Digital labour platforms and the future of work

Towards decent work in the online world

Janine Berg • Marianne Furrer • Ellie Harmon
Uma Rani • M Six Silberman

International
Labour
Organization

Digital labour platforms and the future of work

Towards decent work in the online world

Digital labour platforms and the future of work

Towards decent work in the online world

FOREWORD

One of the major transformations in the world of work over the past decade has been the emergence of online digital labour platforms. This new form of work has not only disrupted existing business models but also the employment model upon which these business models relied. Work on digital labour platforms provides workers the opportunity to work from any place, at any time and take up whatever jobs suits them. However, there are also some risks from engaging in such work with regard to their status of employment, whether they receive adequate income, social protection and other benefits. The opportunities and risks that the workers face raise questions about what motivates these workers to undertake this form of work. Do these motivations vary across different parts of the world? And what are the consequences for workers of engaging in this form of work?

To investigate some of these questions the ILO Research Department along with the Inclusive Labour Markets, Labour Relations and Working Conditions Branch (INWORK) carried out two surveys in 2015 and 2017, covering 3,500 workers living in 75 countries around the world and working on five major globally operating microtask platforms. This was supplemented with in-depth interviews and other qualitative surveys undertaken by researchers at IG Metall. The survey focused on microtask platforms, wherein businesses and other clients have access to a large, flexible workforce ("crowd") who are geographically dispersed around the world to undertake short, simple and mostly clerical tasks and are remunerated on the basis of task or piece completed.

Based on the survey findings, this report provides one of the first comparative studies of working conditions on microtask platforms. It presents the basic characteristics and motivations of workers to undertake these tasks, and finds both commonalities and differences between workers from the global North and global South. The report analyses the working conditions on these micro-task platforms and advances a series of principles for improving working conditions on digital labour platforms.

This report will be helpful to the ILO's Future of Work Initiative and aims to support the work of the Global Commission on the Future of Work, an independent commission convened by the Director-General of the International Labour Organization in August 2017. The views expressed in this report are those of the authors and do not necessarily represent the views of the ILO.

Damian Grimshaw
Director, Research Department

CONTENTS

FIGURES

TABLES

BOXES

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

One of the most prominent transformations in the world of work during the past decade is the emergence of digital labour platforms. They include both web-based platforms, where work is outsourced through an open call to a geographically dispersed crowd ("crowdwork"), and location-based applications (apps) which allocate work to individuals in a specific geographical area. While digital labour platforms are a product of technological advances, work on these platforms resembles many long-standing work arrangements, merely with a digital tool serving as an intermediary.

This report presents the results of an ILO survey of working conditions covering 3,500 workers living in 75 countries around the world and working on five English-speaking microtask platforms. Microtask platforms are a type of web-based labour platform that provide businesses and other clients with access to a large, flexible workforce (a "crowd") for the completion of small, mostly clerical tasks, that can be completed remotely using a computer and Internet connection. These tasks are diverse, including image identification, transcription and annotation; content moderation; data collection and processing; audio and video transcription; and translation. Clients use the platforms to post bulk tasks that need completion; workers select the tasks and are paid for each individual task or piece of work completed. The platforms pay the workers the price indicated by the client minus their fee.

This report provides one of the first comparative studies of working conditions on microtask platforms, including pay rates, work availability, work intensity, rejections and non-payment, worker communication with clients and platform operators, social protection coverage and the types of work performed. The survey, conducted in 2015 and 2017, has a global reach, with workers from developed and developing countries, and finds both commonalities and differences between workers from the global North and global South. The findings highlight both benefits and drawbacks to the work, and advances a series of principles for improving working conditions on digital labour platforms.

Like most digital labour platforms, the microtask platforms studied have chosen to classify their workers as self-employed, which has had the effect of depriving workers of the protections of labour and social security law. The terms and conditions of working on the platforms are laid out in the platforms' "terms of service" documents, which workers must accept in order to begin working. These terms purport to govern issues such as how and when crowdworkers will be paid, how work will be evaluated and what recourse workers have (or do not have) when things go wrong.

Who are the crowdworkers?

■ Workers of all ages are engaged in crowdwork. Among the survey respondents, the average age was 33.2 years.

■ There were gender differences in the propensity to do crowdwork, with women representing only one out of every three workers. In developing countries, the gender balance was particularly skewed, with only one out of five workers being a woman.

■ Crowdworkers are well educated: fewer than 18 per cent had a high school diploma or less, one-fourth had a technical certificate or some university studies, 37 per cent had a bachelor's degree and 20 per cent had a postgraduate degree.

■ Among degree holders, 57 per cent were specialized in science and technology (12 per cent in natural sciences and medicine, 23 per cent in engineering and 22 per cent in information technology); an additional 25 per cent were specialized in economics, finance and accounting.

■ 56 per cent of survey respondents had performed crowdwork for more than a year; 29 per cent had crowdworked for more than three years.

Reasons for doing crowdwork

■ The two most important reasons for crowdworking were to "complement pay from other jobs" (32 per cent) and because they "prefer to work from home" (22 per cent).

■ There were strong differences by gender for those who could "only work from home" due to care responsibilities, with 13 per cent of women workers giving this reason compared to 5 per cent of men.

■ Ten per cent of respondents indicated that they had health conditions that affected the type of paid work they could do. For many of these workers, crowdwork provides a way to continue to work and earn an income.

How do the workers fare?

■ The ILO survey finds that on average across the five platforms, in 2017, a worker earned US$4.43 per hour when only paid work was considered, and US$3.31 per hour when total paid and unpaid hours were considered.

■ Median earnings were lower, at just US$2.16 per hour when paid and unpaid work were considered.

■ Nearly two-thirds of American workers surveyed on the Amazon Mechanical Turk platform earned less than the federal minimum wage of US$7.25 per hour; only 7 per cent of German workers surveyed on the Clickworker platform reported earnings above the German minimum wage of €8.84 per hour, taking into consideration paid and unpaid hours of work.

■ Workers in Northern America (US$4.70 per hour) and Europe and Central Asia (US$3.00 per hour) earned more than workers in other regions, where earnings varied between US$1.33 (Africa) and US$2.22 (Asia and the Pacific) per hour of paid and unpaid work.

Low earnings are in part due to time spent searching for work

■ On average, workers spent 20 minutes on unpaid activities for every hour of paid work, searching for tasks, taking unpaid qualification tests, researching clients to mitigate fraud and writing reviews.

■ 88 per cent of respondents would like to do more crowdwork – on average wanting 11.6 more hours per week. Workers averaged 24.5 hours per week doing crowdwork (18.6 hours for paid work and 6.2 hours for unpaid work).

■ 58 per cent reported that the availability of tasks was insufficient and an additional 17 per cent did not find enough well-paying tasks.

■ An insufficient availability of tasks encourages crowdworkers to find tasks on other platforms: almost half the respondents reported having worked on more than one platform in the month preceding the survey, and 21 per cent had worked on three or more different platforms. Yet 51 per cent worked on only one platform, explaining that this was due to the high start-up and transaction costs of spreading oneself across platforms.

■ More than 60 per cent of respondents also expressed a desire for more work that was not crowdwork, indicating a high degree of underemployment; 41 per cent reported actively looking for paid work other than crowdwork.

Most crowdworkers depend financially on their earnings from crowdwork

■ For about 32 per cent of the workers, crowdwork was their primary source of income.

■ For workers who considered crowdwork to be their primary source of income, their income from crowdwork comprised about 59 per cent of their total income, followed by income from their spouse (22 per cent) and another 8 per cent from their secondary job.

■ Those respondents who did not consider crowdwork to be their primary income earned, on average, as much from crowdwork as from their main job (36 per cent from each); the rest of their household income came from their spouse (18 per cent) or other sources (9 per cent).

Flexible work with atypical hours

■ Workers appreciated the ability to set their own schedule and work from home.

■ Many crowdworkers worked atypical hours: 36 per cent regularly worked seven days per week; 43 per cent reported working during the night and 68 per cent reported working during the evening (6 p.m. to 10 p.m.), either in response to task availability (and differences in time zones) or because of other commitments.

■ Many women combined crowdwork with care responsibilities. One out of five female workers in the sample had small children (0 to 5 years). These women nonetheless spent 20 hours per week on the platform, just five hours fewer than the sample as a whole; many worked during the evenings and at night.

Skill mismatch and lack of career advancement

■ The most common tasks performed by crowdworkers included responding to surveys and participating in experiments (65 per cent), accessing content on websites (46 per cent), data collection (35 per cent) and transcription (32 per cent). One out of five workers regularly performed content creation and editing and 8 per cent were engaged in tasks associated with training artificial intelligence.

■ Most microtasks are simple and repetitive and do not coincide with the high level of education of crowdworkers.

Lack of social protection benefits

■ Social protection coverage is low: only six out of ten respondents in 2017 were covered by health insurance, and only 35 per cent had a pension or retirement plan. In most cases this coverage came from the respondents' main job in the offline economy, the job-related benefits of their family members, or state-sponsored universal benefits.

■ Social protection coverage is inversely related to the individual's dependence on crowdwork – workers who are mainly dependent on crowdwork are more likely to be unprotected. About 16 per cent of the workers for whom crowdwork was their main source of income were covered by a retirement plan, compared with 44 per cent of those for whom crowdwork is not the main source of income.

Communication and payment

■ Almost nine out of ten workers in the ILO survey have had work rejected or have had payment refused. Only 12 per cent of respondents stated that all their rejections were justifiable.

■ The platforms had one-sided rating systems; mechanisms for evaluating the client/requester were not in place on the platforms.

■ Many workers voiced frustration with the inability to appeal unfair rejections.

■ Workers struggle to communicate with requesters and platforms. Many workers (28 to 60 per cent, depending on the platform surveyed) have turned to worker-run online forums and social media sites either to get advice or to follow the discussions about issues facing crowdworkers.

Towards decent work in the online world

Despite performing valuable work for many highly successful companies, compensation from crowdwork is often lower than minimum wages, workers must manage unpredictable income streams, and they work without the standard labour protections of an employment relationship. None of these negative outcomes is inherent to the concept of crowdwork, or to microtask work in particular. On the contrary, it would be possible to reconfigure the terms of microwork in order to improve conditions for workers.

To date, there have been several initiatives to encourage platforms and clients to improve working conditions. These include Turkopticon, a third-party website and browser plug-in for the Amazon Mechanical Turk (AMT) platform, which allows workers to

rate clients who post tasks; the Dynamo Guidelines for Academic Requesters on AMT; FairCrowdWork.org; and the Crowdsourcing Code of Conduct, a voluntary pledge initiated by German crowdsourcing platforms. The signatory platforms have also established, in cooperation with IG Metall, an "Ombuds Office" through which workers can resolve disputes with platform operators.

Although these are promising efforts, the challenge of regulating globally dispersed crowdwork should not be underestimated. Currently there is no government regulation of crowdworking platforms; rather it is the platforms themselves that set working conditions through their terms of service agreements.

This report puts forward 18 criteria with a view to ensuring decent work on digital labour platforms. They include:

1. Addressing employment misclassification.

2. Allowing crowdworkers to exercise their freedom of association and collective bargaining rights.

3. Applying the prevailing minimum wage of the workers' location.

4. Ensuring transparency in payments and fees assessed by the platform.

5. Ensuring that independent workers on the platform have the flexibility to decline tasks.

6. Covering costs of lost work in case of technical problems with the task or platform.

7. Establishing strict and fair rules to govern non-payment.

8. Ensuring that terms of service agreements are presented in human-readable format that is clear and concise.

9. Informing workers on why they receive unfavourable ratings.

10. Establishing and enforcing clear codes of conduct for all users of the platform.

11. Ensuring that workers have the ability to contest non-payment, negative evaluations, qualification test outcomes, accusations of code of conduct violations and account closures.

12. Establishing a system of client review that is as comprehensive as the worker review system.

13. Ensuring that task instructions are clear and validated prior to the posting of any work.

14. Enabling workers to be able to view and export a complete human- and machine-readable work and reputation history at any time.

15. Allowing workers to continue a work relationship with a client off the platform without paying a disproportionately large fee.

16. Ensuring that customers and platform operators respond to worker communications promptly, politely and substantively.

17. Informing workers of the identity of their customers and the purpose of the work.

18. Ensuring that tasks that may be psychologically stressful and damaging are clearly marked by platform operators in a standard way.

In addition, the report recommends three criteria for adapting social protection systems so that crowdworkers have access to social protection coverage:

1. Adapting social insurance mechanisms to cover workers in all forms of employment, independently of the type of contract.

2. Using technology to simplify contribution and benefit payments.

3. Instituting and strengthening universal, tax-financed mechanisms of social protection.

Crowdworker, Italy

© Fankam Tekem Bill Francky

CHAPTER 1

Introduction

This is obviously a way of working that will likely explode in the future. If some sort of fairness were present in early stages it would prove beneficial to long-term prospects. (Respondent on Amazon Mechanical Turk, United States)

Concerns over the future of work have centred on whether technology will displace humans in the workplace and, if so, what to do with growing global surpluses of labour. Less attention has been placed on the types of jobs that will be created, and whether these jobs will be "decent". The ILO defines decent work as work that is productive; ensures equality of opportunity and treatment for all women and men; delivers a fair income, security in the workplace and social protection for families; provides prospects for personal development; and gives workers the freedom to express their concerns, organize and participate in decisions that affect their working lives.

Work on digital labour platforms is new and is emblematic of work of the future. It consists of both web-based, digital labour platforms (commonly referred to as crowdwork) and locally based labour platforms where work is allocated through software applications (apps).

Crowdwork emerged in the early 2000s with the growth of the Internet and the need for human input in tasks needed for the smooth functioning of web-based industries. Workers may work from anywhere in the world, as long as they have a reliable Internet connection. Jobs range from sophisticated computer programming, data analysis and graphic design to relatively straightforward "microtasks" of a clerical nature.

But while crowdwork is a product of technological advances, it also represents a return to the casual labour of the past in industrialized economies, while in developing economies it adds to the existing casual labour force. Currently most crowdwork is not subject to labour regulations, so that workers have little control over when they will have work, or their working conditions. They also have limited options for recourse in cases of unfair treatment.

Within the broader context of crowdwork, this report focuses specifically on microtask platforms — those crowdwork platforms that provide businesses with access to a large flexible workforce for the completion of small, often repetitive, clerical tasks. The report provides one of the first comparative studies of working conditions across five prominent, English-speaking microtask platforms. It draws on two surveys undertaken in 2015

and 2017 by the International Labour Office (ILO) on crowdworkers' employment patterns, work histories and financial security, and analyses working conditions along seven dimensions – rates of pay, social protection, work intensity, work availability, rejections and non-payment, worker communication with clients and platform management, and type of work. The findings highlight both the benefits and drawbacks of microtask work. Due to its global reach, with workers from "developed" and "developing" countries present on the platforms, the study finds both commonalities and differences between workers from the global North and South. The findings are supplemented by data and insights from small surveys conducted by IG Metall (the German Metalworkers' Union) and Encountering Tech, co-funded by the Austrian Chamber of Labour (Arbeiterkammer). The surveys (hereafter the IGM survey) were conducted from December 2016 through March 2017.

This chapter provides a brief introduction to microtask work, with an overview of the concept, its origins, and the structure of the work. Chapter 2 gives more detail on the operation of microtask platforms. It describes the employment arrangements that platforms have with workers, their business models, and processes for posting and completing work. Based on survey data, this section also includes a typology of microtasks that groups the available tasks into ten categories, and concludes with an analysis of the terms of service for microtask platforms, shedding further light on the ways that microtask work is structured and defined.

Chapter 3 discusses some of the basic characteristics of crowdworkers and their motivations to undertake this work, based on the two surveys undertaken by the ILO in 2015 and 2017 and supplemented by data and insights from the IGM survey.

Chapters 4 and 5 focus on the main results from the surveys, investigating working conditions on five platforms: Amazon Mechanical Turk (AMT), CrowdFlower, Clickworker, Microworkers and Prolific. Chapter 4 is organized around a set of four key features that define microtask working conditions: rates of pay, social protection, work availability, work intensity and how it impacts work-life balance. Chapter 5 looks at the risks faced by crowdworkers in terms of rejections and non-payment for the tasks done, and the extent to which workers can communicate with clients. It also looks at the opportunities crowdwork creates for workers, the type of tasks they perform and their prospects for future career development. The comprehensive quantitative and qualitative data shed light on the working conditions on the platforms, workers' perceptions of these conditions, and the benefits and drawbacks of this form of work.

Chapter 6 analyses the survey results in a broader economic context, and provides a set of forward-looking recommendations. It explains initiatives that have been undertaken to improve working conditions, many of which have been led by the workers themselves, by academics and by social partners. The report concludes with a list of 18 criteria for making microtask work more fair, as well as three suggestions for improving social protection for crowdworkers.

1.1   WHAT IS CROWDWORK?

Coined in 2005 by *Wired* magazine writer Jeff Howe, "crowdsourcing" refers to:

> The act of taking a job once performed by a designated agent (an employee, free-lancer or a separate firm) and outsourcing it to an undefined, generally large group of people through the form of an open call, which usually takes place over the Internet (Howe, quoted in Safire, 2009; see also Howe, 2006).

As a combination of the words "crowd" and "outsourcing" suggest, the word's origins directly refer to the economic motivations for businesses' use of crowdsourcing – cheaper, on-demand labour. Groups of workers that span multiple time zones offer businesses the possibility of completing projects at any time of day or night, and large numbers of workers mean that tasks can be accomplished quickly. Leveraging the power of "the crowd", a business can access thousands of workers who can, for example, process large sets of data in a relatively short time period, with no further obligation by the business to those workers. They are not employees with a term of contract beyond the single task at hand. In addition, and as discussed later in this report, workers living in countries with a lower cost of living, such as India or other developing countries, may be happier and willing to work for lower wages than their counterparts might demand in countries with a higher cost of living, such as the United States or European countries.

The crowd has historically been understood as comprising amateurs who are perhaps undeserving of standard "professional" wages. In Howe's original article about crowdsourcing, he describes the new competition professional photographers faced when sites such as iStockPhoto began offering licences to a wide array of amateur photographers. While the photography might be arguably of lesser artistic or professional quality, it was often "good enough" for many business needs (Howe, 2006). In some ways, however, the amateur nature of crowdwork may be changing. Contemporary crowdwork platforms often offer sets of worker "qualifications" and evaluation mechanisms that allow employers to filter for workers with certain sets of experience and skills to perform the required tasks.

