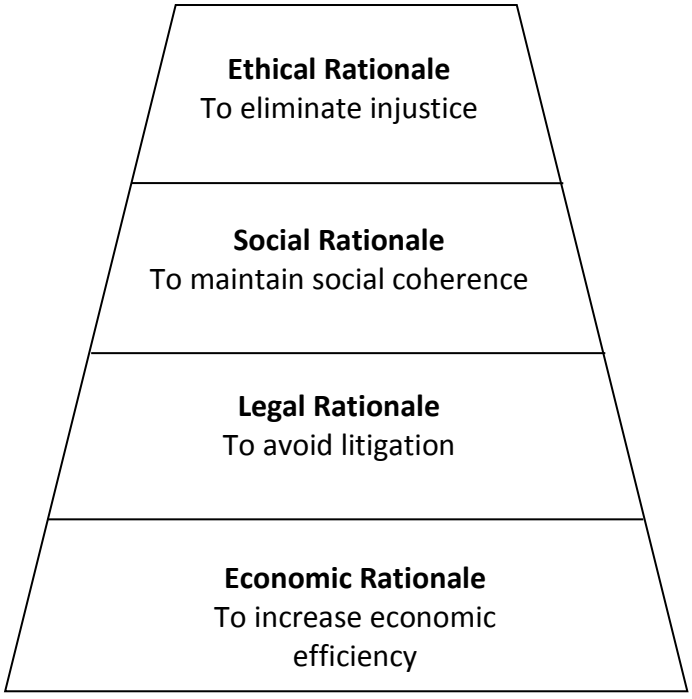

Figure 5: Pyramid of Rationales for Intervention in the Digital Gig Economy

Whichever the origin, we can understand a hierarchy of stated rationales (see Figure 5, adapted from Carroll's (1991) pyramid[21] of corporate social responsibility), though again

[20] There is a third possible line of argument: one that decries the psychological and cultural changes associated with DGE work; towards a more individualistic and materialistic culture in developing countries (D'Cruz & Noronha 2016).

[21] Although there is no specific evidence for the digital gig economy, the rationales are pictured as a hierarchy because of evidence that, at least in the corporate world and at least in relation to Carroll's (1991) original pyramid, attributed importance declines as one moves up the pyramid. Evidence from the IT sector (Babin &

noting that such rationales are rarely stated and are merely assumed in most of the literature to date:

- ***Economic rationale***: the current situation can be argued as economically inefficient in many ways, and thus requiring action to move towards a more economically-optimum situation[22]. Because of the transfer of risk and cost, many activities are individualised: responsibility for social protection, responsibility for worker communication with other stakeholders, responsibility for learning, etc. All of this will be economically inefficient compared to a situation in which such activities are collectivised (Harris & Krueger 2015). The inequality of financial value flowing much more to capital than to labour is bad for economic growth because of the relative tendency of capital to use wealth inefficiently compared to labour (Piketty 2013). (Likewise, the lack of access to digital gig economy work for poorer citizens is inefficient in growth terms given the differential ways in which poorer vs. richer citizens use their money (Ostry et al 2014).) Information asymmetries are inefficient because workers waste time on interpretive labour – trying to find out about clients, tasks, platform procedures – which would be unnecessary if the information they seek was already provided. Any stress or dissatisfaction will be inefficient because this reduces productivity levels from their optimum, and also increases worker exit and turnover which add to costs (Tett & Meyer 1993, Judge et al 2001). Alongside, and related, is the inefficiency of those workers who register and perhaps bid for work without ever taking on a task, and then give up. Finally, any discrimination will be economically inefficient since it diverts allocation of work from those who will conduct it most efficiently.
- ***Legal rationale***: there is legal uncertainty around this new form of work; there is a divergence between decent work norms and current provision in the digital gig economy; and there is a divergence between de jure and de facto employment status. All of these increase the likelihood – already seen in a few cases – of litigation; something which is both socially and economically inefficient. Those inefficiencies can justify intervention.
- ***Social rationale***: inequalities stemming from the digital gig economy are politically undesirable since inequality tends to undermine democracy (Houle 2009).[23] In addition, policy making will be inefficient and ineffective due to lack of access to digital gig economy data. Intervention can be justified to address these social shortcomings.
- ***Ethical rationale***: among at least some in society there is acceptance that falling short of the standards of decent work, that asymmetries in distribution and outcomes, and that inequality more generally is unjust and that ethical grounds can be the basis for intervening to address these injustices (Barrow 2015, Fieseler et al 2017). See also Box 4.

Nicholson 2009) and from developing countries (Carroll 2016) suggests the ranking of importance may not be the same in all contexts.

[22] One way to conceptualise economic issues is to identify them as ways in which online outsourcing falls short of the requirements of a perfect market; for example, in terms of the opacity, scarcity and asymmetry of information; the lack of basic regulatory foundations for market operation; the asymmetries of other elements including resource distribution and value flows (Martin et al 2016). The rationale for action thus becomes the desire to move towards a more-perfect market.

[23] Though Houle (2009) argues that inequality does not have any specific impact on countries making the transition to democracy.

BOX 4: PLATFORM JUSTICE

One ethical perspective that could be brought to bear is that of justice. Drawing from the literature on organisational justice (Colquitt et al 2001; see also Fieseler et al 2017) and from a review of other sources (Heeks & Renken 2017), the domain of platforms and digital gig economy work can be divided into four aspects of justice (see Figure 6):

- Procedural Justice: seeking fair platform work processes including allocation of tasks, monitoring work evaluation, dispute resolution, etc; and also including interactional justice: fairness in communications from platform and clients, and between platform and clients and workers.
- Distributive Justice: seeking fair (typically equality of) distribution of platform work inputs and outputs including accessibility of the technology and capabilities necessary to access platform work, and distribution of both costs/risks and benefits of platform work.
- Rights-Based Justice: although marked separately, this would actually cross-cut the two other forms of justice but start from a different perspective; that of fundamental rights and the respect for those rights within platform work. A typical starting point would be the 1948 Universal Declaration of Human Rights (UN 1948) which would judge digital gig economy work in terms of rights such as equality and absence of discrimination, absence of forced labour, the right to privacy, right of access to information, freedom of association including trade union membership, a right to paid holiday, and a right to an adequate living. Many of these underpin the ILO decent work conventions, discussed elsewhere.
- Structural Justice: this focuses on the structural foundations that significantly determine the other aspects of justice. These issues have already been discussed above in drawing out the notion of an immanent perspective on the digital gig economy, and will be identified later in the idea of diagnosing the structural causes of precarity and inequality.

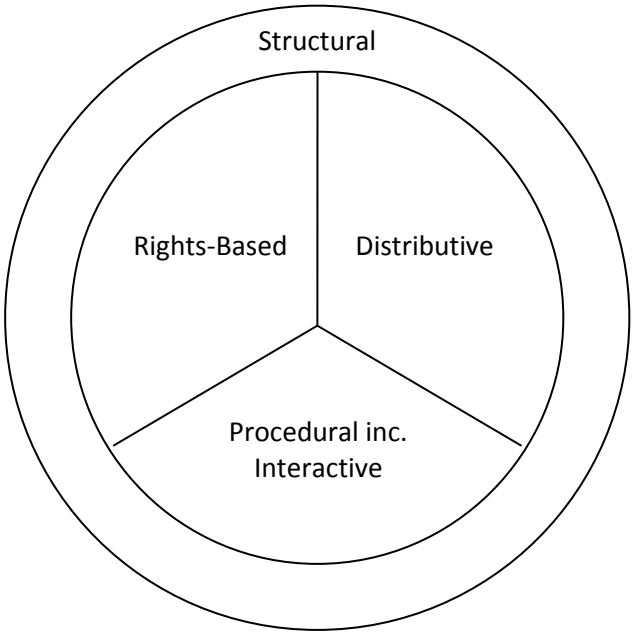

Figure 6: The Components of Platform Justice

C. What Should Be Done About the Digital Gig Economy?

C1. Review and Synthesis of Existing Proposals and Standards

Some literature on the digital gig economy merely describes and does not prescribe; this being particularly the case with earlier material that was proposing research agendas (e.g. Agrawal et al 2013; Bergvall-Kareborn & Howcroft 2014). But much of the literature does include prescriptions. Sometimes this is "best practice"-type material about overcoming start-up and growth and other operational problems, with guidance aimed at clients (e.g. Corporaal 2017b) or platforms (e.g. Kittur et al 2013) or governments (e.g. Kuek et al 2015).

But the focus here is literature prescribing interventions to address online labour-related problems, which can be understood as a hierarchy (see Figure 7):

- Recommendations: suggestions about how to mitigate or avoid negative impacts previously identified. Sometimes narrow in scope such as ideas on how to address information inequalities of DGE work (Kingsley et al 2015) or new platform designs to help address minimum wage issues (Mankar et al 2017). But others are broad-ranging suggestions intended to be taken up by DGE stakeholders; typically from practice-engaged researchers including those working in academia (e.g. Graham et al 2017a) or for international organisations (e.g. Kuek et al 2015). Recommendations are analysed and categorised in Appendix 2.
- Proposals: an enumerated and bounded package of guidelines intended to form the basis of a code of conduct or set of standards. There are a number of proposals of relevance to the digital gig economy including two that deal with it specifically (FairCrowdWork 2016 and Graham 2017) and one that focuses on it quite heavily (Silberman 2017). This would also include proposals on the issue of employment status which, while individual, covers a package of other elements (see Box 5). Proposals, codes and standards are analysed and categorised in Appendix 3.
- Code of Conduct: guidelines for behaviour to which signatories are expected to adhere. Only one operational code could be identified of specific relevance to the digital gig economy; set up by a group of German platforms (Testbirds 2017).
- Standards: guidelines for behaviour against which signatories will be formally monitored in some way via reporting, via quantification of metrics, or via certification. As yet, there do not appear to be any active standards operating specifically in the digital gig economy.