1.2   HISTORY AND ORIGINS OF CROWDWORK PLATFORMS

If crowdsourcing is the act of outsourcing work to "the crowd", then crowdwork platforms are the digital services (websites or apps) that facilitate crowdsourcing. These platforms provide the technical infrastructure for requesters to advertise tasks to large numbers of potential workers spanning geographic and economic circumstances – "the crowd" – to retrieve and evaluate the results of completed tasks, and to pay individual workers for services rendered. Conversely, these platforms also provide services and infrastructure to workers, offering a centralized location for workers to identify tasks from many different requesters, a method for submitting work products and the technical and financial infrastructure to receive payment for work completed.

Today, a wide variety of tasks are supported by digital labour platforms (figure 1.1). Some of the digital labour platforms are web-based, giving tasks either to the crowd (microtasking or contest-based creative tasks) or directly to individuals using a freelance

marketplace (for example, Upwork). In addition, there is also location- and app-based work; most of these tasks are given to individuals (e.g. transportation, delivery and household services) with few given to the crowd (e.g. local microtasking). In this report we discuss only one form of crowdwork – microtasking wherein tasks are subdivided into tiny units, each unit is paid a tiny amount of money and the work is dispersed through the crowd via online crowdwork platforms. Well-known examples of microtask crowdwork platforms studied in this report include AMT, Clickworker, CrowdFlower and Microworkers.

Figure 1.1. Categorization of digital labour platforms
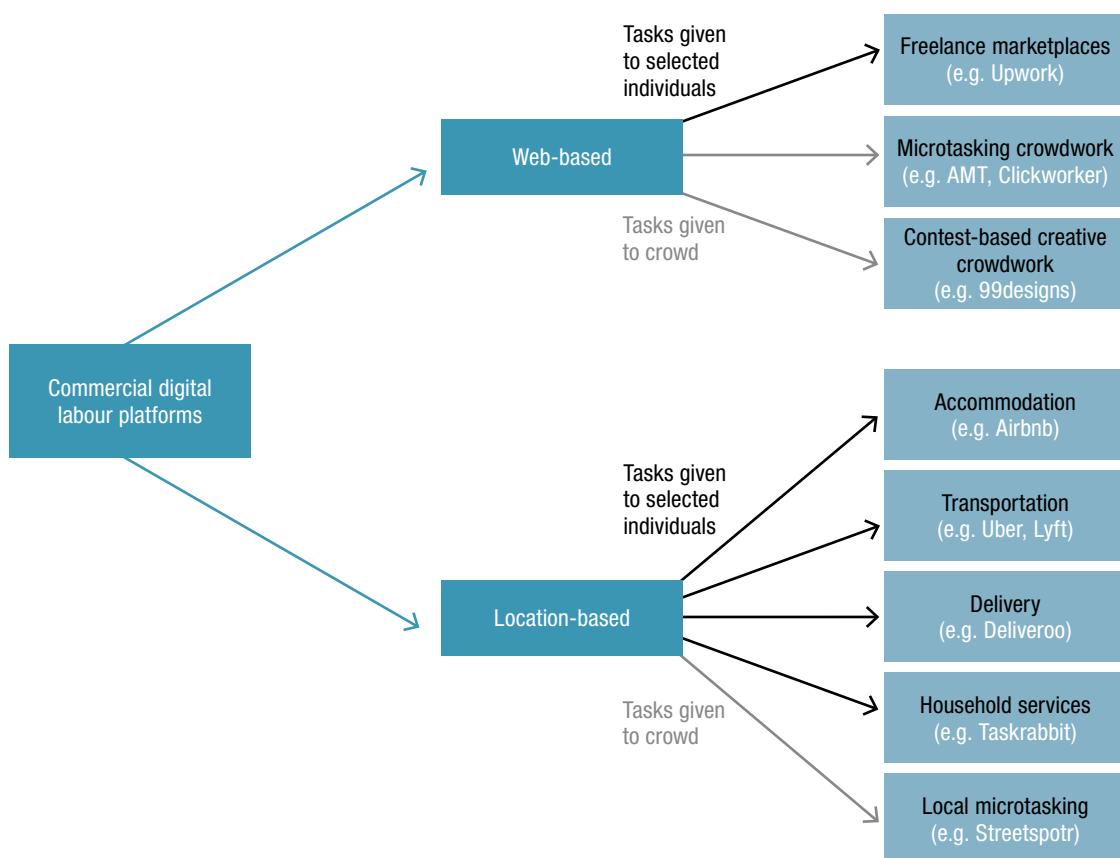
Source: Adapted from Schmidt (2017).

As a general concept, the notion of compiling information from a "crowd" (that is to say, the public at large) into a larger whole is a long-standing practice. The first instalment of the *Oxford English Dictionary*, published in 1884, was the product of solicitations in newspapers for any reader to send in examples of both ordinary and rare words (Murray, 1977; Mugglestone, 2005). Scientific prizes that sought to leverage the diversity of the public in order to develop creative new ideas have likewise existed for centuries, including the Alkali Prize promoted in the late 1700s by King Louis XVI of France,[1] and the bounty that fuelled Charles Lindbergh's first transatlantic flight. These large prizes for creative and technical feats mirror the work arrangements of more contemporary crowdsourcing platforms such as InnoCentive[2] (which awards prizes for scientific discoveries) and Jovoto[3] (which awards prizes for the best designs submitted to creative challenges).

Some of the earliest platforms were fairly simple adaptations of previous work arrangements. The platforms merely leveraged the connectivity afforded by the Internet to gain access to a distributed workforce instead of setting up centralized work buildings. For example, call centres typically employ people to answer phones for many different clients at a centralized location. As the use of the Internet proliferated in the United States in the early 2000s, the company LiveOps cut costs by using home-based workers to form a physically distributed call centre.[4]

In addition to the cost savings of not operating an office, the geographic distribution of workers on crowd platforms can be an asset in its own right. On Clickworker, for example, clients can hire platform workers for "mobile crowdsourcing" to "monitor brand campaigns and receive instant, up-to-date local market input by engaging our crowd on the ground via smartphones".[5] For these tasks, Clickworker, like another platform Streetspotr, is leveraging the crowd's distribution in space as did early citizen science projects such as the Monarch butterfly tagging project (Urquhart, 1976). Because the crowdworkers are already geographically dispersed, they are well-positioned to report back on local conditions – whether the presence of a butterfly or the display of a particular product at a local store. For information-based platforms like AMT and CrowdFlower, the distribution of workers across global time zones means that the platforms can offer on-demand staffing and task completion on a 24-hour-a-day basis.

Estimating the size of the workforce engaged in microtask platforms – or in the gig economy more generally – is difficult (Smith and Leberstein, 2015). Although several platforms share statistics of how many registered participants they have, this does not necessarily reflect the active workforce (see also Stewart et al., 2015).[6] However, the phenomenon is clearly non-negligible and recent efforts to map the size of the online gig economy (Kässi and Lehdonvirta, 2016) show that the online labour market grew by 25.5 per cent between July 2016 and June 2017 (Lehdonvirta, 2017).[7]

1.3. IS CROWDWORK A NEW FORM OF WORK?

Crowdwork is sometimes treated as a "new" kind of work: a transformation of labour predicated by the development of the Internet and the online platforms that currently support it. The argument that these platforms are "new" – something not quite the same as traditional "work" – has been one way that online labour platforms have attempted to evade existing labour regulations.

Yet, as this brief history has demonstrated, the use of the "crowd" (that is to say, the public at large) to contribute small bits of information to larger projects is nothing new. What is different today is the use of a new technological medium – the Internet and websites designed for it – to coordinate these projects, replacing some aspects of the organization with a software platform. Moreover, by breaking down jobs into "tasks", platforms facilitate new ways of commodifying labour, and selling it "on demand" to businesses and others who are looking to outsource some aspects of their workload at a lower cost.

As others have argued, crowdwork resembles many long-standing work arrangements, merely with a digital tool serving as an intermediary. The strategies of crowdwork that centre on breaking down tasks into small units assignable to unskilled workers appears as "a throwback to the de-skilled industrial processes associated with Taylor, but without the loyalty and job security" (Cherry, 2016a, p. 3). The payment structure by task rather than time might also be seen to resemble pre-industrial piecework arrangements (ibid.). The contingency of crowdwork coupled with the decomposition of large tasks into piecework looks not dissimilar from the still-extant contingent labour arrangements of the garment and textile industry – whether it occurs in centralized sweatshops or the home of the worker who is trying to make up for low wages by taking on additional jobs as "homework" (Scholz and Liu, 2010). In addition, the matching services that some platforms provide for clients and workers appear, in practice, quite similar to the work of employment or temporary work agencies.

It is nonetheless clear that there are transformations of work arrangements happening today, and crowdwork might best be understood as part of a broader shift towards more precarious and contingent labour as well as towards more automated hiring and management processes. For example, in the case of Uber, arguably the most transformative innovation is the automation of the managerial role of taxi dispatch through the development of an algorithm. In the case of microtask platforms like CrowdFlower, it is instead the evaluative role of management that is automated through processes that assign each individual task to multiple workers and use a quorum system to compare and evaluate automatically which responses are "correct" in case of any disagreements. However, as this report will demonstrate, the actual labour of the workers who are still part of the system is that which is least changed from existing forms of piecework and data work. Understanding the specificities of these labour practices is fundamental for deciding how crowdwork platforms should be regulated.

1.4. WHAT ARE MICROTASK PLATFORMS?

Microtask platforms are those crowdwork platforms that provide businesses with access to a large flexible workforce distributed across the globe for performing numerous small and quick, often repetitive, tasks. One of the most well-known microtask platforms, AMT, advertises itself as a "marketplace for work" where "businesses and developers" gain access to an "on-demand, scalable workforce".[8] AMT, like other microtask platforms, may be more generally understood as "an online labor market for small information tasks" (Silberman, 2015). These "information" tasks range from image identification to content moderation to voice transcription; but all share in common the ability to perform the work remotely and using a computer. Clients or requesters use the platforms to post bulk tasks that need completion, such as a survey for which they seek thousands of responses, or a set of hundreds or thousands of photos of streetscapes about which they direct workers to identify and mark certain features (such as medians, centre lines, pedestrians and cars). Workers use the platform to locate tasks for which they are qualified, and are paid by each individual task or piece of work completed, for example, each survey response or each photo tagged. Some tasks, such as surveys, may be completed only once by each worker; however, in the case of bulk tasks, such as photo tagging, a worker may choose to perform a large number of individual instances of the posted task.

Microtask platforms initially emerged due to a need for uniquely human intelligence. As Irani (2015a) explains, microtask platforms such as AMT were "born out of the failures of artificial intelligence to meet the needs of internet companies seeking to expand the domain of the data they could store, classify and serve up on line" (p. 225). Artificial intelligence could not "classify the nuances of the images, sounds and texts that filled Web 2.0" (ibid.), thus people, rather than algorithms, were needed to fill the gap. In consequence, humans have become integral to the provision of services commonly marketed or described as "artificial intelligence" (AI) (see, for example, Nakashima, 2018; Newman, 2017; Davies, 2017; Alba, 2017). Ironically, AI as it exists in current industry practice has much less to do with its original intellectual and practical aims as a field, which was to create entirely automated systems that could solve problems that previously only humans could solve (e.g. whether an image satisfies a certain set of criteria). Rather, AI tends to reorganize those problems so they can be (a) *partially* automated and (b) outsourced to a low-cost, flexible, algorithmically managed workforce. Paradoxically, some microtask platforms specialize in providing human-labelled data sets that are used to train machine-learning algorithms in the hope that they will be able to function independently of human input in the future.

1.5 STRUCTURE OF WORK: MANAGING WORKERS ALGORITHMICALLY

The history of AMT, the oldest of the platforms studied in this report, is instructive for understanding the broader space of microtask platforms today. Amazon describes its service to requesters as a kind of "artificial artificial intelligence," "an on-demand, scalable, human workforce to complete jobs that humans can do better than computers, for example, recognizing objects in photos".[9] Originally an in-house software tool, the first

version of the system was built by Amazon in the early 2000s when it began to struggle with duplicate entries for the same product in its growing online marketplace. Because it offered products from multiple vendors on its marketplace – and each vendor entered product information separately – the same products were listed in their catalogue more than once, and with information (exact name, photo, description) that did not perfectly match. Potential buyers on the site were then frustrated when their searches contained multiple slightly different entries for the same actual product up for sale. Amazon was unable to remedy this situation computationally – to recognize and filter out duplicates – although such identification would be trivially simple for a human. So, it created an internal website for use by employees during their "spare time". Employees could use the site to go through catalogue entries and mark the duplicates. Recognizing the power of this tool for a wider variety of tasks, Amazon decided to open the platform to external requesters – and external workers – for a wider variety of tasks beyond the identification of duplicate product entries (Silberman, 2015).[10] Today, a wide variety of tasks that are currently unable to be computationally automated – such as tagging all the cats in a set of photographs – can be completed in mere minutes by a "global, on-demand, 24 x 7 workforce".[11]

What might be most impactful about AMT is the way that the entire platform – and thus its workers – is accessible to computer programmers through an application programming interface (API).[12] Programmers working on developing a larger more complex algorithm can call on workers with a few simple lines of code. The process of posting tasks, evaluating results and rewarding workers can all be automated through this system. Other microtask platforms – including Microworkers and Clickworker – similarly provide API access to their platform, enabling varying degrees of automated use.

Of these, the CrowdFlower (now called "Figure Eight") platform perhaps offers the most streamlined integration of human workers in larger computational systems and tasks. Describing itself as "AI for your business",[13] CrowdFlower's design allows clients from the start to post jobs in the form of raw data sets consisting of multiple "rows" of data. The platform then distributes each row of data to multiple workers (by default, three), who each make a "judgment" on that row of data. A single worker can repeat this judgment step (e.g. "does the image contain a cat?") on numerous rows from the same data set. The platform automates for clients the process of comparing the multiple judgments on each row that were made by different workers in order to verify that the judgment was correct. Serving as an intermediary, then, microtask platform APIs make it possible for businesses to manage an entire workforce algorithmically, and to integrate a "human-in-the-loop" as though the worker's intelligence were a mere function in an external software library.

Algorithmic management of the workforce is a defining feature of digital labour platforms. It concerns not just the web-based microtask crowdsourcing platforms studied in this report, but also "location-based" digital labour platforms that direct workers to deliver local services, including in transport (Uber, Lyft), food delivery (Foodora, Deliveroo), home repairs (Task Rabbit) and domestic service (care.com).

Algorithmic management can be defined as work settings in which "human jobs are assigned, optimized, and evaluated through algorithms and tracked data" (Lee et al., 2015, p. 1603). While algorithmic management is nearly synonymous with work on digital labour platforms, it is also present in offline industries. In the 1980s and 1990s, many retail stores in Northern America began incorporating software to optimize scheduling employees' shifts (Melachrinoudis and Olafsson, 1995); and this practice continues to this day (Greenhouse, 2012). Similarly, warehouses routinely use "voice-picking", an automated, voice-directed system that directs warehouse staff to pick certain products in the warehouse, while monitoring their performance. The staff on the warehouse floor wear a headset with a microphone; they receive instructions through the automated system and verbally confirm their actions back to the system (Matopoulos, 2011).

On digital labour platforms, algorithmic management reaches beyond directing work and scheduling to control almost all aspects of the job. Möhlmann and Zalmanson (2017) define five characteristics of algorithmic management: (1) continuous tracking of workers' behaviour; (2) constant performance evaluation of workers from client reviews but also the client's acceptance or rejection of their work; (3) the automatic implementation of decisions, without human intervention; (4) workers' interaction with a "system" rather than humans, depriving them of opportunities for feedback or discussion and negotiation with their supervisor, as would be typically the case in offline jobs; and (5) low transparency. The low transparency stems from competitive business practices that keep platforms from disclosing how the algorithms work, but also by the adaptive nature of the algorithms, whereby the decisions change according to the data being collected. As Möhlmann and Zalmanson explain, "companies are rarely motivated to disclose the underpinning criteria of their algorithms and are sometimes unable to fully explain the results themselves, creating very low transparency for those managed by the algorithms" (p. 5). On microtask platforms, where clients can post tasks using a plethora of APIs, this problem is compounded.

Chapter 5 of this report analyses in greater detail some of the consequences of algorithmic management for microtask workers, and Chapter 6 advances some policy recommendations for mitigating some of these shortcomings.

NOTES

1   See http://www.nesta.org.uk/news/guide-historical-challenge-prizes/alkali-prize.

2   https://www.innocentive.com/.

3   See https://www.jovoto.com/.

4   See http://ip-208-90-202-81.liveops.com/company/history.html.

5   See Clickworker homepage, at: https://www.clickworker.com/ [1 October 2017].

6   For example, Prolific presented the following statistics in a newsletter sent out to subscribers on 14 June 2017: "When you visit our site, then you will see that we have about 70,000 registered participants on our site. This is true – but unfortunately, not all of these users regularly take part in studies. In order to manage expectations better, we will now slightly adjust the pre-screening section (step 3) in the researcher dashboard. This means that instead of 70,000 registered participants, you'll see ~20,000 active participants. 'Active participant' means that the participant has logged in at least once in the past 90 days."

7   The authors primarily focus on platforms that focus on remotely delivered labour as opposed to localized services such as transport. The online labour index is based on traffic measurements from the five largest English-language online platforms.

8   See https://www.mturk.com/.

9   See http://docs.aws.amazon.com/AWSMechTurk/latest/AWSMturkAPI/Welcome.html.

10   For more detail, see in particular Chapter 2, "Mechanical Turk and Turkopticon, 2008–2015," section 2.2, "Mechanical Turk".

11   See https://www.mturk.com/mturk/welcome.

12   See http://docs.aws.amazon.com/AWSMechTurk/latest/AWSMturkAPI/Welcome.html.

13   See https://www.crowdflower.com/.
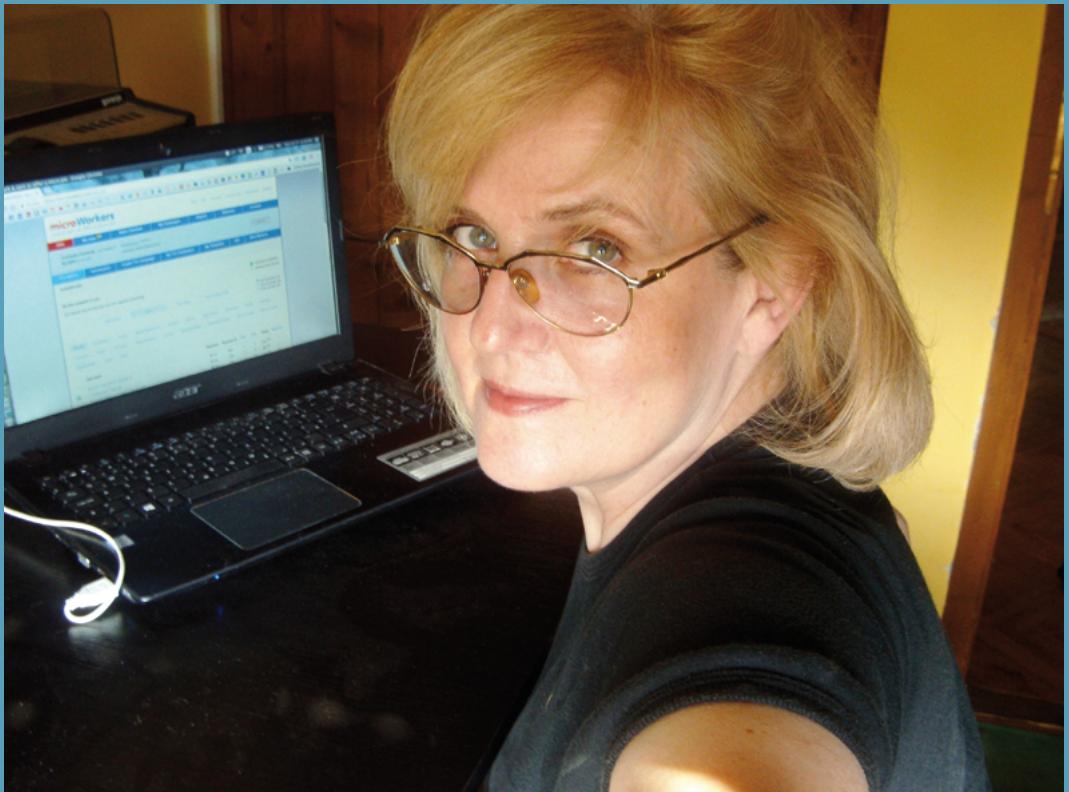
Crowdworker, Republic of Serbia   © Anastazija Aleksic

CHAPTER 2

Main microtask platforms

Each of the five platforms examined in this report have different histories as well as countries of origin and operation, and specialize in different kinds of tasks. In this chapter we give some background on each of the five platforms, beginning with US-based Amazon Mechanical Turk (AMT). First founded in 2005, and growing out of an internal product used for Amazon's own business needs, it is now one of the largest microtask platforms currently in operation. German-based Clickworker (founded in 2005; began taking clients in 2007) and US-based CrowdFlower (founded in 2007) both compete with AMT in terms of annual transaction volume. US-based Microworkers (founded in 2009) stands out for its broader international worker base in comparison to AMT (Hirth, Hossfeld and Tran-Gia, 2011) and UK-based Prolific (founded in 2014 as Prolific Academic) is unique for its focus on survey-research tasks.

2.1   DESCRIPTION OF PLATFORMS

Microtask platforms share many common features, including the worker-platform-client employment arrangement and the platform business model. Beyond these broad organizational similarities, some of the microtask platforms described in this report specialize in certain areas of either work process or work type.

2.1.1   Employment arrangements

Despite advertising language that offers a "workforce" to potential task requesters,[1] or their very name (such as Microworkers), platforms generally do not recognize microtask workers as employees in the traditional sense. Instead, almost all platforms require workers to accept classification as self-employed persons,[2] or independent contractors. Some, such as Prolific, do not even classify them as workers of any kind, instead describing workers only as "participants" in research projects who receive "rewards" rather than payment for work performed. As a consequence, microtask workers have had to contest this classification in order to access labour protections and benefits.

In recent years, several lawsuits have challenged the platforms' classifications, including one class action lawsuit, *Otey* v. *CrowdFlower*, brought against CrowdFlower in 2012

(Cherry, 2016a). The original complaint in the suit was that CrowdFlower failed to pay workers a minimum wage; the platform contended that the workers were independent contractors rather than employees and thus had no rights to a minimum wage. Ultimately, the suit was settled before a ruling was made; however, the settlement included an award equivalent to the backpay for the missing wages in addition to attorneys' fees.

The case of Prolific. All but one of the microtask platforms studied for this report classifies workers as "self-employed". The outlier is Prolific, a UK-based site specializing in helping scientists secure survey takers for academic research projects. As mentioned above, Prolific uniquely considers its survey takers neither employees nor self-employed persons; instead, it is careful to always refer to survey respondents as "participants" and to refer to payments made to participants as "rewards" for voluntary participation rather than remuneration for services performed. As it explains on its website:

> Participants are not employees. We do not consider our participants as employees in any way; they simply volunteer for research projects and earn rewards, which is covered by UK tax law. [3]

Prolific references a UK tax law website that indeed states that compensation for academic research participants does not need to be taxed as income, assuming it is no more than a "reimbursement" for the costs of participation:

> There will be no tax or NIC liability arising on the individual if the sums received do no more than reimburse the individual's reasonable costs of participating in the trial or research, including costs of travel and subsistence.[4]

Moreover, as Prolific further explains, it leverages algorithmic measures to ensure that "participants" are not able to accumulate a large enough quantity of work on the platform to be considered employees:

> To make sure that our participants don't turn into professional survey takers, we have a rate limiting mechanism in place that distributes studies as evenly as possible across the entire participant pool. [5]

2.1.2 Business models

The business models of most crowdwork platforms are based on charging fees to the clients who post tasks on the platforms. On all platforms studied in this report, there is a fee assessed for each task completed by workers. This percentage-based fee is tied to the amount that clients pay workers, and is typically assessed at the time of payment for the work performed.

Some platforms, such as Clickworker and CrowdFlower, also offer services to set up and manage the posting of tasks on their platforms. Fees for these "full-service" solutions are individually tailored to clients, generally varying based on how much work the operator has to do to break up large tasks into repeatable microtasks that can be published on their platform.

In addition, CrowdFlower offers "free" access to the platform only to researchers and students who qualify for a "data for everyone" plan. Other platform users pay an initial on-boarding fee of US$3,000 plus a monthly fee of $1,500 or more for access to the platform. Individual fees paid to "contributors", the human workers completing tasks, and "associated transaction fees" are billed separately in addition to the platform access fee.[6]

AMT further charges additional fees if the requester would like to target work to specific groups of workers, based on the workers "qualification", which can be based on either the worker's performance or characteristics, ranging from age, gender and marital status to the frequency of exercise or type of online purchases made by the worker. This fee can be either a fixed amount per assignment (US$0.05 to $1.00) or a percentage of the task's reward. [7]

2.1.3 Platform specializations

The range of microtasks is quite large, and different microtask platforms specialize in different kinds of tasks. On the AMT website, users can register as a "Turker" to complete what are called "human intelligence tasks" and the platform is fairly agnostic about what these tasks might be. The service summary classifies the tasks into six categories: cleaning the data, including algorithm training, categorization, tagging, sentiment analysis, creating and moderating content, and business feedback, which includes product or app testing. Similarly, Microworkers advertises templates for creating a wide array of tasks including, but not limited to: research surveys, image tagging, marketing campaign reactions, video quality rating, product classification, document transcription, data collection, video and audio transcription and event sequencing.

Clickworker also offers a variety of information-based microtasks, suggesting on its home page that clients "use our cloud service based on human intelligence to get your work done".[8] Its home page highlights seven offerings, including writing (e.g. search engine optimization (SEO) text generation), web research, categorization and tagging (e.g. of images), surveys, AI training data, and data management (i.e. identification of product features). However, of the microtask platforms examined in this research, Clickworker is the only platform that offers tasks designed to be completed through the use of a mobile app to allow businesses to monitor "brand campaigns" or collect or verify geodata on the ground.[9]

CrowdFlower is somewhat unique in that the platform is optimized for use by computer programmers working in data science – people who are looking to do things such as validating data sets or preparing training data for machine-learning algorithms. It is technically possible to use the platform for other purposes, such as conducting a survey, but it requires some extra work by the client to contort the task into the CrowdFlower model, centred on asking multiple workers to execute repeat "judgments" on one of presumably many data rows.[10] CrowdFlower also specializes in repetitive microtasks that include data research, transcription, categorization, text production for product descriptions, etc.[11]

Prolific is the most specialized of all the microtask platforms studied here. It focuses exclusively on offering a platform for conducting survey research, and offers additional

research-specific features such as filters for a wide variety of complex demographic and other screenings. Prolific specializes in surveys and experiments; however, it is also possible that other types of tasks are "disguised" as surveys.[12]

2.2   DESCRIPTION OF WORK ON THE PLATFORMS

To come to a better understanding of the different types of tasks performed by crowdworkers, the 2017 ILO survey asked respondents to describe up to five different types of tasks that they typically performed on the platforms. The answers were varied, making it difficult to assign these tasks to existing typologies such as that proposed by Gadiraju, Kawase and Dietze (2014). We therefore developed a more detailed taxonomy, consisting of ten task categories. These tasks could be categorized either based on services or projects that are offered by the clients on different platforms, or based on the skills required to undertake the task by the worker. In this report, we categorize the tasks based on projects that are offered by the clients or requesters, and where possible we show the different skills that might be required to undertake tasks for a specific project. The tasks are described below, with examples and illustrations from detailed survey responses, or from follow-up interviews conducted with a selected group of respondents.

Data collection: The crowd is used to collect specific metadata needed by the requesters (clients). These searches include, for example, looking for business addresses or other contact information such as email addresses, location, etc. The information needs to be found, copied and pasted into a form or answer field.

> *Info searches: the employer would give me for example a school name and I would have to find information about it. for example: number of students and teachers, address, etc.* (Respondent on Microworkers, United States)

Data collection can also include gathering information that can only be located in specific geographic locations. For example, the Clickworker platform partners with Streetspotr for "mobile crowdsourcing". In these tasks, workers are typically asked to gather information about products for sale in local stores. They might be asked to check and see if a particular brand product is available, take a photo of its shelf display, or give a subjective rating of it based on their experience seeing it for sale.

Categorization: Categorization tasks involve the classification of entities into groups. A range of vocabulary for this is used to describe this type of task (e.g. tagging, bookmarking, pinning, etc.) depending on the requester or site for which this task is executed. Examples include the categorization of a piece of clothing displayed in a picture according to its colour, pattern, fit/style, neckline, etc.; selecting all images that contain cars; or classifying a book according to its writing genre.

> *These tasks are often characterized as 'easy and quick' and that they can be done 'without really thinking'.* (Respondent on CrowdFlower, United States)

Content access: Content access refers to tasks that involve the promotion of a specific product, including search engine optimization (by increasing traffic on the site) and app testing. Typical tasks in this category include: signing up for a website or service

("create a Google account with a random name from fakenamegenerator.com");[13] entering a specific search term on Google, Amazon or similar, scrolling down to find the link or product specified by the requester, and visiting that page; watching a video on YouTube and "liking" it; up-voting a person or product in a contest; retweeting something on Twitter; or downloading and installing a smartphone application.

Tasks in this category usually serve to create artificial traffic on websites and to improve their rating. Some computer scientists have referred to this work as malicious campaigns, as they manipulate information in web systems (Choi, Lee and Webb, 2016). Furthermore, whereas machine-created artificial traffic on websites can be identified by algorithms, this human-generated form is much more difficult to detect.[14] The identification of this type of "fake traffic" is made even more difficult because requesters take measures to ensure that it is hard to recognize, for example by requiring certain "qualifications" of the user's account, as illustrated in figure 2.1.

Figure 2.1. **Example of a task for content access**

Source: Re-creation of an actual task on Microworkers, which was posted in October 2017.

Verification and validation: Workers are asked to verify and thereby "clean" existing data or classifications, or to confirm the validity of some content. Some examples are: "verify whether the category is right or wrong", "view a series of images to verify that they match a label", or "duplicate fashion product identification", or to verify and validate whether the data that has been provided is valid or not, as in the task example shown in figure 2.2.

Figure 2.2 Example of a task for verification and validation

Source: Re-creation of an actual task on Amazon Mechanical Turk, which was posted in October 2017.

Content moderation: Content moderation refers to the "practice of screening of user-generated content posted to Internet sites, social media platforms and other online outlets" (Roberts, 2014, p. ii). Workers are asked to review text, images and video content according to specific guidelines to detect if any of the material that is posted on the website might violate local laws, social norms or the respective platform's guidelines. Content moderation is discussed in more detail in Chapter 5, box 5.1.

Market research and reviews: In this category, workers may be asked to review or rate a product, service or location. These reviews come in various forms, ranging from "mystery shopping", where an individual goes to a shop (physical or online) to purchase something and rates the services provided, to reviewing and testing apps, or imaginary reviews about things, places, restaurants, hotels or services with which the worker has not had any experience. Workers are asked to express their feelings or sentiments towards a certain entity or notion, or are asked to judge whether existing content conveys certain emotions.

In addition, workers are also asked to judge statements, images or videos for emotions that they may convey for some quality rating. For instance, statements from online forums mentioning a specific brand have to be judged as positive, neutral, or negative for that brand. An interviewee described a task where he had to "watch a video with 100 people trying to do the moonwalk and rate how well they did on a scale from 1 to 10" (Respondent on AMT, United States).

Artificial intelligence and machine learning: This category consists of tasks that relate to the collection of material that is destined for machine learning or artificial intelligence. As mentioned earlier, artificial intelligence as categorized here is not the original intellectual field where automated systems were created to solve problems, but rather to train machine-learning algorithms. Some of the examples are: "record 10 short videos of actions with everyday objects", "record 30 hand gestures using your laptop camera", "draw a bounding box around the specified object", or "record several phrases into your browser". Figure 2.3 illustrates a task for machine learning where the task entails recording 40 videos of drawing letters and digits in the air using a laptop camera. This category also includes tasks related to programming and coding or to mathematical or logical problem solving.

Figure 2.3 Example of a task for machine learning

Source: Re-creation of an actual task on Clickworker, which was posted in October 2017; photo is a screenshot from the task.

Transcription: Workers may be asked to transcribe information from different types of media, such as audio, text, photos, or videos, into written form. Examples of this type of task are: type the numbers and/or letters seen on an image (similar to captchas, e.g. a car number plate); to count the number of items from a specific brand on a photo of a supermarket shelf; to extract purchased items or business information from a shopping receipt; or to type dialogues from audio or video files. As an illustration, figure 2.4 presents a transcription task where information on address and other details has to be transcribed from an image of a sales receipt which is provided to the worker. Often workers are aware that these types of tasks will eventually disappear, as the systems that are being developed will make this work obsolete. Optical character recognition (OCR) is one example of a task that was much more frequent a few years ago than it is now.[15]

Figure 2.4 Example of a transcription task

Source: Re-creation of an actual task on Amazon Mechanical Turk, which was posted in October 2017; photo is a screenshot of the receipt.

Content creation and editing: Content creation and editing tasks require the worker to create new content, or to proofread, edit or translate existing materials. The content concerned is most often text, but can also take the form of other media such as graphic design. It can be in the form of blog or encyclopedia entries, short articles or graphical illustrations. The range of topics seems to be limitless and they do not have to be related to the worker's background. The nature of the skills required for content creation can be quite varied, from having writing skills to being able to create graphics. Figure 2.5 illustrates a content creation task of a comic design, which requires good artistic skills to undertake the task. Similarly, an interviewee from the United States with a degree in history mentioned having written articles on topics ranging from "AIDS research", "smart cars and people's reaction to them", to "installing components such as cabinetry in your garage", "window tints for cars", and "nail gun injuries". The amount of time needed to complete these tasks might be much more substantial than for those falling under other categories, but they can still be found on microtask platforms. However, they are also often listed on platforms that specialize in specific content, such as text writing (e.g. scripted.com, content.de) or design (e.g. jovoto.com, 99designs.com).

Figure 2.5 **Example of a content creation task**

Source: Re-creation of an actual task on Microworkers, which was posted in October 2017. The comic strip is illustrated by Christian Brunner, inspired by a comic strip of Charles Schulz that appeared in the original task.

Surveys and experiments: While businesses rely on the crowd to gain understanding of consumer behaviour and opinions, academic researchers turn towards the crowd to gain insights into their research topics. There may be some overlap between surveys that workers undertake under this category and market research. Surveys come in many shapes and lengths, and cover a broad range of topics, including ethical thought experiments or collaborative games. For instance, an interviewee described "games" where one plays interactively with other people and could receive bonuses depending on the choices that are made.

2.3   PLATFORM TERMS OF SERVICE

Many platforms contain "terms of service" documents that may be given some contractual effect.[16] While the contents of these documents are rarely read – much less scrutinized – by technology users (Obar and Oeldorf-Hirsch, 2016), they are particularly important for online microtask workers.

Although surveys give insight into labour conditions as experienced by workers, platforms' terms of service provide complementary insights into labour conditions through their stipulations that structure and regulate users' interactions with the platform and with others through the platform. These documents govern how and when crowdworkers will be paid, how work will be evaluated, and what recourse workers do or do not have when things go wrong. They outline the responsibilities and obligations of workers, platform operators and clients.

More broadly, these terms of service documents raise concerns for workers akin to the concerns raised about more general software terms of use with respect to consumer rights (Pasquale, 2015). Drawing on a review of the terms of service for each of the platforms studied in this report, this section briefly discusses some of these general issues, and also outlines the case for considering terms of service as a potential site for intervention with the aim of improving working conditions for online labourers.

2.3.1   Non-user-friendly adhesion contracts

Online labour platform terms of service raise many of the same kinds of issues for online workers that terms of use and end user licensing agreements (EULAs) have long raised for software consumers (Cherry, 2014).[17] These documents are lengthy and not easy for people to understand; and they are contracts written entirely by platform operators without room for negotiation. As such, the terms protect the interests of platform operators above and beyond the rights of workers, and workers have no recourse except for deletion of their account and non-use of the platform. However, given that these form contracts can affect thousands of workers, improvements in conditions can have significant positive implications for workers.

Many terms of service are difficult to read, complex and lengthy. Written by lawyers and replete with technical terminology, their contents can seem inscrutable to the everyday prospective worker. A primary document often incorporates numerous other documents

such as a privacy policy or more specific separate documents for worker-users and client-users. Together, these documents are often over 10,000 words long, and this may not even be their entire length: some also include clauses stating that the "agreement" between users and the platform includes not only the document and any direct references, but also other policies which may appear on the website from time to time.[18] In this sense, it is not always possible for workers to even know the full extent of the terms to which they are agreeing through their signature.

The complexity, length, and sometimes undefined nature of these documents are compounded by the fact that most terms of service are presented to users at inopportune times for reading thoroughly, even if they had the time, desire or skill to comprehend them. While most terms of service documents are easily locatable through search engines, not all are prominently linked from the homepage or even the frequently asked questions (FAQ) section of platform websites. More confusingly, the various terms documents across a platform website (e.g. as linked from the homepage footer and the user registration form) are not always consistent.[19] This situation discourages users from reading terms in advance, or as part of their research into whether or not to sign up for a website. Instead, users are most likely to be presented with a prominent link to the terms at the moment of signing up for the platform (after having spent time filling in dozens of boxes), when they usually have to check one more box in the sign-up form saying that they agree to the platform's terms. At this mid-sign-up moment, few users stop to consider in detail the provisions of the document to which they are agreeing.