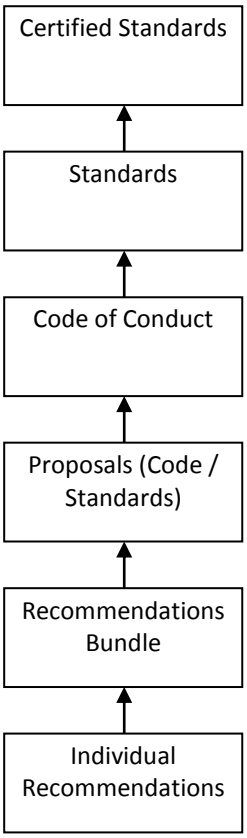

Figure 7: Hierarchy of Guidance on Improving the Digital Gig Economy

BOX 5: EMPLOYMENT STATUS

At times, the (digital) gig economy literature can seem rather obsessed by employment status, with papers written on just this one topic (Harris & Krueger 2015, Stewart & Stanford 2017). The key reason is that, in many countries, many of the other issues raised would fall into place if DGE workers were classified as employees rather than as independent contractors. These typically include: social security including leave, insurance, and employer contributions; social dialogue and representation; wage levels; working hours; and safe work. Employee status is thus a short-cut to unlock many decent work standards.

Where there are tests for employment, the consensus is that DGE workers partly meet the criteria for employee, and partly meet the criteria for independent contractor (Harris & Krueger 2015, Berg & De Stefano 2017). For example, like independent contractors, DGE workers can choose whether and when to work. But like employees, many of their conditions of work are set by the platform, and the platform has the right to "fire" them by terminating their account. For those using the platforms as the primary income source, classification is still mixed but leans more towards employee given their financial and work sourcing dependence on the platform (Cherry & Poster 2016).

The issue of status has been the basis for litigation such as the case against Crowdflower brought in Oregon, which sought for workers to be treated as employees in regard to minimum wage payments (Tigar 2015). However, as with similar cases in the physical gig

economy, this was settled without any judgement on reclassification of employment status (De Stefano 2015).

This legal impasse and the hybrid nature of DGE workers' actual status has led to calls for creation of a new intermediate category of employment status: called either "dependent contractor" (*ibid.*, Taylor 2017) or "independent worker" (Aloisi 2015, Harris & Krueger 2015). Harris & Krueger (*ibid.*) provide a detailed justification and description for this and they argue the impossibility of accurate and trustworthy measurement of working hours for DGE workers. On that basis, they argue that overtime and minimum wage must be excluded from "independent worker" benefits, alongside unemployment insurance given the discretion over work that workers have. But they would qualify for "freedom to organize and collectively bargain, civil rights protections [*anti-discrimination*], tax withholding, and employer contributions for payroll taxes" (*ibid.*:2); and they would have access to pooled purchase of health and liability insurance via the platform.

Though quite widely touted as an idea, there are one or two voices of dissent: for instance, De Stefano (2015) argues a new intermediate categorisation is neither feasible due to problems of definition nor desirable given it would erode the full labour protections of employee status, which is what should be pursued instead. A variation is the proposal from FairCrowdWork (2016) to allow workers flexibility to choose where along the continuum of options (employee—independent worker—independent contractor) they lie depending on their availability for online labour.

In summary, then, there is only one existing code or standard of specific relevance to the digital gig economy: that developed by a set of German platform operators.[24] Reviewing this shows that it could be adopted more widely. However, it would only be appropriate in circumstances where its lacunae were not seen as important. These include an absence of guidelines on: social protection, freedom of association, social dialogue, wider accountability, access to employment opportunities, career development, discrimination, dispute resolution, working hours, and health and safety. At the least, the German code is valuable in suggesting the minimum set of standards that platform operators might be willing to sign up to. However, as clear from the list of absent guidelines and also from reading other proposals, etc, there could be much more than this in a decent work standard. Reading across the proposals, codes, etc analysed in Appendix 3 (and cross-checking with the recommendations analysed in Appendix 2) produces the components of a code or standards for the digital gig economy as shown in Table 1 and reclassified to fit the ILO decent work categorisation (see also Box 6 for some additional ideas derived from individual sources).

[24] There is a standard for fair trade in software; metrics (and a nascent code) for IT impact sourcing; and a code for physical gig economy work (see Appendix 3). These can be learnt from and they are discussed below, but they are not directly applicable.

Table 1: "Decent Digital Work" – Standards for the Digital Gig Economy

	Code Components / Standards
Employment Context	
Social Security	• Provision of annual, sick and maternity leave • Provision of unemployment, disability and health insurance • Provision of liability insurance • Provision of pension contributions • Portable benefits • Shared contributions from workers, platforms and clients including taxation
Social Dialogue, Employers' and Workers' Representation	• Right to organise and negotiate collective agreements • Legal changes where collective negotiation is prevented for independent contractors • Enable (collective) communication between workers
Economic and Social Context for Decent Work	• Compliance with all relevant national laws in worker jurisdiction • Client responsibility for digital supply chain • Access for policy-makers to anonymised transactional platform data
Employment	
Employment Opportunities	• Opportunity to access digital gig economy work • Provision of training opportunities • Worker-accessible, portable work history and reputation profiles
Stability and Security of Work	• Combination of stability and flexibility • Clarification / recategorisation / development of new / flexibility to choose employment status
Equal Opportunity and Treatment in Employment	• No discrimination • Data protection and privacy for both clients and workers
Dignity and Respect at Work	• Respectful and prompt communications between clients, platform and workers • Clear rules for work rejection and re-work, worker deactivation, worker ratings, and worker 'levelling-up' • Human review of worker complaints • Neutral third-party dispute resolution mechanism
Work Conditions	
Adequate Earnings and Productive Work	• At least minimum wage paid taking unpaid time and other costs into account • Clear information and communication about tasks • Clear information about payment including schedule and conditions and non-payment • General-terms details about client identity and task purpose • Rating system for both clients and workers
Decent Working Time	• Compliance with national working time directives and with ILO guidelines
Safe Work Environment	• Ensure potentially psychologically unsafe tasks are signalled, and support provided

BOX 6: ADDITIONAL IDEAS ON DECENT DIGITAL WORK

Alongside the core issues identified above in Table 1, there are a number of additional ideas that could be incorporated into decent work standards for the digital gig economy. See also Box 7 for ideas on use of ICTs to facilitate application of standards.

PRINCIPLES

- **Comparator Test:** the proposal to evaluate the ethics of DGE work by asking how it would be judged – as fair or unfair – if the same thing occurred in the traditional equivalent of work undertaken in a physical office for a client (Cherry & Poster 2016).

- **Alternate Sources of Unethical Behaviour**: the assumption of most literature is that the source of unethical conduct lies with clients and/or platforms and/or with the organisation of work. But a minority perspective focuses on unethical behaviour of workers, and seeks to adopt measures that would address their theft of intellectual property, cheating of clients, and poor quality work (Durward et al 2016).

- **Platform as Government**: the proposal that platforms should be treated not as equivalent to an employer but as equivalent to government in that the platform creates "the location where online labor takes place" (Kingsley et al 2015:396). This matches the view of at least some DGE workers (Fieseler et al 2017) who see their direct relationship being with the client, but who view the platform as overseeing transactions and as the mediator when there are problems. From this perspective, the platform would take on a "fiduciary" role: a legal and/or ethical role of trust to "act in the best interest of all parties on the platform, and not the select interests of a few" (Kingsley et al 2015:397).

EMPLOYMENT CONTEXT

- **Gig Economy Tobin Tax**: in order to ensure a sharing of social costs and a fair contribution from platforms and/or clients, the equivalent of a Tobin tax could be instituted: not on financial transactions but on digital labour transactions. This would charge either the platform or the client a tiny proportion of total transaction value (Tobin himself suggested various rates; a typical later one being 0.2% (Patterson & Galliano 1999)), which would be collected by government.

- **FairWork Premium**: a variant on the Tobin tax, this would be a premium paid by clients to be used in some way for the benefit of platform workers (Graham 2017). This could be automatically incorporated or voluntary in the form of a "Donate"-style button at the point of payment. Graham (*ibid.*) suggests three uses for the collected funds. First, local expenditure by groups of workers: this seems problematic given the dispersed nature of work. Second, support for platform cooperatives: this seems problematic given it would presumably require platforms to be support creation of competitors. Third, a cross-platform client and worker rating system: this could be feasible but many platforms already incorporate this; it would require the costly creation of cross-platform unique identities for both clients and workers; and it would potentially require platforms to share their data. A more workable alternative might be that the premium would simply be paid to the worker; or that it could fund the operation of a platform-specific but independent dispute resolution and mediation service.

- **Platform Cooperativism**: a number of sources (Graham et al 2017b, Fishwick 2017, Scholz 2017) advocate greater presence of cooperatively-owned gig economy platforms. While clearly bringing benefits to workers, it is not clear what client benefits these would offer, so they might be restricted as a niche for ethically-conscious clients (Schmidt 2017). Variations on this include recommendations for platforms to adopt the logic of a social enterprise (ITTF 2015) or adopt a "shared prosperity" model (NDWA 2015) which might best be operationalised by paying a small proportion of transaction value – from client, platform or workers – to workers as shares in the platform operating company. While yet to be fully launched at the time of writing, it is possible that Daemo (www.daemo.org) – a self-governing digital gig economy platform – may provide a basis for this (SCRC 2015).

- **Collaborative Impact Sourcing Platform**: a (potentially cooperative) online impact sourcing platform, shared between leading IT impact sourcing providers, which clients could use if they wished to support impact sourcing.

- **Platform Ratings**: currently in the digital gig economy workers and in some cases clients are rated, but there appears to be only one initiative to rate platforms (FairCrowdWork 2017: http://faircrowd.work/platform-reviews/). This could fairly readily be revised to more closely align with the standards outlined in Table 1.

EMPLOYMENT

- **Differentiated Standards**: almost all recommendations, proposals, etc assume an across-the-board application of decent digital work standards. Yet, simultaneously, the literature identifies the very different circumstances of different DGE workers; in particular contrasting those who are already employed in a different job and undertake online labour for small incremental supplements to their income vs. those for whom online labour represents their main and sometimes only source of income (Berg 2016, Codagnone et al 2016). One possibility, then, would be to offer different levels of benefit to different workers. For example, platforms could offer leave entitlements, access to pooled insurance, training, access to independent dispute resolution, access to client identity, etc only for more-experienced, regular workers on the platform; i.e. those whose livelihoods depend more on the platform and who are more like platform employees. As noted above, there is a variation of allowing workers to select their employment status (FairCrowdWork 2016).

C2. Applying Decent Work Standards in the Digital Gig Economy

Four questions can be posed in relation to the application of decent work standards in the digital gig economy.

i. What is the Aim of Intervention?