Even fewer users are likely to keep up with changes to the terms documents over time. Most documents have clauses that allow for platform operators to change or update their contents at any time. Some terms documents further burden users with "checking" the page where the terms reside "from time to time" in order to see if there are any updates.[20] More worker-friendly terms documents promise to at least notify workers by email of any changes, and some – although none of the five under review here – even designate a certain period of time during which workers may send in comments or concerns regarding the revisions.[21]

However, it is unclear how any comments or concerns would be received. Like most other software licences, microwork platforms' terms of service are "adhesion contracts" – or contracts written by only one of two parties, and to which the secondary party may only agree or disagree. Disagreement, in the case of online labour platforms, means that workers' only option is to not use the platform at all. Adhesion contracts have been debated legally for decades (Kessler, 1943; Wilson, 1965); and consumers' rights lawyers have raised concerns about software licensing agreements of this form for many years (Goodman, 1999; Kim, 2013). In the case of labour platforms the loss of negotiating power is particularly injurious, as terms of service often not only cover the workers' use of the software tool, but also serve to regulate many aspects of the worker's labour conditions, including the worker-client relationship as mediated via the platform (e.g. conditions of payment, procedures and timelines for work approval and rejection).

2.3.2 Terms of service documents as sites of intervention

Despite these concerns with terms of service documents as they are currently constructed, they are also an area where progress in workers' rights might be achieved. As others have proposed, a modest intervention could consist of simply making these documents legible to non-expert audiences. Much like Creative Commons' "human readable" versions of software licenses,[22] the "Terms of Service; Didn't read (TOS;DR)"[23] project attempts to provide easy-to-read summaries and ratings for the terms of service for major websites and Internet services. The watchdog project FairCrowdWork.org, organized by Germany's largest trade union, IG Metall, aims at illuminating the conditions on different crowdwork platforms, and provides – among other things – an assessment of the terms of service of a dozen platforms. However, keeping such summaries up to date has proven to be a significant challenge. One alternative way to tackle this issue would be to require platform operators themselves to produce summaries of their own terms in an easy-to-comprehend format – either through new legal policy, fair labour certifications, or collective bargaining agreements.

Moreover, as singular legal texts which aim to construct certain relationships between all users of a platform – workers, platforms, and clients – they are a site for potentially intervening in the construction of online labour relations en masse. Because one contract already covers all workers on a platform, worker-friendly changes to just a few documents – the terms for even a small number of key platforms – could have an impact on tens of thousands of workers around the world. They are contracts waiting to be rewritten; and, again, would be a useful site for new policy, fair labour certification groups or other unions and labour organizations to direct their energies. In Chapter 6, we outline four key areas in which working conditions could be improved and how such provisions might better serve the interests of workers through revised terms of service documents.

NOTES

1   See, for example, Mechanical Turk homepage, at: https://www.mturk.com.

2   See, for example, Amazon Mechanical Turk: Participation agreement, section 3a, last updated 2 December 2014, at: http://mturk.com/mturk/conditionsofuse [13 May 2017].

3   See http://help.prolific.ac/general/how-is-prolific-different-from-mturk-co.

4   See https://www.gov.uk/hmrc-internal-manuals/employment-income-manual/eim71105.

5   See http://help.prolific.ac/general/how-is-prolific-different-from-mturk-co.

6   See https://www.crowdflower.com/pricing/ [1 October 2017].

7   See https://requester.mturk.com/pricing [18 January 2018].

8   See https://www.clickworker.com/.

9   See https://www.clickworker.com/solutions/?show=mobileCrowdsourcing.

10   See, for example the CrowdFlower Guide to Running Surveys, which begins with a three-paragraph disclaimer ending with the note: "As the platform is not designed for these kinds of surveys the support team is not equipped to help with any implementation details or job design. We also can't be held responsible for any discrepancies you may see in contributor numbers in your job and in your external survey". Available at: https://success.crowdflower.com/hc/en-us/articles/201855969-Guide-To-Running-Surveys.

11   See http://faircrowd.work/platform/crowdflower/.

12   An example of this is a survey that was targeted at German native speakers, where participants were asked to formulate natural sounding questions in German based on various sets of English key words, e.g. "recipe that not requires milk". Whereas this might be part of a linguistic study, it can also be imagined that similar tasks could be used for AI training or search engine optimization.

13   Task found on Microworkers.

14   Choi, Lee and Webb (2016) analysed a malicious campaign on Microworkers targeting Facebook, where only 59 out of 800 (7 per cent) "fake" likes that were created through the campaign were identified as such and removed by Facebook. Another study (Lee, Webb and Ge, 2014) showed that only one-quarter (24.6 per cent) of manipulative followers were identified by Twitter.

15   Optical character recognition is a field of research in pattern recognition, artificial intelligence and computer vision. It is the mechanical or electronic conversion of images or typed or handwritten text into machine-encoded text. "Systems were then developed to do this automatically and these types of HITs are now rarely posted." (Faircrowdwork, AMT review, available at: http://faircrowd.work/platform/amazon-mechanical-turk [18 January 2018]).

16   In this report, "terms of service" is taken as the most general term to refer to the agreement governing workers' and clients' use of and relationship to an online labour platform. These documents are variously referred to by the different platforms studied, as follows: AMT: "Amazon Mechanical Turk Participation Agreement"; CrowdFlower: "CrowdFlower Master Terms of Service"; Clickworker: "General Terms and Conditions (Clickworkers)" and "General Terms and Conditions (Service Requesters)"; Microworkers: "Terms of use"; and Prolific: "Prolific Academic Participant Terms of Service" and "Prolific Academic Researcher Terms of Service". Notably, most of these documents state in their opener that they incorporate other documents to which they link, such as general website terms of use, more specific terms for workers, and privacy policies. References to terms of service in this report are intended to be read as inclusive of all such documents that together make up the agreement between platform operators and their users.

17   Cherry's short story on contract law, "A eulogy for the EULA", is a brief and useful historical review on this point within a simultaneously educational and entertaining legal fiction.

18   See, for example, Amazon Mechanical Turk Participation Agreement, version last updated 2 February 2014, at: https://www.mturk.com/mturk/conditionsofuse [12 September 2017]. The preamble includes the statement: "This Agreement consists of the terms and conditions set forth in this document together with all applicable policies, procedures and/or guidelines that appear on the Site from time to time …" See also the Prolific Academic Website Terms of Use, no version number on the document, at: http://prolific.ac/terms [25 August 2017], section titled "Variations" which includes the stipulation: "Some of the provisions contained in these Terms of Use may also be superseded by provisions or notices published elsewhere on the Website."

19   For example, the terms linked to the home page of CrowdFlower include a Master Terms of Service which covers "contributors" and at time of writing purports to have been last updated on 13 October 2015 (see https://www.crowdflower.com/legal/). By contrast, the document linked in the sign-up form for CrowdFlower workers points to a set of "Terms and Conditions" available at: https://elite.crowdflower.com/index.php?view=terms. In addition to the differing title and URL, its revision date is noted as 2 March 2015, which suggests that it may be an older version of the document. Though no changes beyond the title are apparent, it is still of concern that two separate links to two separate documents exist, both claiming to be "the" terms to which one is agreeing.

20   See the Prolific Website Terms of Use, op. cit., where the section titled "Variations" reads as follows (emphasis added): "We may revise these Terms of Use or the Terms of Service at any time by amending this page. You are expected to check this page from time to time to take notice of any changes we have made, as they are binding on you. Some of the provisions contained in these Terms of Use may also be superseded by provisions or notices published elsewhere on the Website."

21   For example, the Germany-based content writing platform content.de, available at: https://www.content.de/common/content/p/contractor_tos [18 January 2018], states that workers can object to changes within one week of receiving written notification of the changes to the terms of service: "12. Änderungsvorbehalt content.de wird im Falle einer Änderung der Allgemeinen Geschäftsbedingungen den Autor hierüber informieren. Die neuen Geschäftsbedingungen treten zwei Kalenderwochen nach Zugang in Kraft, es sei denn, der Autor hat den neuen Allgemeinen Geschäftsbedingungen schriftlich widersprochen. Der Widerspruch ist nur in schriftlicher Form gültig und muss innerhalb von einer Woche nach Zugang der Änderungsmitteilung erfolgen."

22   See the Creative Commons: About The Licenses website, available at: https://creativecommons.org/licenses/ [13 September 2017], section "Three 'layers' of licenses".

23   TOS;DR is a play on the abbreviation "TL;DR", meaning "too long; didn't read". In this case, it stands for "Terms of Service; Didn't read". As their website tagline explains: "'I have read and agree to the Terms' is the biggest lie on the web. We aim to fix that" (https://tosdr.org/ [13 September 2017]).

Crowdworker, India © Vinit R. Agarwal

CHAPTER 3

Who are the crowdworkers?

The ILO has carried out two surveys of crowdworkers. The first was undertaken in November and December 2015 on the Amazon Mechanical Turk (AMT) and CrowdFlower[1] platforms, and the second was conducted between February and May 2017 on five platforms: AMT, CrowdFlower, Clickworker, Microworkers and Prolific. The surveys included standard questions on socio-demographics, about work on crowdwork platforms, and questions that are common to labour force surveys, including occupation, tenure, multiple job holding, hours worked, earnings and previous work experience. In addition, the surveys incorporated questions on pension contributions, health insurance, household income and savings.

In 2015, the survey was divided into two parts (and thus two separate "tasks" to be completed by the worker). Survey 1 captured basic demographics along with some additional measures of crowdwork experience, as well as a few questions to identify the quality of the responses. Survey 2 included more detailed questions about work experience and work history. In 2017, the two surveys were combined to collect all information about the worker through the first round in order to avoid any problems in identifying the workers for the second round. To ensure comparability, the question wording did not change between 2015 and 2017, but some questions from the 2015 survey were dropped and the 2017 survey added more questions on the type of tasks undertaken on the platforms, workers' awareness of minimum wages, payment of taxes and more detailed questions on incomes and social security.[2] Both surveys ended with questions on what, if anything, the workers would change about crowdwork if they could, as well as offering an opportunity to the respondents to voice any other thoughts that they wanted to share and their views on the survey. These textual answers provided a rich source of qualitative information in addition to the quantitative findings of the survey.

All surveys were listed as a "task" on those platforms, with no restriction as to who could participate except in the case of AMT in 2017, which sought a greater representation of Indian AMT workers.[3] As there is no database on crowdworkers that allows a random and representative sample to be drawn from these platforms, we relied on posting the survey on the platforms at different times during the day, and the task could be completed on a first-come-first-serve basis. Workers self-selected to participate in the surveys, and it is likely that those who participated were more inclined and motivated than others by the desire to voice their opinion on the subject, as also observed in similar contexts by other researchers (Marshall and Shipman, 2013).

As a follow-up to the 2017 survey, in August 2017 semi-structured interviews were conducted on Skype with 21 workers in order to have a better understanding about their motivations, the tasks they performed, their degree of satisfaction with crowdwork and how it affected their personal and professional life (skill development or enhancement).

In 2015, Survey 1 had 1,167 eligible responses of which 814 were from AMT and 353 from CrowdFlower (table 3.1). As CrowdFlower does not allow workers to be given a unique identification, it was not possible to invite these workers to complete Survey 2. From AMT, 789 respondents who completed Survey 1 with sufficient attention were invited to participate in Survey 2. Of these, 661 (84 per cent) completed Survey 2 in full, 17 (2 per cent) partially completed the survey and 111 (14 per cent) did not respond. In 2017, among the 3,345 individuals surveyed, 29 per cent were excluded because they only partially completed the survey (14 per cent), did not pay sufficient attention or used algorithms to complete the survey (11 per cent) or used multiple accounts or platforms to complete the survey (5 per cent). The final sample in 2017 consists of 2,350 eligible responses, of which 489 were from AMT, 355 from CrowdFlower, 455 from Clickworker, 495 from Prolific and 556 from Microworkers.

Table 3.1 Survey sample by platform, number of respondents

		2015 (S1)	2015 (S2)	2017
AMT	United States	686	573	231
	India	128	104	251
	Other countries	0	0	7
CrowdFlower		353		355
Clickworker				455
Prolific				495
Microworkers				556
Total		1 167	677	2 350

Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

In addition to these comprehensive ILO surveys, this report also draws on qualitative data from research conducted by and for a coalition of labour organizations and paid for by IG Metall (the German Metalworkers' Union) and the Austrian Arbeiterkammer (hereafter the IGM survey).[4] As part of the development of the faircrowd.work website, initial surveys of working conditions were conducted from October 2016 through March 2017 on six platforms: AMT, Clickworker, CrowdFlower, MyLittleJob, Prolific, and Upwork. The sample sizes were relatively small, with 22–50 responses per platform, for a total of 228 responses across all six platforms. However, the large number of free-response text fields offers useful in-depth qualitative data to complement the large quantitative ILO surveys.

In addition to basic demographic questions, the IGM survey covered seven main areas: respondents' work history and general platform experiences, including sense of autonomy and control over work process; the quality of tasks on the platform, including the degree to which workers found tasks ethical, meaningful, fun and/or harmful; experiences with payment and non-payment; assessment of communication with management, clients and other workers; experiences of ratings and evaluation systems, including the degree to which they seemed fair; the usability and reliability of platform technology; and workers' general likes, dislikes, and other comments. All crowdworkers were paid for their participation in the surveys and interviews, and the amount was independent of the respondent's country of residence.

3.1   GEOGRAPHICAL COVERAGE

The 2015 survey included workers from 51 countries; 75 countries were represented in the 2017 survey (see figure 3.1 and Appendix table A1.1). The surveys revealed that crowdwork is a largely urban phenomenon with four out of five workers residing in an urban or suburban community. Nearly all regions of the world are present on the five crowdworking platforms studied, with important representation from workers in Brazil, India, Indonesia, Nigeria and the United States, as well as Western and Eastern Europe. (figure 3.2 and Appendix table A1.1).

Figure 3.1 Regional coverage of the two surveys and distribution of 2017 survey respondents

2015 and 2017

2017 only

no observations

◯ Share of individuals from country, 2017
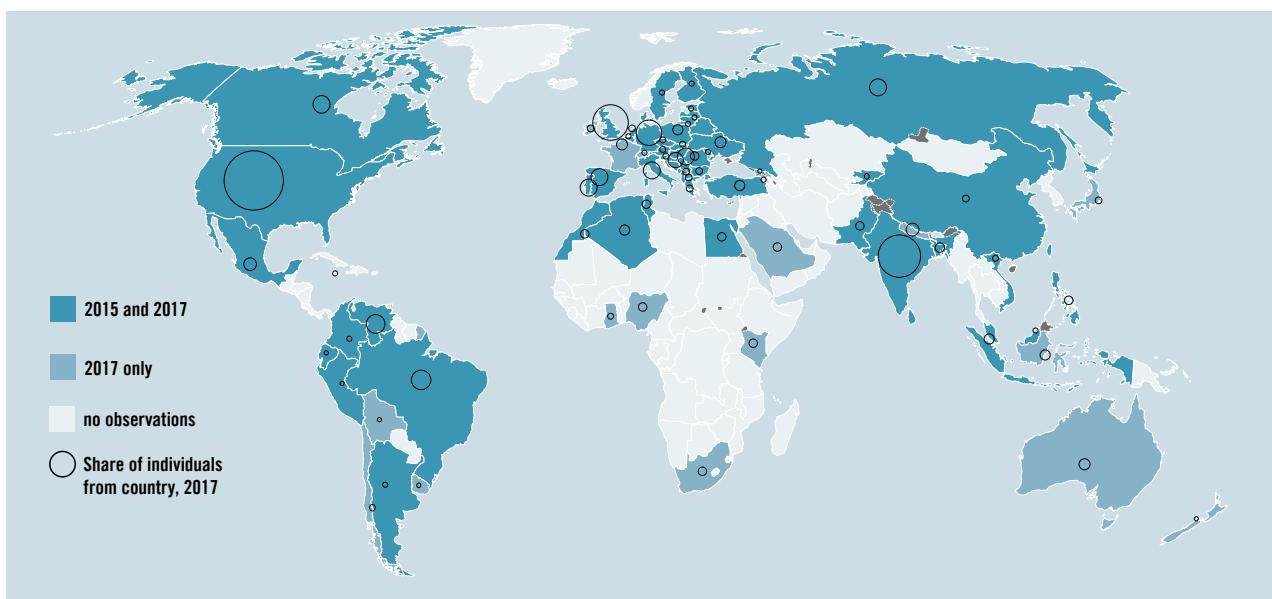
Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

AMT primarily engages workers from the United States and India, with the share of workers being 75 and 18 per cent respectively.[5] In our 2017 sample, the proportions were 52 per cent from India, 47 per cent from the United States, and the remaining 1 per cent from five other countries. Clickworker respondents resided in 22 different countries, with the majority of them from Europe (39 per cent in Germany, 10 per cent in the United Kingdom, 9 per cent in Italy and 5 per cent in Spain), 16 per cent from the United States and 4 per cent from India (Appendix table A1.1). Prolific is clearly most popular in its home country, the United Kingdom (47 per cent), followed by the United States (39 per cent), but is also used by workers in 23 other countries, largely European (ranging between 0.2 and 2 per cent). Microworkers and CrowdFlower had the most diverse workforce. Almost one-third (30 per cent) of the respondents on Microworkers were from the United States, 10 per cent from India, and the remaining from 52 other countries around the globe. CrowdFlower respondents were from a similar number of countries in both 2015 (51 countries) and 2017 (50 countries). Further, in both years the workers largely came from Bosnia and Herzegovina, India, Serbia, United States and Venezuela (Appendix table A1.1).

Figure 3.2 Regional distribution of crowdworkers, by platform (percentages)
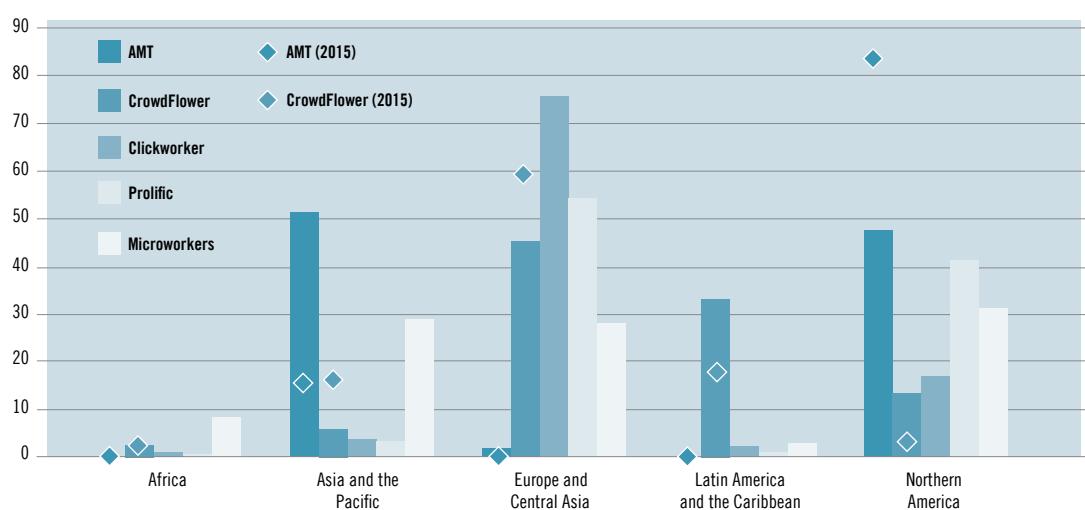
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

3.2   BASIC DEMOGRAPHICS OF CROWDWORKERS

The overall gender balance was quite uneven in 2017 (figure 3.3); in the overall sample, one out of three workers was a woman. In 2015, there was gender balance among AMT workers based in the United States (52 per cent men and 48 per cent women), but among workers on AMT India and on CrowdFlower, there were many more men than women. In 2017, the gender balance had become even more skewed among AMT workers in both India and the United States. There were more men than women performing these tasks on CrowdFlower and Microworkers, while there was gender balance on Clickworker and Prolific in 2017. In developing countries there was no gender balance, with only one out of five workers being a woman.

Figure 3.3 Distribution of crowdworkers, by platform and gender (percentages)
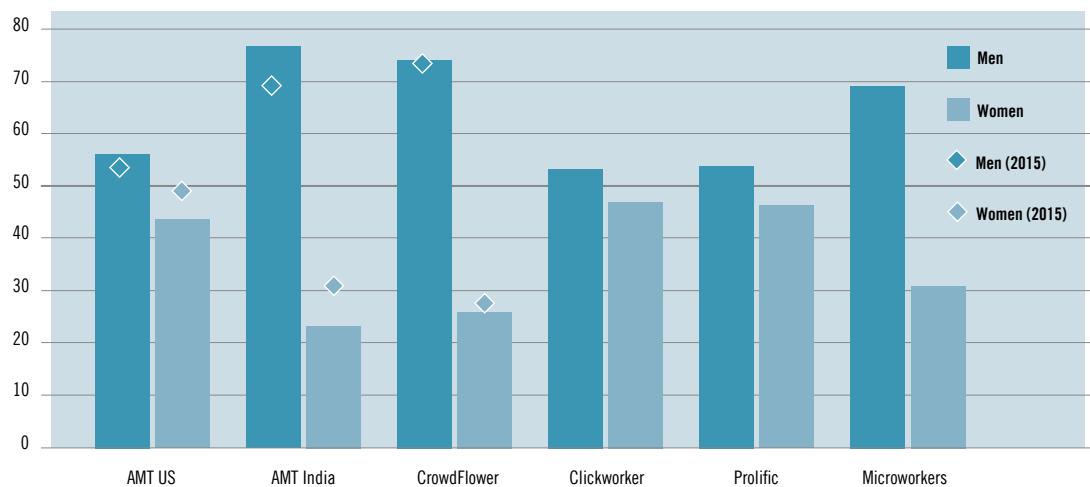
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

The average age of crowdworkers was 33.2 years in 2017, slightly lower than in 2015 (34.7 years) (figure 3.4). It differed across the platforms. Prolific workers were on average younger, at 30.3 years compared with American workers performing tasks on AMT at 35.8 years in 2017. In 2015, Indian workers were on average younger (31.8 years) than American workers (35.5 years). The majority of the crowdworkers were in the age range 25 to 40 years; 10 per cent were above 50 years of age, with the oldest respondents being 83 and 71 years old in 2015 and 2017, respectively.

Figure 3.4 Age distribution of crowdworkers, all platforms (percentages)
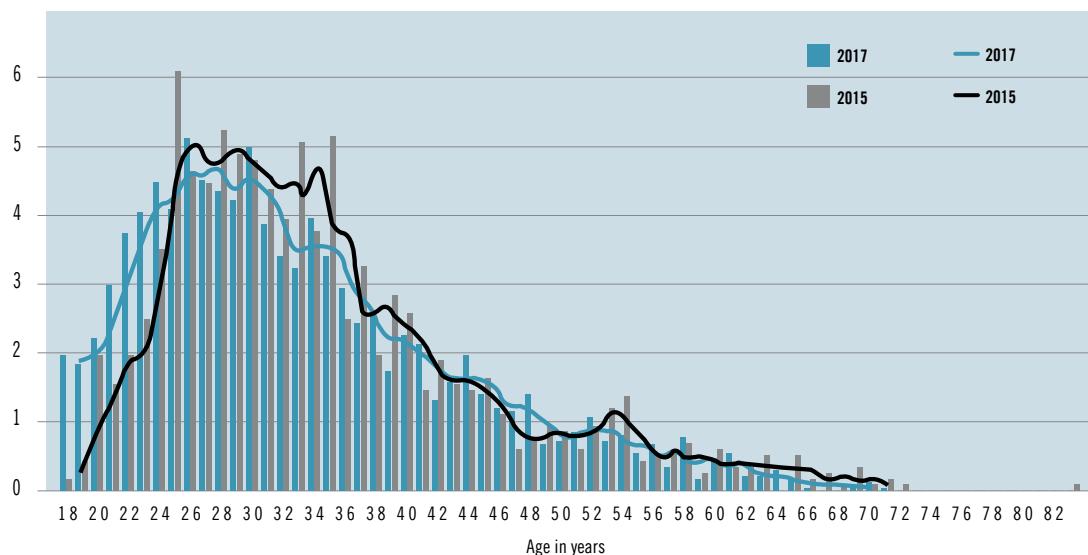
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

There are some regional differences. The average age of the crowdworkers was around 28 years in developing countries, and 35 years in developed countries. The African and Latin American and Caribbean workers were on average younger than the Asian workers and those from developed countries. In Africa and Latin America and the Caribbean, the age range was 18–51 and 18–54 years respectively, while in Asia and the Pacific, it was 18–65 years in 2017. In developed countries, it ranged between 18 and 71 years in 2017. In 2015, both sexes were equally represented in the age groups 26–45 years, but this was not so in 2017 (figure 3.5). In 2017, more women performed tasks on platforms than men in the age group 36–45 and 46+ years.

Figure 3.5 Distribution of crowdworkers by age group and gender, all platforms (percentages)
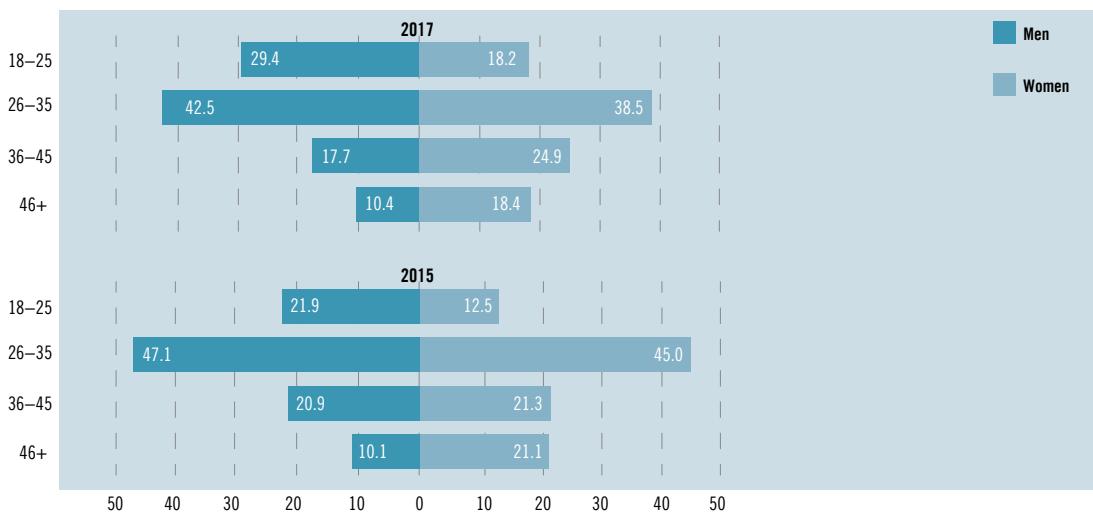
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

Crowdworkers are almost equally divided between those who were single (48 per cent) and those who were married or cohabiting (47 per cent) and the proportions were quite similar between the two surveys. The proportion of workers who were married was eight percentage points higher in developing compared to developed countries in 2017. There were differences across the platforms in both years. In 2015, Indian AMT workers had a higher rate of marriage or cohabitation (61 per cent) compared to American AMT workers (45 per cent) or CrowdFlower workers (43 per cent). The proportion of workers who were married or cohabiting was lower for American workers on AMT (41 per cent) and higher for CrowdFlower workers (53 per cent) in 2017. Across platforms, a higher percentage of crowdworkers on Microworkers were not married (57 per cent) compared to Indian AMT workers (38 per cent).

In addition, the proportion of workers living alone was relatively small (13 per cent). About 22 per cent lived in households of two people, 23 per cent in households of three, 25 per cent in households of four, and 18 per cent in households of five or more. A higher proportion of American workers on AMT (27 per cent) and workers on Prolific (17 per cent) lived alone compared to Indian workers on AMT (1 per cent) in 2017, and the findings for AMT workers were similar to what was observed in 2015. About 43 per cent of the respondents had children living in their households in 2017, which was slightly higher than in 2015 (41 per cent). Of those, 80 per cent (2017) and 86 per cent (2015) reported that these were their own children. Among those respondents having children, over 50 per cent had children under the age of six years (56 per cent in 2017 and 61 per cent in 2015). In 2015, a higher proportion of Indian workers on AMT had children under the age of six (37 per cent) compared to American AMT workers (16 per cent), and these proportions were similar in 2017.

Crowdworkers are well-educated, with fewer than 18 per cent having a high school diploma or less in 2017. About one-fourth of the workers have a technical certificate or have some university education, and 37 per cent have a Bachelor's degree while 20 per cent have a post-graduate degree or higher education (figure 3.6). These figures are quite similar for both the years. Education levels are quite high in Asia with 80 per cent of the workers having a Bachelor's degree or higher compared to Africa (47 per cent) where it is the lowest. Across platforms a high proportion of Indian workers on AMT have a Bachelor's degree (57 per cent) or post-graduate degree (35 per cent) compared with 48 per cent of Microworkers respondents and 44 per cent of American workers on AMT in 2017. A sizable proportion (21 per cent) of crowdworkers are young and currently pursuing university education, ranging from 17 per cent in Northern America to 40 per cent in Africa.

Figure 3.6 Educational level of crowdworkers, by platform (percentages)
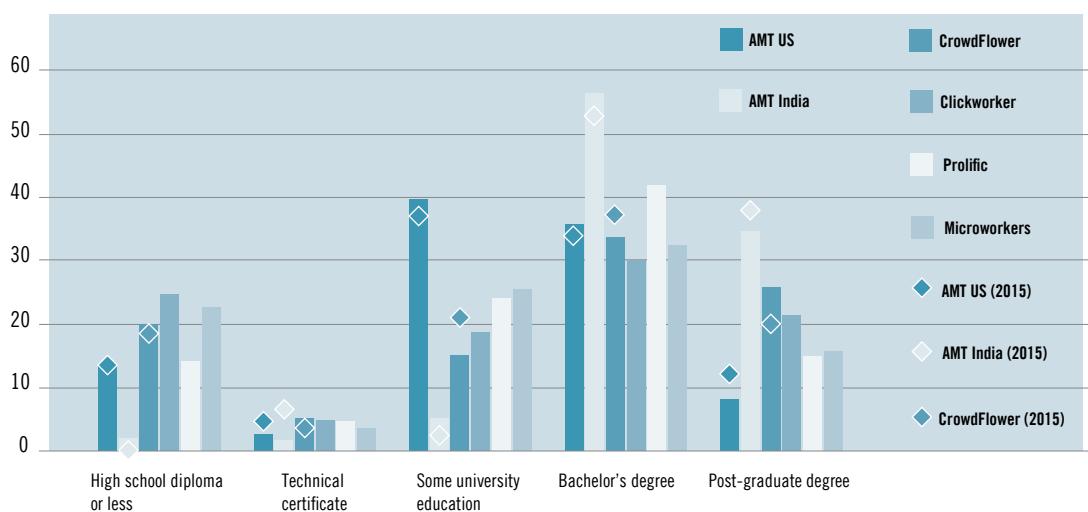
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

The turnover of crowdworkers in the online platform economy is quite high, as after trying microtasks for a period of time, many discover that this work does not fit their interests. As one of the survey respondents opined, *"Crowdsourcing is not for everyone because it takes diligence and skill to find enough work to make it seem worthwhile."* However, there is also a sizable proportion of workers who continue to perform crowdwork for many years for various reasons. Overall, 56 per cent of survey respondents have performed crowdwork for more than a year and this is quite similar across both the survey years. About 29 per cent of workers had more than three years' experience in crowdwork in 2017, four percentage points higher than in 2015; this probably reflects the higher percentage of developing country workers on the platform, most of whom are well-educated. Across regions, over 60 per cent of the workers in Asia and the Pacific

and developed countries have been active on these platforms for more than a year, while crowdwork seems to be a more recent phenomenon in Latin America and the Caribbean (48 per cent) and even more so in Africa (33 per cent).

Across platforms, Indian workers on AMT have the longest tenure, with 66 per cent of them working for more than three years. This could be due to Amazon's 2012 decision to restrict new accounts for non-American workers, which has allowed existing workers to continue on these platforms with less competition. The tenure of workers on Clickworker and Microworkers is quite short, with 60 per cent of these workers performing crowdwork for less than a year. This could indicate either that there is easier entry to those platforms or that the turnover rate is higher than on other platforms due to the nature of tasks that are posted (figure 3.7).

Figure 3.7 Tenure of crowdworkers, by platform (percentages)
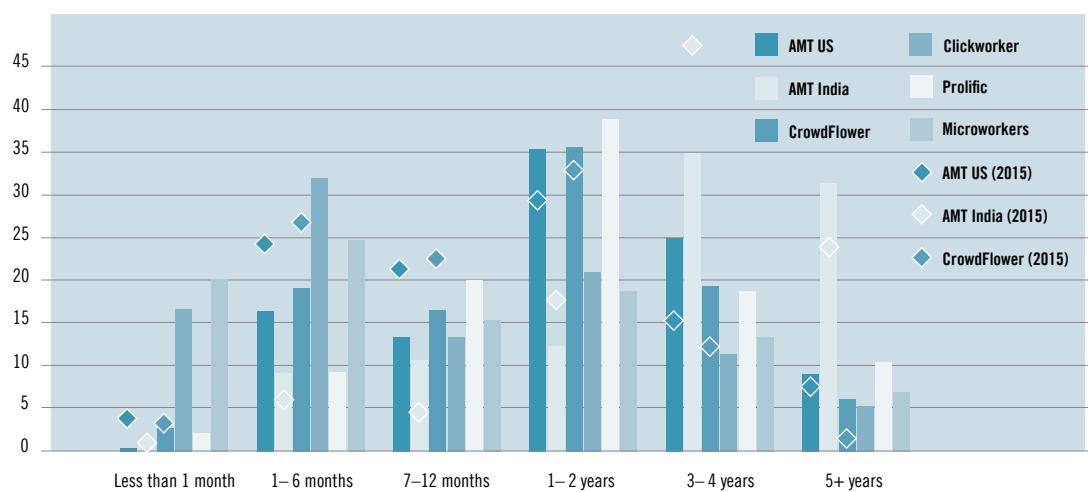
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

3.3 REASONS FOR UNDERTAKING CROWDWORK

The survey asked workers about their reasons for undertaking crowdwork; if workers responded with several reasons, they were asked to identify the most important one. For about 32 per cent of the workers in 2017, the most important reason for performing crowdwork was to "complement pay from other jobs", while for 22 per cent it was because they "prefer to work from home". These proportions were 20 and 36 per cent in 2015 (figure 3.8). There were important differences across platforms, such as "complement pay from other jobs" being more important for workers on Prolific and American workers on AMT (around 44 per cent).

These two reasons were also most important in all regions. In addition, 22 per cent of the workers in Latin America (with strong representation from Venezuela and Brazil) and 9 per cent of the Indian workers on AMT preferred crowdwork because "pay is better than other jobs available". Respondents on other platforms or regions did not share these views. There were strong differences by gender for those who could "only work from home", with 15 per cent of women workers giving this reason compared to 5 per cent of men. On AMT, 21 per cent of Indian female workers expressed this view compared with 10 per cent of Indian male workers. The other reason for undertaking crowdwork was that they "enjoy it" (10 per cent); this view was mentioned by 15 per cent of Indian workers on AMT and 10 per cent of workers on Prolific and Microworkers.

Figure 3.8 **Most important reason for performing crowdwork, by platform (percentages)**
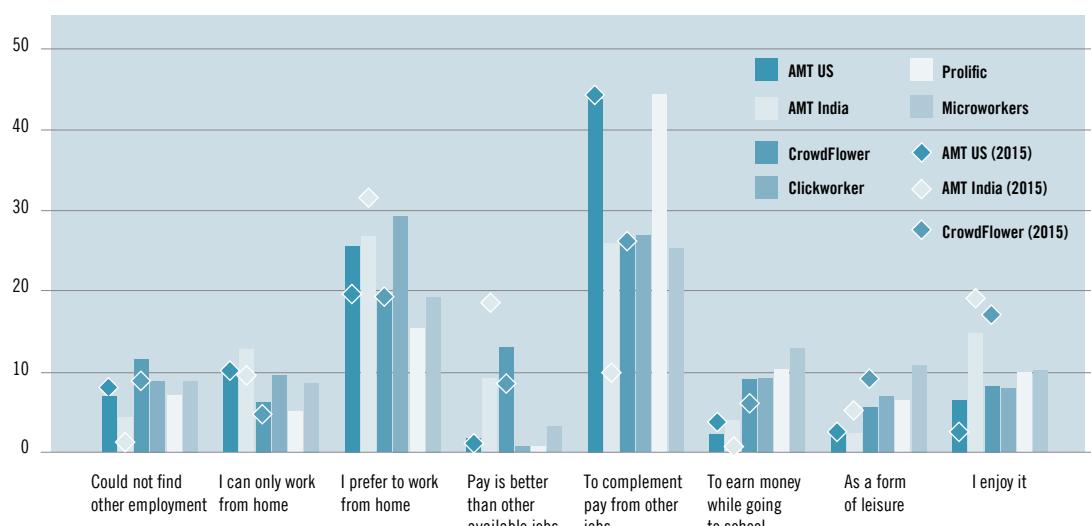
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

The qualitative information provided by the respondents also brought out the care responsibilities (caring for children, the disabled, or elderly adults) that many respondents had, which restricted them from undertaking work outside home.