Following from the earlier discussion about imminent and immanent impacts of the digital gig economy, one can see a similar distinction in the application of interventions. D'Cruz (2017), drawing on the work of Hauf (2015), distinguishes between:

- Sub-hegemonic actions which assist the translation of existing capital-labour relations into the context of the platform economy.
- Counter-hegemonic actions which challenge the structure of existing capital-labour relations within the platform economy.

Some proposals inherently fall into one or other camp. For example, the Taylor (2017) Review of the UK gig economy is sub-hegemonic, by placing both control and responsibility for intervention in the hands of the platforms rather than the state or worker organisations: "The best way to achieve better work is not national regulation but responsible corporate governance, good management and strong employment relations within the organisation" (*ibid.*:9). By contrast, the work of Scholz (e.g. 2016) is counter-hegemonic with its advocacy for platform cooperativism and its argument that "None of these issues can be addressed effectively until we reinvigorate solidarity, change ownership, and introduce democratic governance" (*ibid.*:11).

In other cases, what matters will be the how and who of application of the standards. They can be applied in a way that merely helps the platforms expand their market while leaving the fundamental employment model little changed; they can be applied in a way that fundamentally shifts power away from the platforms and helps "marginalised workers to combat marginalisation and reclaim dignity" (Hauf 2015:151); or they can be applied at some intermediate point along this continuum. The German initiatives are a case in point: while Testbirds (2017) could be little other than sub-hegemonic, the Frankfurt Declaration (FairCrowdWork 2016) has potential to be counter-hegemonic.

It is likely that only counter-hegemonic actions would address the fundamental drivers and trends and outcomes (see Figure 4). Yet relatively little research to date seeks to diagnose the structural causes for precarity and inequality, let alone to prescribe actions that might address those causes[25]. Without this, there may be too much of a focus in both prescription and action on proximal symptoms. Yet the overarching aims of intervention should be to address the big-picture outcomes and their fundamental origins (Berg 2016, Codagnone et al 2016).

[25] D'Cruz (2017) recommends the idea of "decent work diagnostics" (Tevdovski 2015) which aims to identify the structural causes underlying lack of decent work.

ii. How Broadly Applied Should the Standards be?

Alongside the vertical hierarchy of guidance shown in Figure 7, there is a horizontal hierarchy, as shown in Figure 8, which relates to the scope of application of the guidance. At one end is guidance intended to apply to a single platform, such as that for Amazon Mechanical Turk (TBR 2013). There is implicit support for guidance that applies just to one type of platform or worker because of their differentiation e.g. different standards for micro-work platforms compared to freelance platforms (Schmidt 2017). Again implicit would be the idea that interventions should apply across all of the digital gig economy or, given the similarity of issues, across the whole of the gig economy: both digital and physical. As can be seen from Appendix 3, the latter is the scope adopted by the majority of proposals. Finally, there is the argument for universalism: that there should be no "separate silo" for the (digital) gig economy but that interventions including standards should be applied across all types of work, particularly targeting all forms of casualised and non-standard employment (De Stefano 2015).

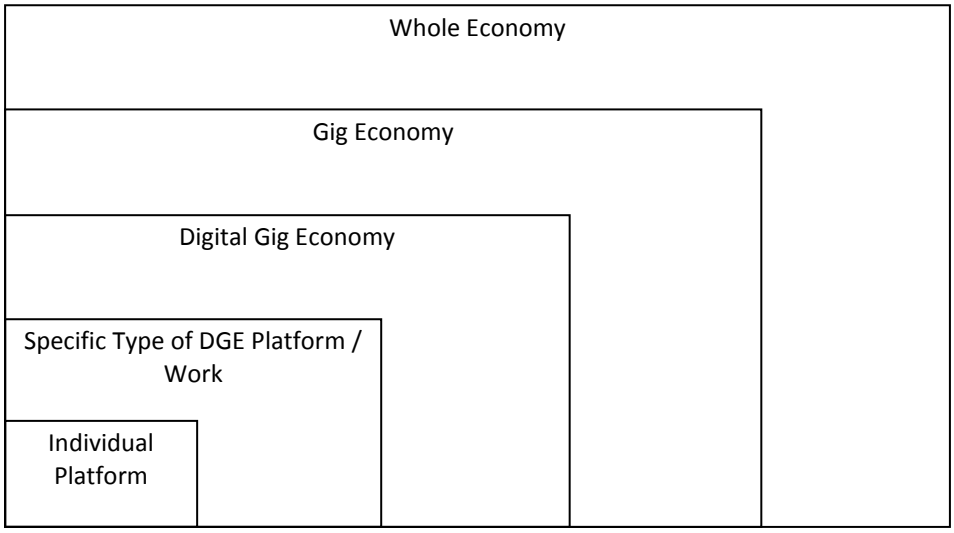

Figure 8: Scope of Application of Intervention (Standards, Code, etc)

This issue will be taken up again in the next question, which looks at the re-use of existing codes or standards, which typically apply at a broader scale. This leans toward the value of broad decent work standards but also sees the necessity of specific targeting of the digital gig economy or – given the commonality of platform-related issues – the gig economy overall.

iii. Could Existing Codes or Standards be Used?

In a variant of Figure 8, Figure 9 summarises the overall domain of codes and standards. There appears to be, as noted, just one digital gig economy-specific code, which is relatively narrow. There do not appear to be any full codes or standards covering the whole of the gig economy, and material from proposals and recommendations for the gig economy overall was incorporated into Table 1. Much if not all of that material could be used as a code or standard for the gig economy overall.

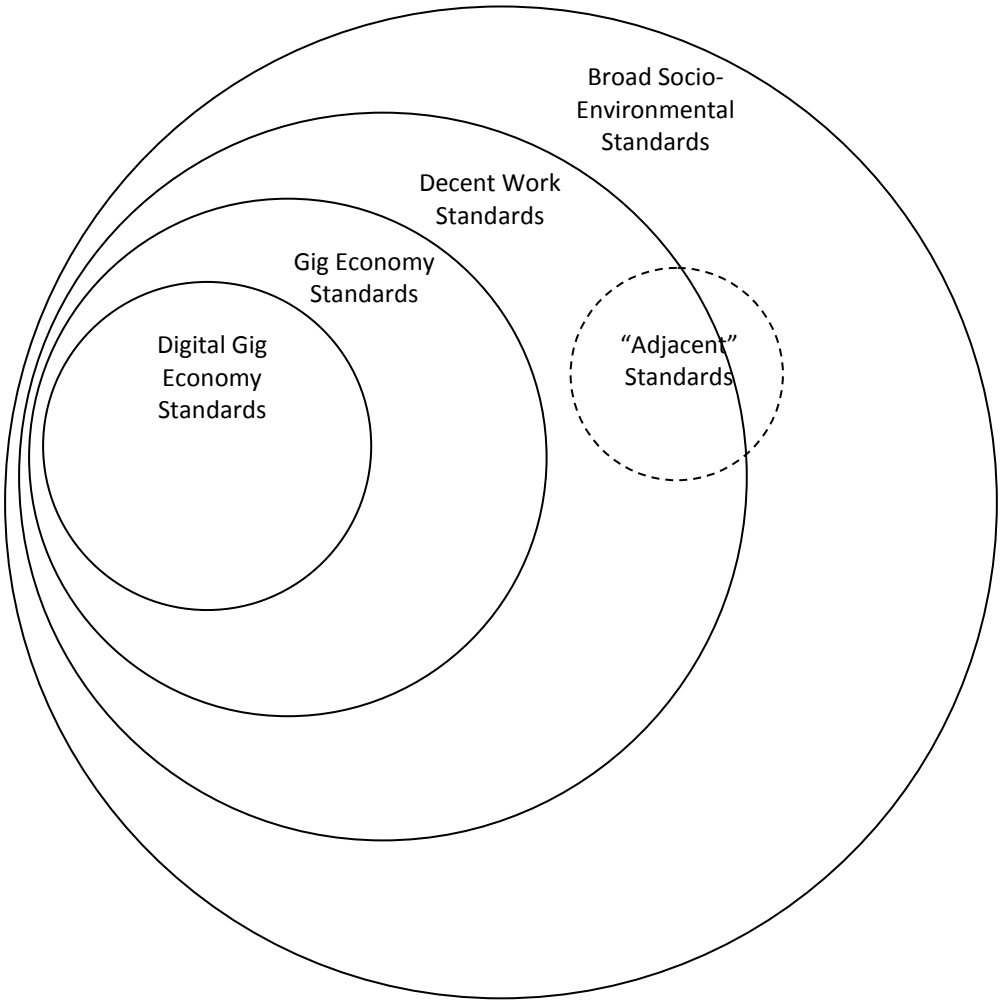

Figure 9: Scope of Available Codes and Standards

Moving to the widest level, there are a number of broad socio-environmental standards which all cover roughly-similar ground:

- The UN Global Compact (UN 2015) details just ten simple principles under the headings of human rights, labour standards, environment and anti-corruption, to which signatories commit to adhere. There is no specific regulation, monitoring or enforcement of the principles (though hundreds of firms have been delisted over the years). In terms of labour standards it deals only with freedom of association, collective bargaining, elimination of forced and child labour, and an end to discrimination; thus excluding the majority of elements seen above as relevant to DGE work.
- ISO 26000 (ISO 2010) is a detailed international standard developed by a multi-stakeholder group: guidelines without any inherent certification. It covers organisational governance, human rights, labour practices, environment, fair operating practices, consumer issues, and community involvement and development. The labour practices component is based on ILO decent work conventions and does encompass as workers both employees and self-employed contractors.
- The Global Reporting Initiative (e.g. GRI 2016) is a set of standards for reporting on commercial activities (typically of large firms), and also has no inherent certification. It covers general reporting principles and economic, environmental and social standards.

The latter "400 series" draws from the ILO decent work convention. However, it does not incorporate minimum wage or social protections, and it includes many additional issues e.g. around broader human rights, community involvement, political contributions, etc. In addition, workers who are not employees are seen as stakeholders but as lying outside the ambit of the social standards. As such it would be of limited relevance to much current DGE work.

- The B-Corp initiative (YCBE 2017) is a certification scheme for businesses covering standards for governance, workers, community and environment. The worker section of the standards covers only a sub-set of DGE issues and is aimed at the traditional workplace and traditional employer-employee relationships rather than the pattern found with online platforms.