> *I take care of my mom so that she doesn't have to go to the nursing home. As she gets older, her needs become more time intensive. We would not be able to afford to pay someone to stay.* (Respondent on Prolific, United States)

> *I am unable to work, because I take care of my ill mother and being a crowdworker gives me the flexibility and means to make some money while I am confined to home.* (Respondent on AMT, United States)

I can only work from home because I can't leave my Mom who is sick. (Respondent on Microworkers, Philippines)

I'm a single parent to 4 kids in 3 different schools. Traditional workplaces are not compatible with my current needs. (AMT worker, IGM Survey)

I have a sick child (autism and cancer) and he needs all day care. (Respondent on CrowdFlower, Serbia)

I really like that it gives me the freedom to be home with my kids but make a little income when I can. (Respondent on Microworkers, United States)

Health problems were also frequently mentioned as one of the reasons why the respondents preferred to work from home or could only work from home. In general, the health status of the respondents was good (81 per cent); only 16 per cent reported that it was fair, and about 3 per cent described their health to be poor or very poor (figure 3.9). Nevertheless, about 19 per cent of respondents reported that they had current physical or mental health conditions or illnesses lasting or expected to last 12 months or more. For more than half of these individuals (54 per cent), these health problems affect the kind of paid work that they might do. For about 18 per cent of them, the health conditions or illnesses strongly affect their ability to carry out day-to-day activities and crowdwork seems to provide an alternative way of carrying on work and earning some income.

Figure 3.9 General health status of crowdworkers, by platform (percentages)
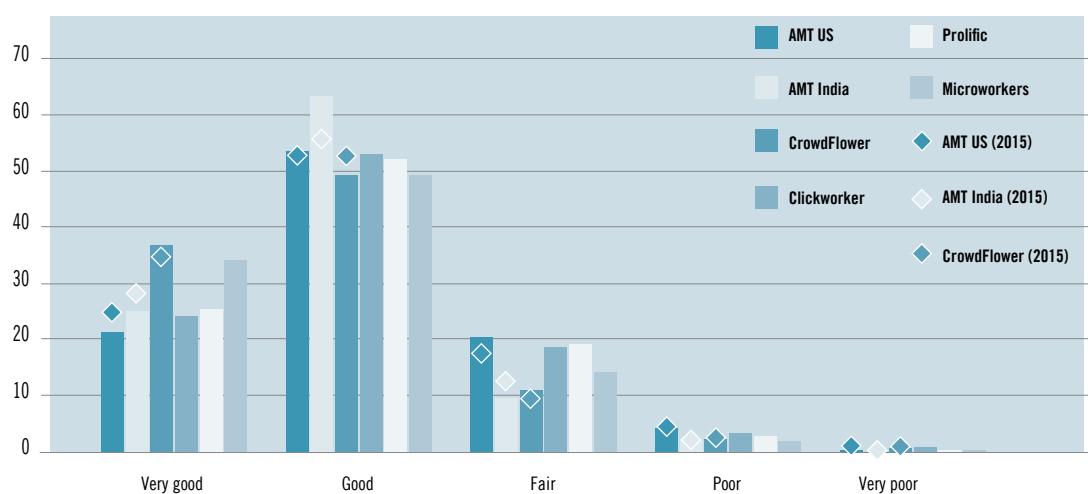
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

About 8 per cent of individuals surveyed said that the most important reason they do crowdwork is because they "can only work from home". Of these, 25 per cent said that this was due to their health problems. Of the 22 per cent in 2017 who said they do crowdwork mainly because they "prefer to work from home", 7 per cent stated it was due to their health problems. The ability to work from home and not have to interact with other people was seen as an advantage among crowdwork respondents with health conditions such as anxiety, or temporary or permanent physical disabilities.

I have chronic health conditions that prevents me from being able to work regular consecutive hours outside home. I also stay at home to take care of my two children. (Respondent on Microworkers, United States)

I suffer from depression and anxiety disorder which makes it hard for me to go out and interact with other people. (Respondent on Clickworker, Germany)

I am disabled due to spinal cord injury and have limited mobility. (Respondent on AMT, India)

I have Autism Spectrum Disorder which limits my social skills and ability to interact with others. By working from home these problems do not affect my ability to complete tasks successfully. (Respondent on Clickworker, United Kingdom)

For workers who were able to derive a primary income from crowdwork, especially those with health problems, the ability to work from home was often paramount. This flexibility to work from home was also especially important for caregivers. There were considerable differences among respondents for the other reasons specified.

To have a better understanding of the motivation of workers to undertake crowdwork, respondents were also asked about their previous work prior to beginning crowdwork. Overall, more than half (55 per cent) had been working as an employee, with similar proportions across gender. The proportions were high among workers on AMT (64 per cent for American workers, 67 per cent for Indian workers), though lower among workers on Clickworker (46 per cent) (figure 3.10). The other activities included self-employment or running a business (25 per cent), with a higher proportion of men (27 per cent) and Indian workers on AMT (39 per cent) engaged in such activity. About 20 per cent of the workers reported that they had been "independent workers" (working as a freelancer or a consultant) and this was higher among men than women and among workers on Microworkers (27 per cent) and CrowdFlower (24 per cent). More than half (55 per cent) of these workers were engaged in high-skilled occupations prior to beginning crowdwork, i.e. managers (14 per cent), professionals (29 per cent) or technical professionals (11 per cent). A sizable proportion of workers (29 per cent) were engaged in medium-skilled occupations[6] and the remaining 16 per cent were engaged in low-skilled occupations.[7]

Figure 3.10 Main activity prior to beginning crowdwork, by gender, 2017 (percentages)
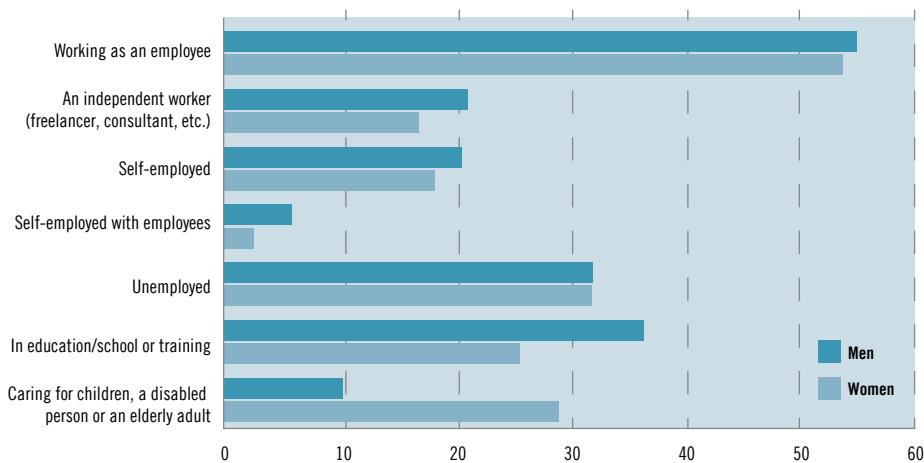
Source: ILO survey of crowdworkers, 2017.

About one-third of the workers reported that prior to beginning crowdwork they had been in education. This figure was 10 percentage points higher for men than women, while 17 per cent of workers reported that they had been engaged in caring for children, a disabled person or an elderly adult (30 per cent of women, 10 per cent of men). About one-third of the workers reported that they had been unemployed; these proportions were quite high among workers on Microworkers and CrowdFlower (39 per cent). However, if one takes into consideration workers who had not been engaged in any activity, then only about 22 per cent of the workers had been unemployed (22 per cent males, 24 per cent females), and about 86 per cent of these reported that they had been unemployed for more than six months, which could be an important motivator for engaging in crowdwork.

3.4   MAIN SOURCE OF INCOME

Crowdwork was identified as the main source of income by about 32 per cent of the workers. The proportions are quite similar for AMT workers for the two years, but different for CrowdFlower workers (figure 3.11, panel A). Across platforms, in 2017 there was a higher incidence of American and Indian workers on AMT and CrowdFlower who were dependent on crowdwork as their primary source of income compared to those on Clickworker, Prolific and Microworkers. The survey also asked whether respondents had any other paid jobs, freelance work or business besides crowdwork. The analysis of these data for 2017 revealed that dependence on crowdwork was much higher than what was reported: about 48 per cent of the crowdworkers were not engaged in any other type of employment (figure 3.11, panel B). An additional 8 per cent had another job, but earned more from crowdwork than in the other job, implying that for 56 per cent of the respondents, the main (personal) income source was crowdwork.

Figure 3.11 Main source of income, by platform

Panel A. Is crowdwork your primary means of income (i.e. your main job)?

Panel B. Do you have any other paid jobs, freelance work or business besides crowdwork?

% answering "yes"
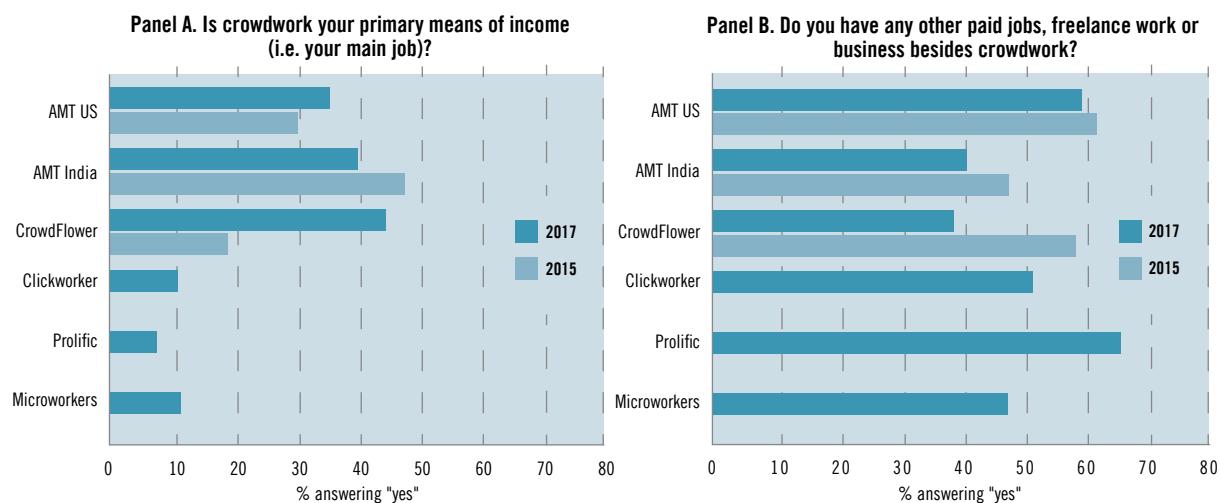
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

Of those engaged in other paid jobs (52 per cent), about one-third (32 per cent) were salaried employees, while others were in non-standard employment, including part-time and casual work (33 per cent), freelance (25 per cent) or owner or partner in business (10 per cent) (figure 3.12). There was a higher incidence of being a salaried employee among Indian AMT workers (58 per cent) and of being in hourly, part-time work among American AMT workers (46 per cent) in 2017, and these proportions were slightly lower than what was observed in 2015. The incidence of being an employee was much higher for AMT workers compared to workers on other platforms. The incidence of freelance work was much higher among workers on Clickworker (36 per cent) and Microworkers (32 per cent), and across regions in Africa (46 per cent) and Latin America and the Caribbean (32 per cent).

> *I use Mechanical Turk currently as my primary source of income as someone who is self-employed. I enjoy being able to work from home, choose the hours that I work, and not need to commute. Mechanical Turk allows me to earn income from home without currently needing employment elsewhere.* (AMT worker, IGM Survey)

Figure 3.12 What best describes your role in your other job? by platform (percentages)
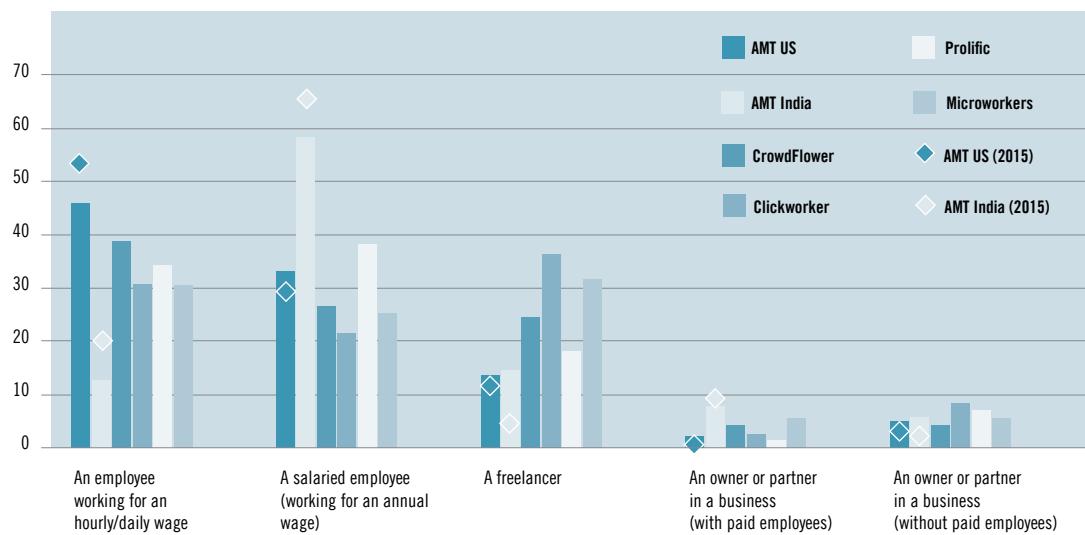
Source: ILO survey of crowdworkers, 2015 (S2) and 2017.

A significant proportion of the workers engaged in another job besides crowdwork were engaged in high-skilled occupations (57 per cent) as managers (14 per cent), professionals (31 per cent) or technical professionals (12 per cent) (figure 3.13). Nearly two-thirds of workers were engaged in high-skilled occupations in Latin America and the Caribbean (65 per cent), Asia and Pacific (61 per cent) and Europe and Central Asia (59 per cent). About 26 per cent of the workers were engaged in medium-skilled occupations and the remaining 17 per cent were engaged in low-skilled occupations. A higher share of workers from Africa (42 per cent) and Northern America (31 per cent) were engaged in medium-skilled occupations; in Africa, 27 per cent of workers were engaged in low-skilled occupations.

Figure 3.13 Occupation of crowdworkers engaged in other jobs, by region, 2017 (percentages)
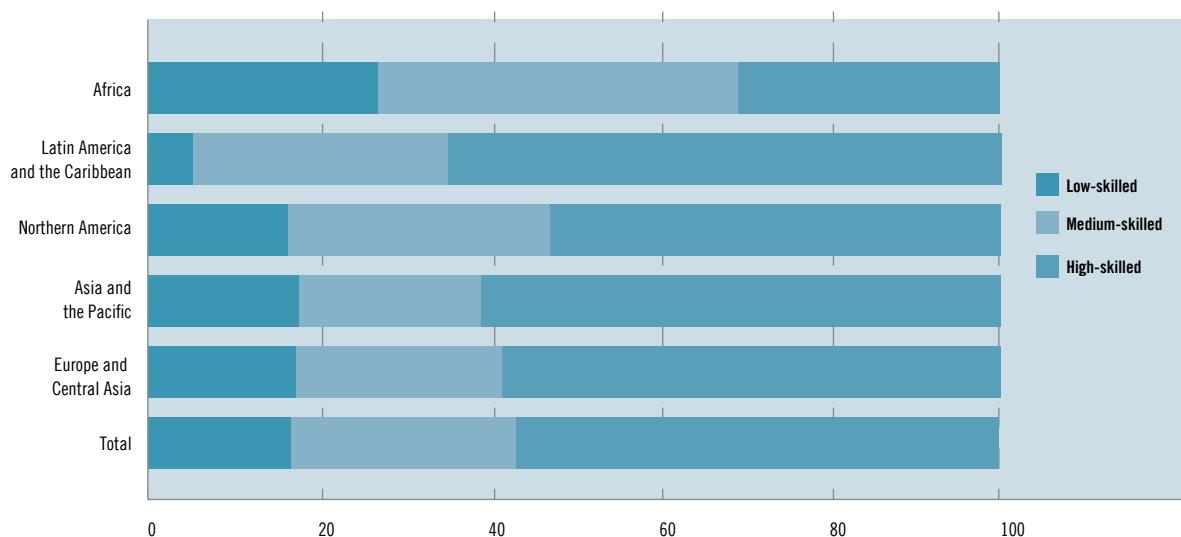
Source: ILO survey of crowdworkers, 2017.

The survey asked respondents with a job besides crowdwork whether they spent time doing crowdwork while on the other job. Almost 45 per cent of them reported that they did, and this was quite similar across all platforms, though more frequent in Africa, Latin America and the Caribbean (around 60 per cent each) and in Asia and the Pacific (54 per cent). Moreover, about 10 per cent of the workers performed crowdwork only during working hours, largely in Europe and Central Asia and Africa. The reason for performing crowdwork exclusively during working hours was because they were bored with the tasks they were doing at work. In addition, about 36 per cent of them believed that their employers would be accepting of them performing crowdwork during working hours, this was especially so in developing countries.

The surveys included a question asking respondents about their overall satisfaction with crowdworking: "How satisfied are you with working as a crowdworker?" Single-measure job satisfaction questions such as this typically gauge workers' feelings about the intrinsic characteristics of a job (the work that the person actually performs, autonomy, stress at work, among others) rather than extrinsic characteristics such as pay, contractual status, or prospects for promotion (Rose, 2003). The majority of the crowdworkers stated that they were satisfied or very satisfied with crowdwork (figure 3.14). Overall, only 6 per cent were dissatisfied and 1 per cent very dissatisfied. Across the regions, satisfaction levels were highest in Asia and the Pacific and Latin America and the Caribbean, while there was more dissatisfaction in Africa and Northern America.