In all cases, the overall standards would at best be sledgehammers to crack a nut given the breadth of their coverage. And in detail, only ISO26000's labour practices would appear to have sufficient overlap with DGE issues and circumstances to be of potential relevance.

Two adjacent standards of relevance were identified, both of which represent fair trade/work[2627]:

- IT impact sourcing already has a set of performance metrics (IRIS 2014). These are very specifically oriented to the development of workers from marginalised communities, working in physical workplaces. While they cover some relevant DGE elements, they miss several others (e.g. portability of benefits, freedom of association and social dialogue, discrimination, dignity and respect at work, dispute resolution, etc), and include additional elements that are outwith mainstream DGE interests, such as community development programmes. It remains to be seen whether the forthcoming IT impact sourcing standard will be significantly different (GISC 2017). At most, then, this might provide some additional elements for an extended DGE decent work standard relating to online, platform-based impact sourcing.
- Software offshoring has a fair trade standard (FTSF 2012) which is self-reported rather than certified. This covers a slightly wider set of issues than the IT impact sourcing metrics but still omits some DGE code issues (e.g. access to employment, portability of benefits, freedom of association and social dialogue) and adds environmental and community elements. It is also rooted in a physical workplace model with a key actor being the contractor organisation based in a developing country. While not directly appropriate, it could provide some basis for an approach to a detailed DGE standard.

Finally, we can turn to look at two codes based on the ILO decent work conventions:

- The Ethical Trading Initiative Base Code (ETI 2014) has nine elements to which organisations commit. These are not certified but performance – including expected ongoing improvements – is self-reported. It appears to conceptualise work largely in

[26] Though often conflated, one defined difference between fair trade/work and ethical trade/work is that the former involves new, alternative organisations which have a specific purpose of improving development outcomes, whereas the latter works with existing commercial organisations to seek to improve their development impacts (Duncombe & Heeks 2003).

[27] The International Association of Outsourcing Professionals has an ethical code (IAOP 2008) but this relates to personal behaviour of an individual involved in outsourcing, and does not relate to DGE conditions of work. The "Good Work Code" (NDWA 2015) is included in Appendix 3 but is specifically aimed at the domestic work in the physical gig economy, and has no elements not found in other gig economy proposals.

terms of traditional employment and it is thus unclear if DGE workers would be included as things stand.

- SA8000 (SAI 2014) is a certification scheme and set of standards for organisations. It also has nine elements which differ only slightly from those of the ETI Base Code. However, it does explicitly include as workers, "all individuals employed or contracted by an organisation". While this could encompass DGE workers, as with almost all existing codes, translation of traditional employment relations faces the challenge of who represents the employing organisation: the platform or the client.

Table 2 below compares these two codes with the content of Table 1: the DGE standards identified earlier (items marked * represent some way in which the DGE standards vary from the other two codes). As with ISO26000 and any other codes or standards based on ILO conventions, there is a glass half-full/half-empty conclusion. If, for example, platforms were to sign up to the ETI Base Code (assuming the worker status issue was resolved) or to SA8000, they would address a number of the important issues that beset the digital gig economy. On the other hand, comparing DGE and these ILO-based codes, there are a number of elements which are:

- Missing: social protections, wider context and employment opportunities as whole categories are missing from the ILO-based codes; though of course all are within the original ILO conventions. Within categories there are missing issues such as worker communication, employment status, data protection/privacy, nature of communication, clarification of rules, handling of complaints and disputes, clarity on clients and tasks, and two-sided rating systems.
- Irrelevant: as yet the issue of forced and child labour has not been evidenced for DGE work.
- Different: for example, the specification of work security/stability (its combination with flexibility), of wage payments (including unpaid search / bid / learning / interpretive labour time), of health and safety (psychologically-unsafe work).

Expanding codes to cover all twelve ILO categories would help a little and Table 2 suggests that new categories are not required. However, the main conclusion here is that existing decent work codes and the existing ILO conventions in their specifics are suited for the traditional world of work, but they are not suited for the emergent world of digital work. Other than the missing categories, all the mismatches listed above arise from the specific digital / online nature of DGE work. They suggest the need for a specific digital gig economy standard or at least gig economy standard in the short term, and the need for decent work conventions to be updated in the medium term.

Table 2: Comparing ILO-Based Codes/Standards with the Digital Gig Economy Standard

	ETI Base Code	***SA8000 Standard***	***Digital Gig Economy Standard***
Employment Context			
Work That Should be Abolished	Employment is freely chosen Child labour shall not be used	No child labour No forced or compulsory labour	*N/a: no evidence of this
Social Security			*Provision of annual, sick and maternity leave *Provision of unemployment, disability and health insurance *Provision of liability insurance *Provision of pension contributions *Portable benefits *Shared contributions from workers, platforms and clients including taxation
Social Dialogue, Employers' and Workers' Representation	Freedom of association and right to collective bargaining	Freedom of association and right to collective bargaining	Right to organise and negotiate collective agreements *Legal changes where collective negotiation is prevented for independent contractors *Enable (collective) communication between workers
Economic and Social Context for Decent Work			*Compliance with all relevant national laws in worker jurisdiction *Client responsibility for digital supply chain *Access for policy-makers to anonymised transactional platform data
Employment			
Employment Opportunities			Opportunity to access digital gig economy work *Provision of training opportunities *Worker-accessible, portable work history and reputation profiles
Combining Work, Family and Personal Life			
Stability and Security of Work	Regular employment is provided		Combination of stability and flexibility *Clarification / recategorisation / development of new / flexibility to choose employment status
Equal Opportunity and Treatment in Employment	No discrimination is practiced	No discrimination	No discrimination *Data protection and privacy for both clients and workers

	ETI Base Code	***SA8000 Standard***	***Digital Gig Economy Standard***
(Dignity and Respect at Work)	No harsh or inhumane treatment is allowed	No abusive disciplinary practices	*Respectful and prompt communications between clients, platform and workers *Clear rules for work rejection and re-work, worker deactivation, worker ratings, and worker 'levelling-up' *Human review of worker complaints *Neutral third-party dispute resolution mechanism
Work Conditions			
Adequate Earnings and Productive Work	Living wages are paid	Living wage paid	At least minimum wage paid taking unpaid time into account *Clear information and communication about tasks *Clear information about payment including schedule and conditions and non-payment *General-terms details about client identity and task purpose *Rating system for both clients and workers
Decent Working Time	Working hours are not excessive	Limits on working hours / days	Compliance with national working time directives and with ILO guidelines
Safe Work Environment	Working conditions are safe and hygienic	Provide a safe and healthy work environment	Ensure potentially psychologically unsafe tasks are signalled, and support provided
Code Governance	Code adoption, commitment, integration, improvement throughout supply chain, reporting	SA8000 management system	Code -> Standards -> Certification

iv. What are the Motivations for and Barriers to Intervention?

Overall societal rationales for intervention were discussed above but these do not explain what may motivate individual stakeholders to change their current behaviour; that being the intention of all the interventions previously discussed. Nor do they identify the barriers to implementation in practice. We can start by identifying (see Figure 10) the different actors involved in the digital gig economy, and by recognising that they have two sources of motivation. The intrinsic motivation that comes from their own beliefs and interests, and extrinsic motivation that comes from pressure exerted by other actors in the system.

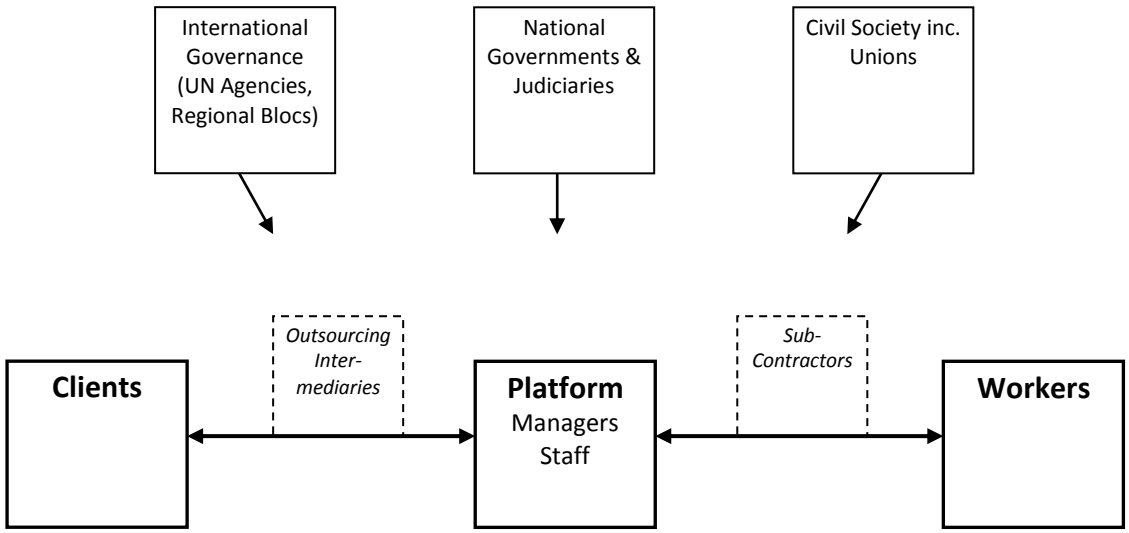

Figure 10: Potential Intervention Actors and Pressure Points

Workers. The main actions that workers could take relate to forms of collectivisation: communicating and organising, pooling costs and liabilities, negotiating with or pressurising platforms and other actors, and taking legal action. The main motivation for this would be perception of the problems identified above.

Unfortunately, as already indicated, there is a lack of such perception. Workers in developing countries generally hold positive views of online labour; particularly relative to alternative forms of work and work organisation (Kuek et al 2015). As noted above, a key issue singled out by this group is their desire for more and more consistent work (Berg 2016); hardly the view of those who see that work as inherently problematic. This is a constant refrain:

- Looking specifically at freelancers, they report high levels of satisfaction, no perception of or debate around exploitation, and little demand for intervention such as regulation (Schmidt 2017).
- Even workers in the global North have limited motivation for change; for example Fieseler et al (2017) report well over half of US Turkers held positive views towards the platform and only 8% held negative views (the remainder were neutral or mixed).

Other evidence of attitudinal barriers comes from workers concerned that lack of anonymity in collective action might lead to negative repercussions, for example in terms of reputational profile or ability to access work on the platform; and from those employed in other jobs which limits their motivation for online labour-related activism (D'Cruz & Noronha 2016).

Alongside these attitudinal barriers are more systemic ones created by the nature and design of work organisation (De Stefano 2015, D'Cruz & Noronha 2016, Lehdonvirta 2016, Graham et al 2017a, Schmidt 2017), many of which are augmented by the presence of digital technologies (see Box 7). In practical terms there is the impossibility on most platforms of workers identifying and contacting each other *en masse*; meaning this must be done via other means and forums. In relation to disincentives, the highly-competitive nature of work organisation – potential oversupply of labour compared to available work; competition from low-wage economies and from inexperienced workers; atomisation of tasks and workers; primacy of price competition as the mechanism to win work; pressure of time schedules, delocalised dispersion of work and identities, etc – mitigates against collective action and means that, in the balance between competitive and cooperative logics (Heeks 2016), the former is dominant[28].

BOX 7: THE PROS AND CONS OF DIGITAL TECHNOLOGY

"Whilst exploitation is nothing new, we see innovative ways in which it is being put into practice with the aid of digital technologies: through bypassing legal regulations that afford worker rights to breaks, minimum wages, or proper disciplinary protocol; by ensuring the workers bear the risks of entrepreneurs, but rarely actually have any control over the means of production and distribution; by profitably and opaquely re-writing algorithms that program the daily work of an individual thousands of miles from their employer; by creating global markets with an enormous oversupply of labour power, thus weakening the bargaining power of workers; or by distributing workers in ways that inhibit their ability to communicate with one another." (Graham & Shaw 2017b:6)

As summarised in the quote above, and as illustrated in Figure 4, digital innovation is amplifying a whole set of trends which can have negative consequences or which can reduce the opportunities for interventions to address those problems: "In the shift from human to computer, management becomes automated, algorithms become employers, information asymmetries grow, and preexisting power imbalances are exacerbated." (Gearhart 2017:13). The greater difficulty of intervening is summed up in Graham & Shaw's (2017a) review of interventions. They give examples of local organising, litigation and platform cooperatives but almost all relate to the physical gig economy with few if any relating to the digital gig economy.

But innovations should not be seen as inevitable. There are alternatives and it is specific platform design decisions that, for example, enable sub-minimum wages, render procedural decision-making opaque, enable other information asymmetries, etc (Fieseler et al 2017).

[28] This is particularly a problem for contest-based crowdwork where average payments are far below minimum wage, where workers are "comparatively unhappy" (Schmidt 2017) but where the structural nature of competition makes it hard to intervene.

Innovations can also support the implementation of decent digital work standards. Examples (developed from Manyika et al 2015, Berg 2016, Graham et al 2017b, Graham et al 2017a, Mankar et al 2017, Taylor 2017) include:

- *Social Security*: enabling shared-contribution, per-task micro-payments from clients, platforms and workers that fund provision of social protection; and keeping a record of micro-payments and employment such that benefits are portable and can follow workers as they change job.
- *Social Dialogue*: providing the means by which workers can collectively communicate (as already occurs on various groups and forums); providing feedback – such as votes or suggestions – on proposed platform changes to interface design, work processes, or work organisation.
- *Worker Representation*: providing the means by which workers can collectively decide, present and negotiate on proposals and demands.
- *Decent Work Context*: using anonymised transaction data to enable tracing of digital services supply chains from original client to final worker in order to support client responsibility and accountability; providing policy-maker access to anonymised platform data to be used for the purposes of regulation, taxation and human resource development (e.g. training and education) planning.
- *Employment Opportunities*: providing automated or supporting human intermediation support for new workers; offering context-specific training assistance for workers that require task support; facilitating portability of worker histories and reputation profiles.
- *Security of Work*: automatically identifying and recommending worker status categorisation (employee vs. independent worker vs. independent contractor) depending on volume and frequency of work.
- *Equal Opportunity*: automated monitoring to flag potentially discriminatory task descriptions; automated monitoring of broader patterns to identify potential gender, age, geographic, etc discriminations in pay and task allocation.
- *Dignity and Respect at Work*: transparency of algorithmic management.
- *Adequate Earnings*: using IP address look-up to inform clients of minimum, living and average freelancer wages in the worker's jurisdiction; guiding piecework rates that meet minimum / living / average wage rates based on average completion times for similar tasks; automatically recalculating per hour payments to take account of average unpaid labour time and/or to build in paid work breaks.
- *Productive Work*: addressing work process information asymmetries and unpaid labour time via automated task assistants (like Turkbench which identifies new tasks using filters (e.g. pay rate) and provides alerts); addressing broader information asymmetries by providing a means to rate clients where not provided by the platform (like Turkopticon).
- *Safe Work Environment*: developing better machine learning-based means to filter pornographic and violent content.

Of course, workers have re-institutionalised by creating online forums but these largely focus on "sub-hegemonic" issues of how to maximise current system benefits more than discussing how to change the system (Schmidt 2017). While nearly one-fifth of US microworkers put collectivised forms of worker representation as their principal proposal to

improve the fairness of platform working (Fieseler et al 2017), in general "crowdworkers ... have little interest in either self-organisation or representation of their interests by trade unions." (Schmidt 2017:24). There seems to be a particular attitudinal barrier to unionisation among developing country workers. They contrast what they see as the merit-based nature of platforms and markets with the nepotism, corruption and factional interests associated with unions (D'Cruz & Noronha 2016); as one worker exemplifies:

> I am against the idea of a union. I kind of like it (the platform) right now because it is completely based on merit. Nobody like a freelancer union officer or someone you can bribe or 'oil' and then get a better job or something like that. (*ibid.*:57).[29]

To galvanise workers into action, then, particularly those in developing countries, a lot of work will be required. This will likely centre on the immanent issues identified above, making workers aware of the patterns and outcomes: the extent of their unpaid labour; the inequity of value captured by them as opposed to platforms and clients; the risks they bear; the information and control denied to them as compared to platforms; and so on.

Clients. When interventions are proposed in the literature, roles are traditionally ascribed to platforms, government, and workers/worker organisations. Yet descriptions of problems often place client-related issues at the top of the pile e.g. Fieseler et al (2017) describe low pay, poor or disrespectful communication, and poor task description as the top three problems identified by workers. All of these could be addressed through actions by clients and more generally, it appears that clients should much more often be included in the set of actors considered.

Two perspectives can be considered in relation to client willingness to bear additional costs in exchange for closer adherence to decent work standards. We currently know next to nothing about client views on either. First from an economic perspective, it is unclear how price-sensitive clients are to interventions that would add cost[30]. For example, adhering to minimum wage guidelines would add to costs in some cases. Addressing minimum wage legislation would also require oversight and analysis of each micro-task, which would add to costs (Schmidt 2017) albeit those costs might not be great if this could be automated. Providing for shared contributions to social security would add to costs. Providing a human dispute resolution system would add to costs. And so on. Assuming there is some price sensitivity of clients – and there is evidence of such both directly (UC 2014[31]) and indirectly in that around two-thirds of clients cite seeking lower cost as the main motivation behind their use of DGE platforms (Codagnone et al 2016) – then this would mean less work (and also in some cases more surveillance of workers) (Kingsley et al 2015).

[29] DGE workers in India also associated unions with "blue-collar factory work" (D'Cruz & Noronha 2016:60) and not with online labour.

[30] Considered here in terms of financial cost. We know that saving time is the second largest motivation for clients to use DGE platforms, so any interventions should try to avoid slowing down the work process (Codagnone et al 2016).

[31] This is a discussion thread in which at least some clients make clear a) that they are quite happy to pay sub-minimum wage levels for some types of work, and b) that they will no longer be using the platform as and when a minimum wage policy is introduced.

This might be offset by arguments about high-quality work, fewer disputes and less likelihood of litigation (threat of litigation against clients seems not to have been considered so far, despite their playing some part of an employer role). Offset could also come from the second perspective: the willingness of clients to route via platforms or schemes with an explicit ethical or fair trade orientation. Judging from the small size of the IT impact sourcing market within overall IT outsourcing, this represents only a niche opportunity (Schmidt 2017). Conversely, 59% of AMT-surveyed clients favoured paying at least the minimum wage (Mankar et al 2017).

The barriers to client-focused interventions are much as they are for workers: clients appear generally satisfied with work; atomisation of tasks discourages personal or other interventions due to the high relative size of overhead costs; atomisation, globalisation and opacity of clients makes them hard to contact or collectivise; and the domination of competitive logic likewise. And the client group itself may be relatively immune to pressure from other stakeholders: 90% of clients are micro-enterprises with 10 or fewer employees (Agrawal et al 2013) so the power of brand and reputation and potential for influence of client clients is limited. Some clients are larger including multinationals but they often work through client-side intermediaries and are thus not visible (Bergvall-Kareborn & Howcroft 2014).

Platforms. Platforms are the focus for most of the recommendations, proposals, codes and standards outlined above. Their motivations for adopting these measures are rarely interrogated with the only identified economic/legal rationale from the literature being the avoidance of economic costs that would be incurred if workers seek litigation against them (Harris & Krueger 2015). From broader literature around standards in the digital sector (Babin & Nicholson 2009, Heeks et al 2015) and more broadly (YCBE 2017), one identify further economic rationales. Adoption of standards can avoid loss of income if clients desert them or fail to join them due to reputational damage; and can avoid greater cost or difficulty of attracting capital investment in similar circumstances. For some platforms – though evidence is so far limited to the physical gig economy – it can be economically rational to move workers from independent contractor to employee status, as some platforms have done (Berg 2016). This is estimated to add 20-30% to hourly costs but seen as at least recouped through higher retention and training benefits. Higher standards might also attract a better quality of worker, which could in turn allow the platform to attract higher-value clients and tasks[32].

In terms of the Figure 5 pyramid, one should not assume the dominance of competitive logic and the absence of social and ethical rationales among platform owners. All platform operators embody some mix of competitive and cooperative logics, and in some the latter is relatively strong (particularly those working in online impact sourcing). In such cases, platforms are likely to already be adhering to some decent work standards, and would have little difficulty in meeting a typical set of decent digital work standards[33]. Likewise some

[32] YCBE (2017) also claims that firms adopting ethical standards are more resilient, and have new opportunities for networking and partnership.

[33] For example, Lehdonvirta (2016) gives the example of CrowdFactory, operating in Nepal, which seeks to arrange a regular supply of work paid at above minimum wage, where workers are given job titles, managerial communication is above the norm, and workers are organised into five-person teams. Likewise the worker

platforms have already signed up to codes of conduct e.g. those in Germany signed up to the Frankfurt Declaration (FairCrowdWork 2016).

In these latter cases, there appears to be intrinsic motivation, probably emanating from senior managers. In analogous situations in digital sector firms (Heeks et al 2015), alongside senior managers, full-time staff of the company have also been a driver to ethical behaviour. As yet this latter group appears completely invisible in the literature; a possible pro-intervention resource as yet untapped.

More traditionally, pressure on platforms would come from external sources. They will be most susceptible to economic rationale pressures, for which clients are by far the most likely source (*ibid.*): as noted above, these are an as-yet untapped source. Legal rationale pressures will come from governments, though they are only just waking up to the realities of the digital gig economy. Worker pressure could come via collective organisation – collectivisation in existing unions, in looser online groups and networks, or in non-traditional groups such as the Freelancers Union – and collective action such as online strikes, virtual picket lines and mass messaging of platforms (Graham et al 2017a, Graham et al 2017b). As noted, though, the appetite of workers for such actions as yet appears muted.

Decent work standards are, in general, not directly experienced by external stakeholders. Hence it is the perception of those standards which matters, and their entanglement with other intangibles like brand and reputation (Heeks et al 2015). Because of this, there are incentives to "greed-washing" in the gig economy (Youngdahl 2016): that is, to platforms very publicly signing up to standards but making few if any actual changes in practice. To counteract this "ethics as performance" stance, codes would require "legal enforceability, independent and transparent monitoring of compliance, and meaningful involvement of worker representatives" (*ibid.*).

Other barriers to action by platforms are the general weakness of the pressure points noted above. Pressure on platforms is reduced further by some of the trends enabled by digitality:

- the fragmentation of work which makes it hard for platforms to justify any task-level interventions (such as trying to calculate minimum wage payments for piecework tasks[34]);
- the globality of the platforms such that they cross national borders when most pressure is still applied nationally;
- the virtuality and hence invisibility of work, of work organisation and of work organisations (so work, management and platform operators themselves are hard to see or pin down);
- the tendency to oligopoly and hence power relative to other stakeholders induced by network and scale effects due to the scale of available labour supply, the scale of available demand, the scale of trust and reputation, the value of data captured by platform, and other scale economies (Huws 2017).

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organisations of FairCrowdWork (2016:9) state, "In our conversations with them, we find that many platform operators wish to create good jobs that serve the long-term needs of both clients and workers, not socially unsustainable arrangements".

[34] Though some platforms do do this.

Government. For developing country governments, Kuek et al (2015) recommend the following:

- Ensure there is a digital gig economy strategy, including taxation policy.
- Intervene to provide access to DGE employment with initiatives on worker skills and awareness/knowledge and technical infrastructure (electricity, Internet, devices).
- Start with a managed approach using either a managed services platform or an intermediary supporting workers with access to open services platforms.
- Generate demand among local public and private organisations.
- Reduce the barriers to establishment of local platforms.
- Balance wage and other labour interventions with impact on growth of online outsourcing.

These reflect government's fiduciary role, balancing the interests of different stakeholders, and these measures are likely to be readily accepted since they have a rationale of employment creation and economic growth that fits easily into political agendas.

Government is one of the few, if not only actors able to take a longer-term perspective e.g. covering the immanent aspects of the digital gig economy. Graham et al (2017b) lean in this direction by advocating licensing of platforms in each client country of origin, enforcing legal accountability of platforms for impacts of work, and enforcing legal accountability of clients for impacts of their online labour supply chains. But these and other decent digital work standards face a political barrier. While platforms have the money and power to lobby governments against such measures, there is little political impetus and hence little political will in their favour. DGE workers – even were they minded to support political action – lack both political visibility and voice (Graham et al 2017a).

Governments attempting to impose standards also face the race to the bottom danger that imposing additional costs in one country will simply cause work to flow to lower-cost destinations. One solution would be action at an international level, with ILO activity and presence on this issue within its Future of Work initiative a potential seeding point.

Other Actors. Traditional unions are taking note of the digital gig economy: for example, they were the progenitors of the Frankfurt Declaration (FairCrowdWork 2016). And new unions involved with the physical gig economy (Gearhart 2017, McClenahan 2017) could extend their remit to the whole gig economy. These examples are all from the global North and there is no evidence of developing country unions taking on DGE issues. Perhaps global North unions could break out of their traditional geographic constraints. Alternatively – and given the persistence of national identity in DGE work when other forms are atrophying (Lehdonvirta 2016) – global unions such as the UNI Global Union could support and encourage more action from their affiliated unions in the individual nations of the global South (Colclough & Jennings 2017).

Other civil society organisations could play a role though, other than academics – who have been particularly active in this arena – there are no other obvious actors involved at present.

D. Next Steps: Action and Research

The following next steps can be identified to develop the idea of decent work standards in the digital gig economy, and to strengthen the underlying evidence base.

1. Surveying Stakeholder Views. Research to understand more about motivations and implications of proposed decent work standards across the range of stakeholders, including:

- Clients: appetite for decent digital work standards and/or a fair trade brand; value and viability of proposed measures.
- Platforms: costs and benefits and viability of proposed measures. For those already involved in a code: what they are doing differently as a result and their reflections on this.
- Platform staff: their interest in application of decent work standards by their employers.
- Workers: priorities from among the measures proposed.
- Government: the importance or otherwise of DGE decent work.

2. Multi-Stakeholder Dialogue. Discussion of the proposed measures and their implementation with representatives of clients, platforms, workers, worker associations and other stakeholders including government.

3. Outreach to Existing Codes and Standards. Discussion with the existing digital gig economy code stakeholders (FairCrowdWork 2016 and Testbirds 2017); identification of and engagement with other relevant gig economy codes and standards; discussion to see if digital (gig) economy variants of the ETI Base Code or SA8000 could be developed.

4. Specific Stakeholder Outreach. Discussion with international unions, their local affiliates, new worker associations and active online groups, to identify locus for support and action. Discussion with ILO to integrate existing (digital) gig economy activity within the Future of Work initiative. Discussion with Global Impact Sourcing Coalition about integration when building fair work standards upwards from those in the impact sourcing space and building decent digital work standards downwards from existing DGE platforms.

5. Broader Research on Interventions. Investigating the impact of guidelines, litigation, codes and standards in the digital gig economy; and analysing the costs and benefits of interventions at micro- and macro-level.

6. Longer-Term Research. The longer-term research agenda on the digital gig economy includes work to investigate (Agrawal et al 2013, Beerepoot & Lambregts 2015, Codagnone et al 2016, Graham et al 2017a):

- Broader and longer-term distribution of value and welfare effects of the digital gig economy: creation, flow and capture of value across the value chain including platform profits and true worker earnings over time; balance of private and social benefits; distribution of value capture between and within countries; impact on levels and types of inequality.

- Macro-impacts of digital gig employment e.g. on traditional employment, on overall wage levels, on national productivity, on the national and international geography of work.
- Local linkages and spillover effects of the digital gig economy.
- Longer-term patterns: worker lives and livelihoods including extent of full-time/primary-income working over time; capability and career development both within and catalysed by the digital gig economy.
- Usage, role and impact of worker groupings: on-platform community forums, social media groups, dedicated portals, unionisation.
- Commonalities and differences to physical gig economy work.
- How the design of platforms, markets and work processes impacts behaviour and outcomes.
- Details of the work process: how clients design task descriptions, how workers identify and bid for work, the process of negotiation and communication, how individual tasks are completed.

7. Addressing Evidence Base Challenges. Alongside the general requirement for research as listed above, there is a specific need to address the evidence base challenges identified in Box 2:

- Paucity: more quantitative data, and more research specifically on the digital gig economy in developing countries.
- Stakeholder Skew: more research on the views and actions of clients, platforms, platform staff and other stakeholders including government, international agencies, unions, etc.
- Labour Skew: evidence from the iceberg under the surface – the majority of non-workers who have tried and failed to make a living via DGE platforms, and the majority of workers who work only occasionally.
- Platform Skew: more evidence from under-represented platforms – in general terms, anything other than AMT, and more specifically platforms like Freelancer, Crowdsource, and non-global North platforms such as Zhubajie and its English-language subsidiary, Witmart.

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Appendices

Note: sources are classified in terms of their relation to the digital gig economy: corresponding exactly to the set "digital gig economy", or representing a sub-set (e.g. one platform or one type of DGE work), or representing a super-set (e.g. the whole of the gig economy).

Appendix 1: Categorisation of Digital Gig Economy Problems

1a. Employment Context

	Focus & Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs								
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews								
TBR (2013)	Sub-set: AMT workers; Source: survey;								
Bergvall-Kareborn & Howcroft (2014)	Sub-set: AMT; Source: literature review				Lack of worker association	Lack of collective bargaining			
Berg (2016)	Sub-set: micro-workers; Source: survey and literature review	Lack of health insurance or pension							

	Focus & Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
Brawley & Pury (2016)	Sub-set: AMT workers; Source: survey;								
D'Cruz & Noronha (2016)	Sub-set: India Upwork workers; Source: interviews								
Martin et al (2016)	Sub-set: US/India AMT workers; Source:; survey and [literature review]								
Aloisi 2015	Super-set: gig economy; Source: literature review								
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review				Reduced opportunities for worker association				
Codagnone et al (2016)	Super-set: gig economy; Source: literature review	Lack of social protection					Power asymmetries between workers and clients / platforms		
Fidler (2016)	Super-set: platform economy; Source: literature review	Reduced access to benefits							
Schmidt (2017)	Super-set: gig economy; Source: literature review								

1b. Employment

	Focus & Source	Employment Opportunities	Career Development	Stability of Work	Employment Status	Discrimination	Dignity and Respect at Work	- Privacy	- Dispute resolution
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs		Seen as constrained due to info asymmetries: at least unable to perform typical value chain upgrade strategy of getting close to client and take on higher value-added work [some do this by moving outwith platform, but can't within platform]			Three types: - task descriptions excluding certain countries - perceptions that 1W workers get more jobs - ignorance of clients about DC capabilities			
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews					Perceptions of discriminatory actions but "our quantitative analyses did not uncover evidence of so-called "taste-based discrimination", that is, clients who would devalue workers from low- and middle-income countries regardless of their skill and track record." (p8)			

	Focus & Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
TBR (2013)	Sub-set: AMT workers; Source: survey;								Absence of appeals and dispute resolution mechanism
Bergvall-Kareborn & Howcroft (2014)	Sub-set: AMT; Source: literature review								
Berg (2016)	Sub-set: micro-workers; Source: survey and literature review			Lack of sufficient work and uncertainty about work		Perceived discrimination due to ability to block tasks from non-US workers	Poor treatment by requesters e.g. around work rejection or non-payment		Lack of intervention from platforms to resolve problems of work rejection / non-payment
Brawley & Pury (2016)	Sub-set: AMT workers; Source: survey;								Lack of means to resolve disputes with requesters
D'Cruz & Noronha (2016)	Sub-set: India Upwork workers; Source: interviews					Perceptions of preference for 1W workers because seen as more experienced; Some abusive comments off-platform (but little hard evidence provided)			

	Focus & Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
Martin et al (2016)	Sub-set: US/India AMT workers; Source:; survey and [literature review]	Challenges for Indian Turkers because of constraints on English language skills, bandwidth and infrastructure reliability; and device issues (e.g. trying to do jobs on a phone not PC)	[Lack of career progression]			For Indian Turkers: perceived inequality when tasks are US-only; Perceived discrimination around pay rates and progression to higher levels	[Poor treatment e.g. rejection of work]		[Poor grievance handling]
Aloisi 2015	Super-set: gig economy; Source: literature review		Lack of portability of ratings / reputation / experience profile		Current status removes many protections				
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review				Contradictory nature of independent contractor status	Potential discrimination (not evidenced)			
Codagnone et al (2016)	Super-set: gig economy; Source: literature review			Unstable flow of work		Gender and ethnic discriminations		Violations of worker privacy	

	Focus & Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
Fidler (2016)	Super-set: platform economy; Source: literature review			Unstable schedules of work		New discriminations			
Schmidt (2017)	Super-set: gig economy; Source: literature review							Lack of data protection	Poor mechanisms for resolving problems

1c. Work Conditions

	Focus & Source	Adequate Earnings	Work Process	Working Hours	Health and Safety
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs		Info asymmetry: lack knowledge of the client, their context, purpose and meaning of tasks, etc e.g. clients not answering questions		
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews		70% would like to know more about the requester	Just over half feel they work at very high speed	
TBR (2013)	Sub-set: AMT workers; Source: survey;	Poor/unfair pay levels and delayed payments	Poor task descriptions in terms of what needs to be done, why and to what standard - Poor communication from requesters and platform - Absence of requester profiles - Opacity/lack of clarity on rejections, blocks and suspensions		
Bergvall-Kareborn & Howcroft (2014)	Sub-set: AMT; Source: literature review		Info asymmetry that workers can't see client or full task details - Opacity of work process		
Berg (2016)	Sub-set: micro-workers; Source: survey and literature review	Low pay			
Brawley & Pury (2016)	Sub-set: AMT workers; Source: survey;	Low pay	Rejection of work - Poor feedback from clients - Poor task design or specification (e.g. takes longer than indicated)		

	Focus & Source	**Adequate Earnings**	**Work Process**	**Working Hours**	**Health and Safety**
D'Cruz & Noronha (2016)	Sub-set: India Upwork workers; Source: interviews	Cost of paying for own infrastructure - Non-payment for "sample" project work (though much of this off-platform)	Poor communication from clients; Alterations to task briefs	Time required for checking job/preparing bids; Best time for checking 12-3am India time	
Martin et al (2016)	Sub-set: US/India AMT workers; Source:; survey and [literature review]	Low pay [Low pay, and late payment]	Opacity of progression to higher levels, of job rejection, of suspension from platform [Poor feedback and interaction]	Having to work at night in India to fit US job posting times - Unpaid "interpretive labour": time spent trying to understand and accommodate requester needs, including asking others on forums [Unpaid time searching for work and learning skills / the system]	
Aloisi 2015	Super-set: gig economy; Source: literature review				
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review				
Codagnone et al (2016)	Super-set: gig economy; Source: literature review		Information asymmetries between workers and clients / platforms		
Fidler (2016)	Super-set: platform economy; Source: literature review	Lower earnings than traditional work	Lack of interaction with co-workers		
Schmidt (2017)	Super-set: gig economy; Source: literature review	Problem of low wages	Lack of transparency		Having to view and check violent and pornographic content

Appendix 2: Categorisation of Digital Gig Economy Intervention Recommendations

2a. Employment Context

	Focus and Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
Kittur et al (2013)	Set: digital gig economy; Source: survey and literature review								
Kuek et al 2015	Set: digital gig economy (govt policy); Source: survey and literature review			Have a policy on taxation of workers and platforms			Start with intermediated or managed service platform		Reduce regulatory barriers to setting up of OO platforms
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs	Protections for those employed for a certain period of time [or number / value of tasks]			Organised workers via unions or social movements		Cooperatively-managed platforms	Certification schemes	

	Focus and Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews				Leverage existing groupings: trade unions, online groups/networks, non-traditional groups such as Freelancers Union	Worker input on new design / process / mgmt changes - Consider potential for online solidarity actions e.g. online strikes and picket lines	Support for platform cooperatives	Hold clients and platforms responsible for impact of online outsourcing	Consider licensing platforms in client country of origin
TBR (2013)	Sub-set: micro-work; Source: survey								
Berg (2016)	Sub-set: micro-work; Source: survey and literature review		"Individual security accounts" (though notes may be a quite US-specific notion)						
Cherry & Poster (2016)	Sub-set: micro-work; Source: literature review								
Fieseler et al (2017)	Sub-set: (US) micro-work platforms; Source: survey				Some form of worker representation				

	Focus and Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
D'Cruz (2017)	Sub-set: (Indian) online freelancing; Source: interviews				New forms of collectivisation, inc. new forms of union membership				Intervention / action by ILO
Aloisi 2015	Super-set: gig economy; Source: literature review					"Promoting forms of collective engagement between workers, clients and platform"			Avoid child or forced labour
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review		Universality and portability of social protections		Freedom of association for gig workers	Collective bargaining for gig workers - Where workers are treated as micro-entrepreneurs, removal of competition / anti-trust laws that would regard collective action as anti-competitive collusion			No child or forced labour
Manyika et al (2015)	Super-set: online labour platforms; Source: literature review		More portable benefits						

	Focus and Source	**Social Protections**	**- Portable benefits**	**- Fair contribution inc. taxation**	**Freedom of Association**	**Social Dialogue**	**Platform Governance**	**Accountability**	**Other Legislation and Rights**
Huws (2017)	Super-set: gig economy; Source: literature review	Include local social protection for workers; - Provide liability insurance			Enable rights of association		Develop locally-owned platforms		
Schmidt (2017)	Super-set: gig economy; Source: literature review	Sharing of costs of social protection by workers, clients and platforms			Create or join digital labour organisations		Platform cooperativism as niche for ethical clients		

2b. Employment

	Focus and Source	Employment Opportunities	Career Development	Stability of Work	Employment Status	Discrimination	Dignity and Respect at Work	- Privacy	- Dispute resolution
Kittur et al (2013)	Set: digital gig economy; Source: survey and literature review		Clear career ladders (hierarchy based on reputation / experience) - Facilitation of learning						
Kuek et al 2015	Set: digital gig economy (govt policy); Source: survey and literature review	Intervene on access to job opportunities re skills and awareness/knowledge of workers and technology infrastructure (devices, Internet, electricity)		Generate demand among local private and public organisations					
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs								

	Focus and Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews		Worker ownership (and portability) of their data		Three-tier/differentiated contracts: self-employed contractor (entrepreneurial who attract multiple clients); self-employed worker (in-between); employed worker (dependent)	Consider removing identification of nationality			
TBR (2013)	Sub-set: micro-work; Source: survey		Clarity on progression to higher platform levels						Clear appeals and dispute resolution mechanism
Berg (2016)	Sub-set: micro-work; Source: survey and literature review			Organise work to ensure steadier flow	Move towards employee model with training, guidance, etc.				
Cherry & Poster (2016)	Sub-set: micro-work; Source: literature review				Notes in US FLSA terms there are elements of online labour that point to employee, and elements that point to indep. contractor; could see as an argument for intermediate / hybrid status				Appeals process e.g. for non-payment by client or poor rating e.g. jury of peers or external ADR mechanism

	Focus and Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
Fieseler et al (2017)	Sub-set: (US) micro-work platforms; Source: survey		Ways to advance career						Dispute settlement mechanism
D'Cruz (2017)	Sub-set: (Indian) online freelancing; Source: interviews								
Aloisi 2015	Super-set: gig economy; Source: literature review		Make ratings "portable" across platforms, leading to a comprehensive "digital identity" - No exclusivity clauses tying workers to one platform		US judgement on having features of both employee and independent contractor; and could seek "independent worker" third category	Ban discrimination			
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review		Portability of worker ratings		Press for employee status (Hybrid/intermediate categorisation not supported because too hard to define and would fall short of full employment rights)	No discrimination			

	Focus and Source	**Employment Opportunities**	**Career Development**	**Stability of Work**	**Employment Status**	**Discrimination**	**Dignity and Respect at Work**	**- Privacy**	**- Dispute resolution**
Manyika et al (2015)	Super-set: online labour platforms; Source: literature review	Better broadband access			Resolve employee vs. contractor question			Resolve question of data ownership	
Huws (2017)	Super-set: gig economy; Source: literature review		Provide training for workers	Create secure jobs			Ensure decent working conditions	Ensure (data) privacy of gig workers	Ensure mechanisms of redress
Schmidt (2017)	Super-set: gig economy; Source: literature review								

2c. Work Conditions

	Focus and Source	Adequate Earnings	Work Process	Working Hours	Health and Safety
Kittur et al (2013)	Set: digital gig economy; Source: survey and literature review		Better task design including quality assurance		
Kuek et al 2015	Set: digital gig economy (govt policy); Source: survey and literature review	Balance minimum wage against impact on demand / growth of online outsourcing			
Graham et al (2017a)	Set: developing country digital gig economy; Source: multi-stakeholder interviews and platform logs	Minimum hourly wage			
Graham et al (2017b)	Set: developing country digital gig economy workers; Source: survey and interviews				
TBR (2013)	Sub-set: micro-work; Source: survey	Fair pay and payment on time	More task detail including quality standards required - Better communication from requesters and from platform - Ratings profiles and reviews of requesters - Clarity on rejections, blocks and suspensions criteria and procedures		
Berg (2016)	Sub-set: micro-work; Source: survey and literature review	Pay minimum wage		Allow paid work breaks	

	Focus and Source	**Adequate Earnings**	**Work Process**	**Working Hours**	**Health and Safety**
Cherry & Poster (2016)	Sub-set: micro-work; Source: literature review	Fair wages (minimum wage argument of US origins for FLSA to avoid race to bottom during times of hyper-competition due to labour supply-demand mismatch)	Disclosure and transparency around nature of task, fair estimates of time and wages, and larger goals of microtasks (though poor / little evidence around transparency on wider goals / purpose of tasks) - Transparency around worker ratings		
Fieseler et al (2017)	Sub-set: (US) micro-work platforms; Source: survey	Minimum wage	Greater information about requesters - More humanistic communication with workers		
D'Cruz (2017)	Sub-set: (Indian) online freelancing; Source: interviews				
Aloisi 2015	Super-set: gig economy; Source: literature review				
De Stefano (2015)	Super-set: (mainly digital) gig economy; Source: literature review		Transparency of worker ratings and other procedures		Ensure health and safety of gig workers
Manyika et al (2015)	Super-set: online labour platforms; Source: literature review				
Huws (2017)	Super-set: gig economy; Source: literature review			Ensure good, sustainable work-life balance	Ensure health and safety of gig workers
Schmidt (2017)	Super-set: gig economy; Source: literature review	Seek minimum wage	Greater process transparency inc. terms of service		

Appendix 3: Categorisation of Digital Gig Economy Intervention Guidelines: Proposals, Codes and Standards

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Content	"Frankfurt Paper on Platform-Based Work"	"FairWork Foundation"	"Ground Rules for Paid Crowdsourcing / Crowdworking"	"Fifteen Criteria for a Fairer Gig Economy"	"10 Strategies for a Workable Future"	"The Future of Work in the 'Sharing Economy'"	"Towards Inclusive, Empowering Digital Labour Markets"	"Good Work: The Taylor Review of Modern Working Practices"	FTSF Standards	"Performance Measurement for Impact Employment"	"Good Work Code"
Focus, Type & Origin	Set: digital gig economy Type: proposals Origin: (European) trade unions	Set: digital gig economy Type: proposals Origin: (UK) academia	Set: digital gig economy Type: code Origin: (German) platforms	Super-set: (mainly digital) gig economy Type: proposals Origin: (European) worker orientation	Super-set: platform economy Type: proposals Origin: (US) multi-stakeholder group	Super-set: gig economy Type: proposals Origin: international organisation	Super-set: gig economy Type: proposals Origin: (global) trade union	Super-set: (UK) gig economy Type: proposals Origin: multi-stakeholder group	Adjacent: software offshoring Type: standards Origin: (European) industry	Adjacent: IT impact sourcing Type: metrics Origin: (US) non-profit body	Adjacent: physical gig economy (domestic workers) Type: code Origin: (US) workers association

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Social Protections	"Regardless of employment classification, platform-based workers should have access to social security protections — public and/or private, as nationally appropriate — including unemployment insurance, disability insurance, health insurance, pension, maternity protection, and compensation in the event of work-related illness or injury." (p7)	Appropriate social protections				Provide health insurance and liability insurance - Other social protection	Paid holiday and sick leave	Better protections with stronger incentives for firms to treat workers fairly	Sick, annual and maternity leave policy	Benefits provided (life/health insurance, leave, childcare, pension)	
- Portable benefits	Benefits should be portable				Reinvent benefits to follow workers everywhere	Portability of benefits		"Flexible entitlements"			

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
- Fair contribution inc. taxation	"Contributions to relevant [*social protections*] accounts should be shared — as appropriate by national context — between workers, platforms, clients, and the state, and should be pro-rated, portable, and, if nationally appropriate, mandatory" (p7)	"FairWork Premium" paid into three collective funds: spending by local groups of workers; to nurture platform cooperatives; cross-platform client and worker rating system - Client fee for certification				Consider contributions from clients and platforms	Payment of social contributions and taxes by platforms - Payment into a worker training fund	Consistent taxation of labour [not platforms]			
Freedom of Association	"Right to organize" including address laws that prohibit organisation and negotiation of collective agreements (e.g. competition law for independent contractors)				Support ways for workers to bring their voices together						

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Social Dialogue	"Co-operative labor-management relations"		Allow communication between workers	Legally-binding means of collective discussion with platform			Collective bargaining				Workers to be "heard and respected" Support and connection for workers
Platform Governance					Advocate platform models that combine commercial and social logics						Shared prosperity: worker benefits from platform profitability
Accountability	Better information for policymakers about "the number and value of transactions conducted over online labor platforms, the geographical locations and demographics of clients and workers" (p8)	Two levels of certification: bespoke (for individual client firms to certify whole digital supply chain) and ongoing (for small/individual clients)			Champion a Good Work Code supported by platforms		Clients should take responsibility across value chain		"In addition to its economic and financial goals, the company acknowledges and abides by its social responsibilities and specifically aims to enhance the empowerment and wellbeing of its workers, as well as to protect the environment."		

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Other Legislation and Rights	Compliance with national law		"1. Tasks in conformance with the law"						Compliance with all national laws Environmental sustainability in terms of e-waste and energy usage - Freedom from forced and child labour - CSR-type activities to benefit the wider community	Community development programmes	
Employment Opportunities					Provide access for marginalised with lower digital access and skills					Employment of disadvantaged workers	
Career Development				Ability to see and export work history and reputation profile	Create opportunities for worker advancement - Support worker-owned identities - Platform-based support for learning		Platforms take responsibility for worker training, including apprentice-ships	Record and enhance worker capabilities	Training to be provided for workers	Training provided - Extent of promotions - Nature of post-job employment	Allow workers "to grow and learn at work"
Stability of Work			"7. Freedom and flexibility": workers should not have negative consequences for turning down tasks.						Provision of regular work		Combination of stability and flexibility to allow work-life balance

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Employment Status	"Clarification of employment status": classify as employees if workers are de facto employees; allow flexibility for workers to choose where on employee—indep. contractor continuum they lie		"2. Clarification on legal situations" – inform workers about their legal and tax status	Classify as employees if workers are de facto employees		Consider hybrid status		New hybrid 'dependent contractor' status	Permanent employment status		
Discrimination						Avoid discrimination of gender, ethnicity, race and age			Freedom from discrimination and from improper mgmt discipline/coercion		
Dignity and Respect at Work			"5. Respectful interaction": of all parties	Human review of all worker deactivations - Do not use non-payment rates as part of worker quality measurement		Do not deactivate based on worker acceptance rate of jobs - Limit kind and frequency of technological controls			Treat workers with respect		
- Privacy			"10. Data protection and privacy" for both clients and workers		Support individual worker privacy	Protection of privacy in use of data					

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
- Dispute resolution	"transparent, accountable methods for resolving disputes" (p8)			Human review of worker challenges re non-payment, work rejection, test outcomes, deactivation - Neutral third party dispute resolution mechanism					Grievance procedure for workers		
Adequate Earnings	"pay at least minimum wage (after expenses, before taxes) in the worker's jurisdiction" (p7)	Living wage	"3. Fair payment ... a fair and appropriate wage" taking account of task type, qualifications needed, and local context Be clear on timing of payment and of any pro-bono tasks Never ask worker for payment	Clear rules on non-payment Clear terms of payment for each task Pay minimum wage and preferably local living/median wage Technical problem costs/delays should not be borne by workers		Minimum wage		Living wage as minimum	"Fair market price" for contract paying at or above national minimum wage Timely payment and deductions only with permission	Average wage to minimum wage ratio	"Fair pay and benefits"

	FairCrowdWork (2016)	***Graham (2017)***	***Testbirds (2017)***	***Silberman (2017)***	***ITTF (2015)***	***Codagnone et al (2016)***	***Colclough & Jennings (2017)***	***Taylor (2017)***	***Fair Trade Software Foundation (2012)***	***IRIS (2014)***	***NDWA (2015)***
Work Process	Transparency of "processes for assigning tasks (if tasks are assigned to workers by the platform), computing worker reputation and other qualifications, evaluating work, and taking actions such as account closure (the online equivalent of dismissal) based on client ratings of worker performance." (p8) - Better information for workers "about who they are working for and the final application of their work"	"user-generated platform (*FairWiki*) designed to 'name and shame' firms linked to questionable production practices and poor labour rights issues"	"4. Motivating and good work": a "user-friendly and intuitive platform" and ability to request support; also give experience points, FAQs/forums, training possibilities "6. Clear tasks and reasonable timing" - "8. Constructive feedback and open communication" - "9. Regulated approval process and rework": written and transparent process for task approval, and allow re-work where feasible	Review of task instruction by platform before publication Client non-payment rates should be visible Prompt, polite, substantive client and platform response to workers, with set norms - At least general-terms details about clients and work purpose	Greater platform transparency				Workers made aware of rights and responsibilities	Working conditions inc. task variety and job satisfaction	"transparent about requirements, performance and the rules"
Working Hours						Maximum number of hours set			Compliance with national working hours directives / laws Minimum of one day off per week	Average hours worked	

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Health and Safety				Clearly label tasks that may be psychologicall y stressful, with access to support and counselling via platform		Some forms of health and safety measures		"More proactive approach to workplace health"	Meet occupational health and safety requirements		Safety at work
Code Governance	"Continuous improvement" towards the standards of "good work"		This is a code of conduct: "general guidelines about how to act in regards to crowdwork"; signatories "commit to follow the indicated principles and to promote them within their company as well as with collaborating parties"; "code of conduct is voluntary and self-regulated"						Yearly report Some "flexibility of interpretation" Responsible senior managers, who inform all staff and devote time to achievement		