Figure 3.14 Satisfaction with crowdwork, by platform (percentages)
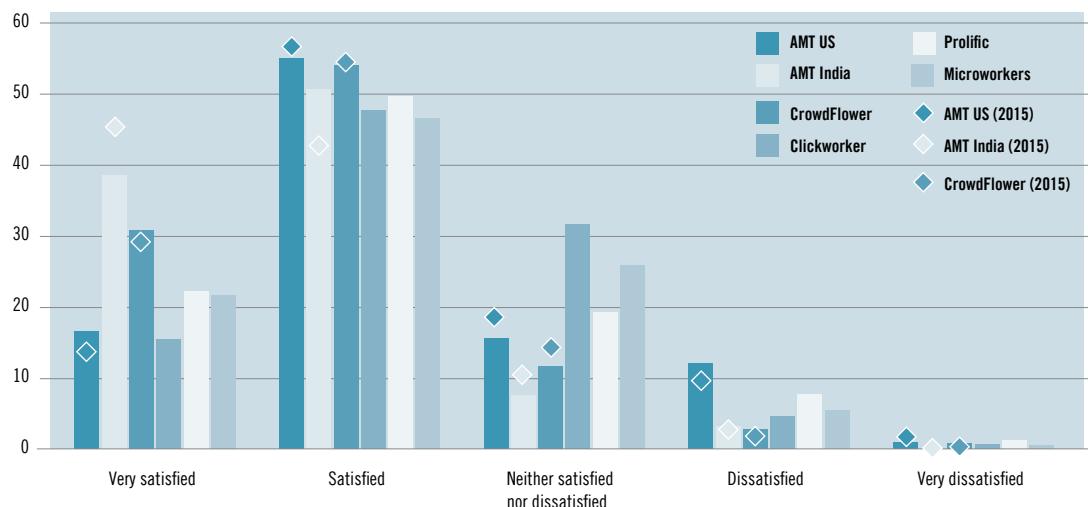
Source: ILO survey of crowdworkers, 2015 (S1 and S2) and 2017.

When asked for the reasons for their satisfaction or dissatisfaction with crowdwork, many mentioned the flexibility and the ability to work from home as being the reasons for being attracted to it. However, opinions were quite divided on issues such as pay levels, rejections and non-responsiveness of the platforms, irregularity of work, the nature of tasks and so on.

> *The work in itself is boring and physically tiring. But the flexible working hours are attractive.* (Respondent on Clickworker, Germany)

> *The work is flexible, interesting, and enables me to work from home. However, it is quite poorly paid.* (Respondent on CrowdFlower, United Kingdom)

> *It pays well and allows me to spend time with my children.*
> (Respondent on AMT, United States)

These and other issues are analysed and discussed in more detail in the next two chapters.

NOTES

1   In March 2018, CrowdFlower changed its name to Figure Eight.

2   See Appendix II for more detail on the 2015 and 2017 surveys.

3   At the time of the 2017 survey, according to AMT statistics, the share of workers in the United States was around 75 per cent and in India around 18 per cent, and other countries comprised only 7 per cent. For details see: http://demographics.mturk-tracker.com/; and Ipeirotis (2010).

4   For more details see http://faircrowd.work/ platform-reviews/platform-review-information/.

5   For details see https://demographics. mturk-tracker.com/; and lpeirotis (2010).

6   Medium-skilled occupations include clerical workers, services and sales workers, craft and related activities, and plant, machine operators and assemblers.

7   Low-skilled occupations include skilled agricultural and fishery workers and elementary occupations.

Crowdworker, Canada

CHAPTER 4

How do crowdworkers fare?

The last chapter provided an overview of the demographic and labour market profile of microtask platform workers based on the findings of the ILO surveys. This chapter focuses on how these workers fare on the platforms, delving into an array of working conditions including earnings, social protection coverage, availability of work, working time and how it influences work-life balance. While many of the evaluations of crowdwork have focused on earnings (Schriner and Oerther, 2014), these other working condition dimensions are fundamental to any assessment of job quality.

4.1 REMUNERATION

Crowdwork platforms often try to recruit their workers by promising independence and flexibility with regard to the amount of work, the work schedule and the location. However, by classifying workers as "independent contractors", platforms are trying to remove themselves from any legal and social responsibility to them, including minimum wages (De Stefano, 2016; Johnston and Land-Kazlauskas, 2018). Existing studies on such platforms, mainly focusing on AMT, have found workers' remuneration to be quite low (see e.g. Hara et al., 2018; Berg, 2016; Bergvall-Kareborn and Howcroft, 2014; Felstiner, 2011; Ipeirotis, 2010). The ILO surveys analyzing the five main platforms confirm these findings based on the responses of the workers. In both surveys, respondents were asked how much money they earned from crowdwork in a typical week, and how many hours they spent doing crowdwork. A distinction is made between time spent doing paid work (i.e. actual work tasks that the crowdworker was paid for) and time spent doing unpaid work (i.e. time spent looking for tasks, earning qualifications, researching requesters through online forums, communicating with requesters or clients and leaving reviews, as well as unpaid/rejected tasks/tasks ultimately not submitted). Based on this information, two measures of hourly wage earnings are presented: one that accounts only for hours spent on paid work, and the other for total hours spent on both paid and unpaid work.

The ILO survey finds that on average, in 2017, a worker earned US$4.43 per hour when only paid work is considered, and if total paid and unpaid hours are considered, then the average earnings drop to US$3.31 per hour (see table 4.1). When we take only time spent on paid work, then depending upon the platform and country of the worker, workers

earned between US$2.65 (CrowdFlower) and $8.51 (AMT USA) per hour. The average earnings reduce to between US$1.95 (CrowdFlower) and $6.54 (AMT USA) when accounting for unpaid work. In 2015, the average earnings of American workers on AMT was lower than in 2017, irrespective of the measure of earning. In contrast, the average earnings of Indian workers on AMT were higher in 2015 compared to 2017 for both measures of earnings. For workers on CrowdFlower, the average earnings were higher in 2015 for time spent only on paid work (see table 4.1).

Table 4.1 Hourly pay by platform (US$)

		Paid work			Paid and unpaid work		
		Median	Mean	Observations	Median	Mean	Observations
AMT USA	2017	7.50	8.51	222	5.63	6.54	222
	2015	6.00	7.56	652	4.66	5.56	651
AMT India	2017	2.14	3.40	217	1.67	2.53	217
	2015	2.19	3.95	98	1.66	2.95	98
CrowdFlower	2017	1.50	2.65	298	1.11	1.95	299
	2015	1.50	3.04	306	1.00	1.92	307
Clickworker	2017	3.19	4.49	389	2.13	3.19	390
Prolific	2017	4.55	5.45	450	3.56	4.26	446
Microworkers	2017	1.60	3.00	444	1.01	2.15	448
All platforms	2017	3.00	4.43	2 027	2.16	3.31	2 029
	2015	4.39	5.92	1 056	3.33	4.26	1 056

Note: Data trimmed at 1 and 99 per cent by platform.

Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

The ILO survey findings further show that a substantial proportion of workers earn below their local minimum wage. For instance, in 2017 on AMT about 48 per cent of American workers earned less than the federal minimum wage of US$7.25 when only paid work is considered, and these proportions increase to 64 per cent when unpaid work is taken into account. A recent data-driven study, which involved a plug-in that tracked the worker log data of approximately 2,500 workers over two years on AMT, found that taking account of unpaid work, the median hourly wage was around US$2 per hour and the mean wages of workers amounted to US$3.13 per hour. The study further found that only 4 per cent of the workers earned above US$7.25 per hour, raising concerns about sub-minimum wages (Hara et al., 2018). The German-based platform Clickworker advertises average earnings of US$9 per hour.[1] This roughly corresponded to the German minimum wage of €8.84 per hour as of 1 January 2017. However, the average wage on Clickworker was US$4.6 per hour of paid work, and among the survey respondents, only 11 per cent of Clickworkers reported earning US$9 or more per hour of paid work; this reduces to 7 per cent if both paid and unpaid work are counted.

Figure 4.1 presents the distribution of hourly paid and unpaid work across the five plat-
forms. The distribution for hourly paid work is skewed towards the left (less pay) for
all platforms except for American workers on AMT (panel A), and becomes even more
skewed when unpaid work is taken into consideration (panel B). As a result, a high pro-
portion of workers are remunerated below the average wage per hour of the respective
platform: 58 per cent for Prolific; 59 per cent of American workers on AMT; and around
70 per cent of workers in CrowdFlower, Clickworker, Microworkers and Indian work-
ers on AMT. The "typical" (median) worker earns much less than the platform average,
namely US$2.16 across all platform and as low as US$1.01 per hour of paid and unpaid

Figure 4.1 Distribution of hourly paid and unpaid work among workers, by platform, 2017 (in US$)

Panel A. Hourly pay (paid work) by platform

Panel B. Hourly pay (paid and unpaid work) by platform
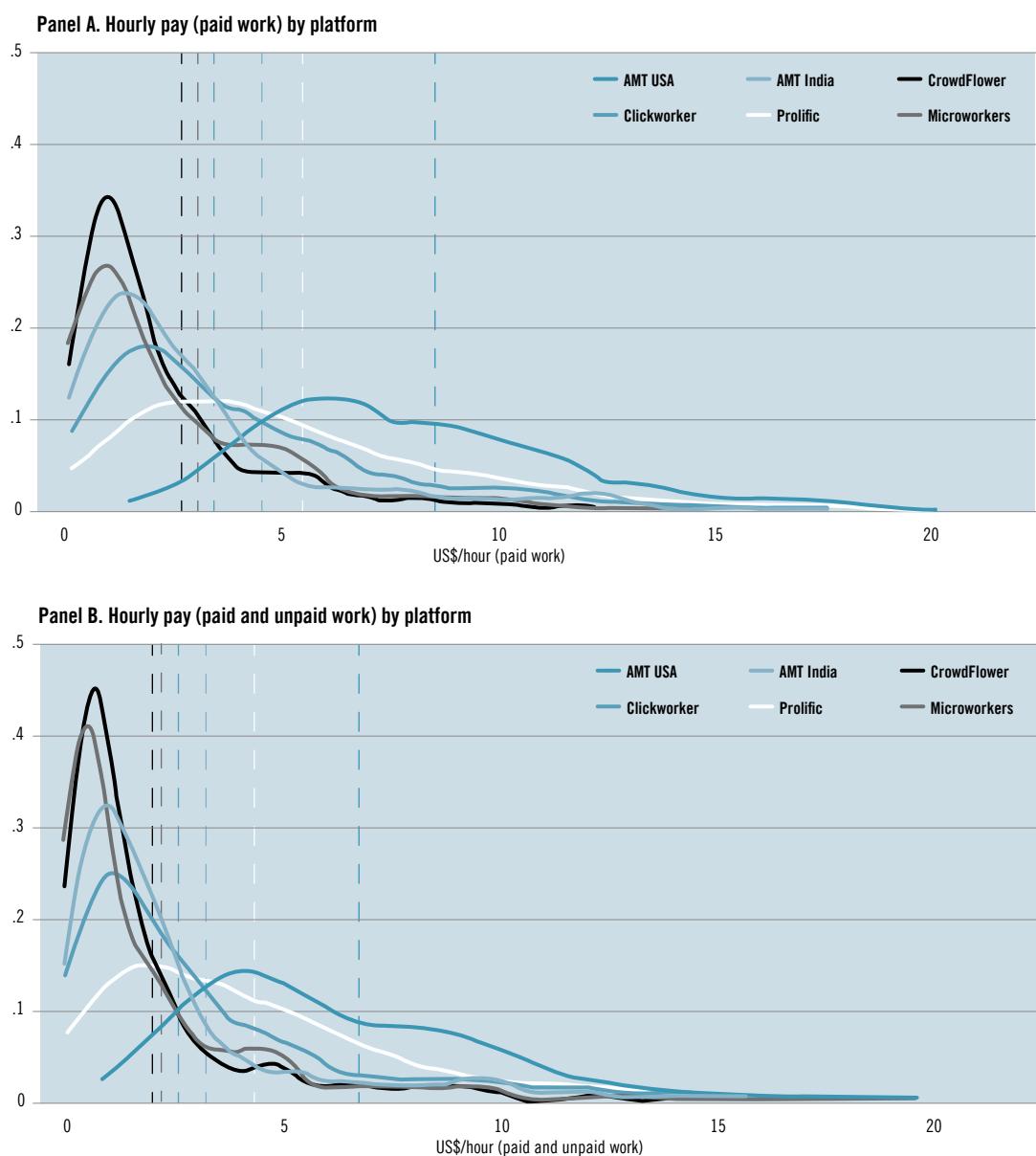
Note: Data trimmed at 1 and 99 per cent by platform. Vertical dashed lines indicate mean of the platform.

Source: ILO survey of crowdworkers, 2017.

work on Microworkers (table 4.1). This means that half of the workers earn less than US$2.16 per hour of the total time (paid and unpaid) they invest into crowdwork.

There were differences in pay across gender. In 2015, accounting for unpaid work, women's average pay was between 18 and 38 per cent less than that of men, depending on the platform. However, once individual characteristics such as education, experience and region are taken into account, the gender pay gap is statistically significant only for American workers on AMT, and reduces from 18 to 11 per cent (Adams and Berg, 2017). In 2017, women averaged a higher pay rate than men on Microworkers and an almost equal pay rate on Clickworker. On all other platforms women earned a lower pay rate, between 5 and 18 per cent less than men, accounting for unpaid work. With individual characteristics taken into account, in most of these platforms except Prolific, the gender pay gap is statistically insignificant.

There were also differences with regard to average earnings between regions. Considering both paid and unpaid work, workers in Northern America (US$4.70) and Europe and Central Asia (US$3.00) earned more than workers in other regions where pay varied between US$1.33 (Africa) and US$2.22 (Asia and the Pacific). These differences could also be partly due to different distribution of tasks across platforms. For example, on Prolific the major task is to undertake surveys, and the platform has a clear guideline that participants should be paid an ethical reward or fair pay (see box 4.1). As observed earlier, average earnings on Prolific were the second highest in 2017 (see table 4.1) and about 86 per cent of the workers were from the United States or the United Kingdom. These workers' access to a greater number of better paid tasks could partly explain their higher wage earnings when compared with developing country workers. In the global competition for tasks on online platforms, the rivalry between American or European workers and workers in developing countries for the same microtasks leads to a lowering of the equilibrium price for tasks. There are nonetheless differences in pay between workers in developing and developed economies, even within the same platform (Rani and Furrer, forthcoming).

Box 4.1. **Fair pay and ethical rewards: The case of Prolific**

Prolific presents a unique case among the platforms studied, as it endorses "ethical rewards" and asks researchers to reward participants with at least US$6.5 per hour. For many, especially in developing countries, this wage is higher than their local minimum wage, and is a reason they like the platform:

> It pays pretty well, better than minimum wage in this country, and also there is an estimate on how long the job should take you therefore you know when you're almost finished. (Prolific worker, IGM Survey)

It should be noted, however, that at the time of the 2017 survey, the promised wage of £5 per hour equated to roughly €5.87 per hour, far less than minimum wages in many EU countries, and £2.50 less than the UK minimum wage.

Moreover, the wages used to regulate tasks on Prolific are calculated based only on the time to complete the survey – not the time to log in to the site, answer a plethora of screening questions, locate a survey for which one is qualified and begin the task. For example, in the survey conducted by IG Metall, most Prolific workers reported spending just over an hour looking for work for every hour that they actually worked. Taking this overhead into account dramatically lowers the actual hourly wage received by crowdworkers.

Even on Prolific, where surveys are sometimes posted with rates of pay upwards of £18 per hour, the tasks themselves are, of course, microtasks. An £18 per hour task that takes only one minute, on average, to complete, therefore pays only £0.30 per task. To actually earn their full £18, a worker would have to locate and complete 60 unique one-minute tasks. Extrapolating outwards from this, since there are 2,250 minutes in a 37.5 hour work week, this implies a huge quantity of unique tasks to locate, qualify for and complete. This aspect of microwork greatly exacerbates the issue of low starting wages. The limits of human attention, the extra overhead required to locate and qualify for tasks, and the insufficient availability of tasks on many platforms makes it a near impossibility to sustain a living wage on crowdwork platforms, even if individual tasks are priced relatively "high".

Note: Prices as of 20 November 2017; see https://www.prolific.ac/researchers#pricing.

Figure 4.2 shows the hourly earnings (paid and unpaid work) of Indian and American workers on AMT for 2015 and 2017. The hourly earnings of Indian workers are highly skewed towards the bottom end of the distribution compared to those of American workers, which are much more evenly distributed. Over the two years, the hourly pay of Indian workers on AMT is almost similar, while there is a shift in the curve towards the right for American workers on the platform. The disparity in the average wages between American and Indian workers has increased between 2015 and 2017. On average, an American worker on AMT earned more than twice (around 2.5 times) as much per hour as an Indian worker in 2017, irrespective of the measure of earnings. If we control for individual characteristics and the nature of tasks, all else being equal, American workers on AMT on average earned 4.6 times as much as their Indian equivalents, when both paid and unpaid work are taken into account (see Appendix table A1.2, column 3). The increase in pay differentials is largely because there is huge differential in earnings between American and Indian workers at the lower end of the distribution. In addition, when controlling for education and experience, the differentials increase because Indian workers are over-represented in high levels of education and experience. The pay differentials become even more evident when we look at median wages, wherein the median Indian worker on AMT earned US$1.67 in 2017, while the median American worker earned US$5.63 per hour. Although this is a much higher rate, it was still below the US federal minimum wage.

Figure 4.2 Distribution of hourly pay (paid and unpaid work) among Indian and American workers on AMT (US$)
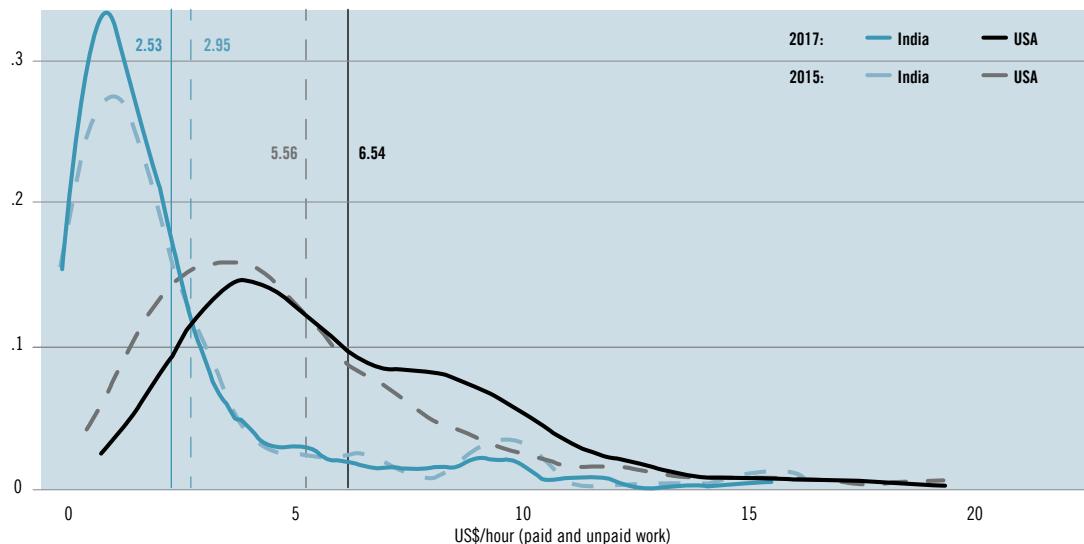
Note: Data trimmed at 1 and 99 per cent. Vertical lines indicate mean of the country.

Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

This indicates the presence of a "dual-banded pay-rate marketplace" (Martin et al., 2014, p. 8). For example, experienced US crowdworkers orient themselves towards tasks paying around or above the US minimum wage, while low-paying tasks are completed by novice workers or workers from developing countries, who are willing to undertake them to improve their experience or approval rating. For Indian workers, a lower pay rate might seem comparatively more attractive as it gives them experience and entry into these markets (ibid.). In addition, pay differentials between countries and regions are reinforced by platforms that allow tasks to be targeted to specific groups of workers according to specific criteria, including country of residence (see figure 2.1). The best-paid tasks, such as content creation and editing, and content writing, are often available only to American workers, whereas low-end and low-paying tasks, such as content access or data collection are left to Indian workers, which further increases the differentials.

It is also probable that these differences can be justified because of the variations in purchasing power. If wages were adjusted for purchasing power parity (PPP) between India and the United States, there might be some convergence, narrowing pay differentials. For instance, if the earnings are adjusted for PPP on AMT, the distribution becomes much more similar for American and Indian workers (figure 4.3). The distribution is quite similar for Indian workers for the two years, while there is a slight shift towards the right (higher earnings) for American workers. Further, the disparity in average wages is reversed, with Indian workers earning 1.3 times as much as American workers in 2017. However, median wages are almost equal for American and Indian workers in

2017, though differences exist for 2015. If we control for individual characteristics and the nature of tasks, all else being equal, American workers on AMT on average earned 36 per cent more than their Indian equivalent in 2017, when both paid and unpaid work are taken into account, though the pay differentials were not significant in 2015 (see Appendix table A1.3).

Figure 4.3 Distribution of hourly pay (paid and unpaid work) among Indian and American workers on AMT, PPP adjusted and in real terms (US$)
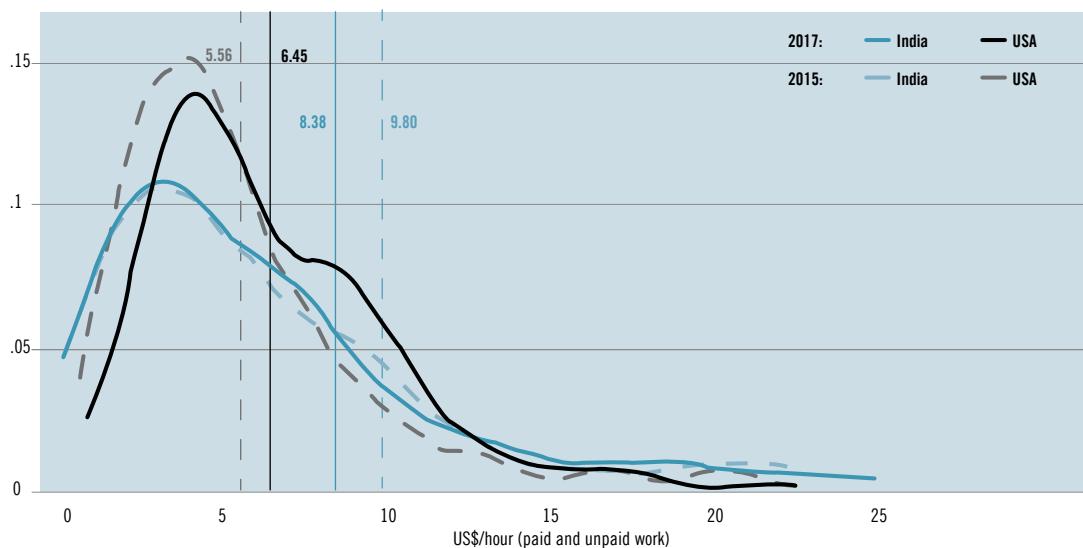
Note: Data trimmed at 1 and 99 per cent. Vertical lines indicate mean of the country.

Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

This situation, where workers in developing countries earn decent hourly wages and higher relative wages than workers in the West, was also observed for the oDesk platform (Beerepoot and Lambregts, 2015). This would imply that Northern American or European workers will have to compete with the pool of skilled workers from developing countries, as has been argued by other researchers (Brown, Lauder and Ashton, 2008; D'Costa, 2011). However, workers in developing countries will have to develop their profiles, improve their ratings and become experienced, which requires a substantial amount of effort, time and investment in their first jobs.

Despite low remuneration, workers opt to undertake crowdwork for a number of reasons, as the ILO surveys show: preferring to work from home, earning additional income for the household, or because of a lack of other employment opportunities. A small proportion of workers seem pleased with the pay, though for the vast majority, the low pay levels were a major concern and a reason for dissatisfaction. The ILO surveys included a question on what, if anything, workers would like to change about crowdwork. This

open-ended question sparked a plethora of concerns and suggestions, with the majority citing that pay should be made fair, as demonstrated by the following comments from workers in developed countries:

> *Fairer pay – a bare minimum of 10 cents a minute is barely acceptable, but anything under that is just greed. I put in a lot of thought and work into each HIT and deserve to be compensated fairly.* (Respondent on AMT, United States)

> *Pay levels are insufficient on all platforms; Prolific is better than most (which are exploitatively low) but there are not enough studies to make it a reliable weekly source of income.* (Respondent on Prolific, United Kingdom)

> *It is not really fair because the companies can pay more money for the work that is done, the wages are inadequate. I tried doing 8 hours one day to see how much I can make. On some sites you can maybe make $2 per day.*
> (Respondent on Clickworker, United States)

> *I would want standardized guidelines to fair pay like Dynamo.*
> (Respondent on Prolific, United States)

> *I think increasing the pay … The standard for Mturk for decent work is $6 per hour. But I live in a state that has a $10 minimum wage and is rising. Obviously online work needs to be averaged but you have foreign workers who put pressure on wages …*
> (Respondent on Prolific, United States)

> *More surveys with better pay for compensable time. If I work for about 30 minutes on a survey, I want to earn at least minimum wage for my hourly work. 30 minutes = $3.67... not 80 cents for 30 minutes which would be $1.60 an hour.*
> (Respondent on Microworkers, United States)

The perception of low pay was also expressed by workers in developing countries, with many stating that payments were too low and unfair. In addition, they were aware that there was differential treatment of workers in developed and developing economies and often workers from certain countries were excluded from performing certain tasks. Concerns were also raised about the mode of payment, as often workers in developing countries were given gift vouchers and not cash. Even when workers received cash, it was far lower than what was prescribed in the platform for the task, as they had to pay money transfer services such as PayPal. These concerns are expressed in the following answers to the survey:

> *Pay should be increased according to the efforts put on work. Currently the pay is very less for the time and effort we are putting.* (Respondent on AMT, India)

> *I think pay should be more humane, just because someone is desperate enough to do these jobs doesn't mean that you will literally pay them peanuts as it is rampant on Mturk.* (Respondent on Prolific, India)

Would be nice if some employers would pay more for some tasks I'm currently doing.
(Respondent on Microworkers, Bosnia and Herzegovina)

I would suggest that crowd work platforms should offer much better wage rates because a large amount of time is spent in searching and selecting tasks (unpaid works). (Respondent on AMT, India)

…I think that the pay for Indian worker is less than the pay for the worker in the US. This means the HIT with higher pay are available to them and the one which gives penny are available to Indian worker, which I have to do.
(Respondent on AMT, India)

I would like to change and increase the pay scale we get here per task in India as it is very less compared to US workers … (Respondent on AMT, India)

Better pay meeting the minimum wage requirements. More ethical treatment by companies … so that they pay our earnings properly and directly to our bank accounts and not to some **** gift card balance which has no use to us in our home country … (Respondent on AMT, India)

The low pay is particularly worrying, as many workers rely on the income from crowdwork to make ends meet. In both the ILO and IGM surveys, a substantial number of the respondents reported that their wages from crowdwork formed an important component of their budget. For instance, in the IGM survey, 80 per cent of AMT respondents reported that their wages were an important component and two-thirds said it was necessary for meeting their basic needs.[2] The income from crowdwork also formed an important or necessary component of the budget for workers on Clickworker (41 per cent) and Prolific (61 per cent).[3] It also supplemented the budget of people who were unable to make ends meet with a traditional job, those with low incomes, students, and retirees on insufficient pensions:

I was introduced to the platform by my son, I use it to earn a little extra on the side as in the UK wages are not enough and with pensions going to be so low I will struggle to survive. (Prolific worker, IGM Survey)

It has been tremendously helpful for my family. Just the few hundred I can earn from doing crowd work has made a world of difference. I carefully budget, and this helps us meet goals and have extra money for fun stuff.
(Respondent on AMT, United States)

I only use crowd work because in my country it is impossible to make a living out of a regular job, for example my dad is a trained engineer working for an oil company and my mom is a teacher, combined they make around 85 a month.
(Respondent on Microworkers, Venezuela)

I have really enjoyed working as a crowd worker, I think it is a very good source of income to people who live in countries with economic struggles.
(Respondent on CrowdFlower, Venezuela)

The ILO survey asked questions on individual and household income as well as on the financial security of the crowdworker's household. The analysis shows that income from crowdwork makes up a substantial proportion of total household income (figure 4.4). For workers who consider crowdwork to be their primary source of income, their income from crowdwork comprises about 59 per cent, followed by income from their spouse or other household members (22 per cent) and another 8 per cent from their secondary job (panel A). Private transfers from family and friends comprise about 5 per cent of their income, while other income sources (income from capital or investment public and private pensions social security or unemployment benefits) constitute 6 per cent of their income. Those respondents who do not consider crowdwork to be their primary income (panel B) earn on average as much from crowdwork as from their main job (about 37 per cent each, respectively). The rest of their household income comes from their spouse (20 per cent) or other sources (6 per cent).

Figure 4.4 Income shares, by primary means of income, 2017

Panel A. Crowdwork is main income source

- Capital (2.0%)
- Social security (2.5%)
- Private transfers (5.0%)
- Unemployment benefits (0.7%)
- Other sources (0.3%)
- Pension (0.3%)
- Spouse / hh member (21.6%)
- Crowdwork (59.3%)
- Other job (8.4%)
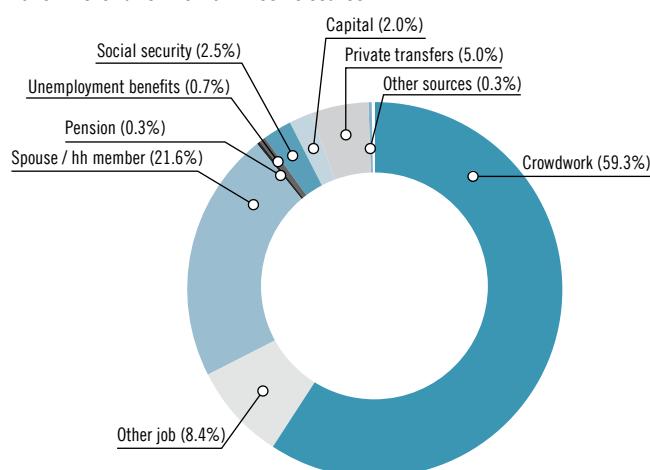
Panel B. Crowdwork is not main income source

- Capital (1.6%)
- Social security (1.7%)
- Private transfers (2.9%)
- Unemployment benefits (0.6%)
- Other sources (0.1%)
- Pension (0.2%)
- Spouse / hh member (19.9%)
- Crowdwork (36.5%)
- Other job (36.6%)
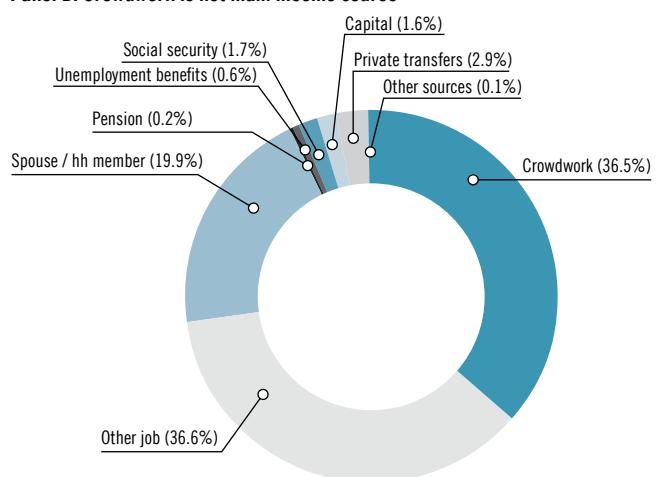
Note: Pensions comprise public and private pensions; social security includes social assistance and other social security benefits such as child benefit, etc.

Source: ILO survey of crowdworkers, 2017.

Many crowdworkers live in a precarious financial situation. One in five lives in a household whose monthly income is not enough to cover basic needs. This share is particularly high among crowdworkers in Africa (42 per cent), Asia and the Pacific (24 per cent), and Latin America (23 per cent), while it is lower, though still noteworthy, in Northern America and Europe and Central Asia (about 17 per cent). An even larger proportion of

respondents (42 per cent) live in households that do not have enough money in their savings to cover an emergency equal to one month's income. In addition, about 44 per cent of households have debts such as student loans, car payments, medical or legal bills, or loans from relatives (not including home mortgages). The proportion of households with debts is higher in Northern America (58 per cent) than in Latin America (33 per cent) and Europe and Central Asia (36 per cent) (figure 4.5).

Figure 4.5 Financial precariousness of crowdworkers, by region, 2017 (percentages)
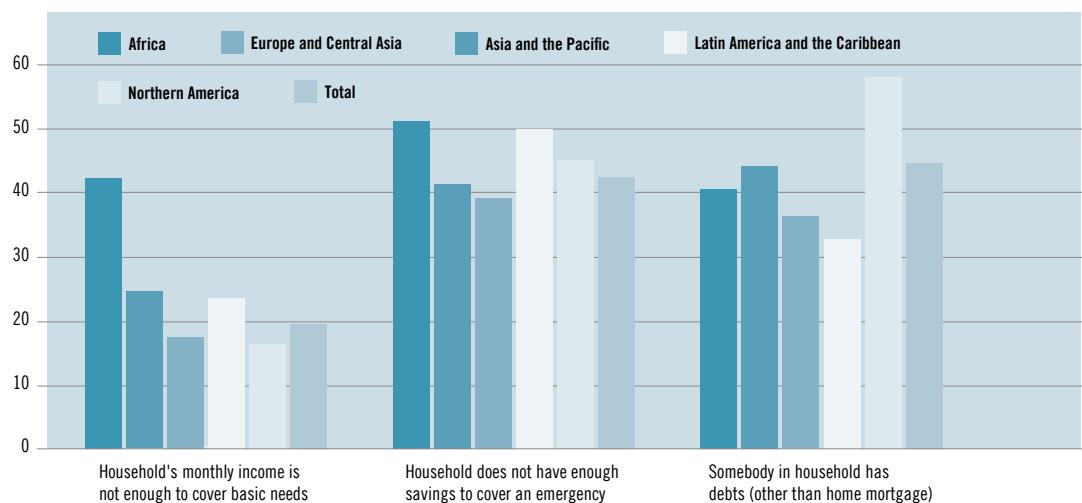
Source: ILO survey of crowdworkers, 2017.

4.2   ACCESS TO SOCIAL PROTECTION BENEFITS

Sometimes I have a feeling that a worker doesn't have much rights. Very little if any worker protection, because everything is organized for interest of the people that are hiring us. (Respondent on CrowdFlower, Serbia)

A common practice on microtask platforms – and in the gig economy – is to attempt to hire workers as "independent contractors". For instance, the AMT terms of use state that "Workers perform Tasks for Requesters in their personal capacity as an independent contractor and not as an employee of a Requester or Amazon Mechanical Turk", that they are not entitled to "any of the benefits that a Requester or Amazon Mechanical Turk may make available to its employees, such as vacation pay, sick leave, and insurance programs, including group health insurance or retirement benefits", and that they are "not eligible to recover worker's compensation benefits in the event of injury".[4] Similar statements can be found on other platforms' terms and agreements. This practice attempts to remove the platforms from the responsibility of providing standard labour

protections designated in labour law or collective bargaining agreements, including social protection benefits.

Lack of social protection was apparent in the 2017 ILO survey. Overall, only six out of ten respondents were covered by health insurance, only 35 per cent had a pension or retirement plan, 37 per cent benefited from some form of social insurance, and 29 per cent received government assistance (table 4.2). Also, in most cases, this coverage stemmed from the respondents' main job or through family members.

The survey showed that social protection coverage is inversely related to the individual's dependence on crowdwork – workers who are mainly dependent on crowdwork are more likely to be unprotected. Individuals for whom crowdwork is the main source of income (i.e. those who do not have another job) have little protection, especially with regard to pension or retirement plans. Only about 16 per cent of the workers for whom crowdwork is the main source of income were covered by a retirement plan, compared to 44 per cent of those for whom crowdwork was not the main source of income.

Similarly, those for whom crowdwork was not the main source of income were more likely to have health insurance and other social insurance (66 and 39 per cent) compared to those whose main source of income was crowdwork (52 and 32 per cent). On the other hand, those for whom crowdwork was the main source of income were more likely to receive social assistance or other government assistance, in particular food-related assistance, indicating that these individuals were already living in precarious conditions. These results are similar to that of the ILO findings in 2015, wherein only a small proportion of crowdworkers (main job) on AMT contributed towards pensions (8 per cent to private retirement and 9 per cent to social security in the United States, and only 14 per cent to a provident fund in India). The health insurance coverage was found to be low in both India (35 per cent) and the United States (62 per cent).

Table 4.2 Access to various forms of social security benefits, by main income source (percentage covered)

	Crowdwork is main income source	Crowdwork is secondary income source	Total
Health	52.1	65.6	61.3
Pension/ Retirement plan	15.6	44.2	35.1
Other social insurance	31.9	39.4	37.0
Unemployment	9.7	19.1	16.1
Worker's compensation / employment injury	15.5	23.1	20.6
Disability benefits	11.2	14.5	13.5
Others	4.2	3.1	3.5
Social assistance and other government programmes	33.4	27.0	29.0
Food-related	13.6	6.4	8.7
Housing-related	6.3	5.0	5.4
Child-related	8.4	8.8	8.7
Disability-related	7.7	5.3	6.1
General income support	6.6	6.1	6.3
Extended income tax credits	3.1	3.7	3.5
Other	3.1	1.9	2.3

Source: ILO survey of crowdworkers, 2017.

Social protection coverage also varied by region. A very small proportion of workers in developing countries contributed towards pension or retirement plans, between 21 per cent (Africa) and 32 per cent (Asia and the Pacific). Furthermore, a very small proportion of workers had access to disability benefits across regions. This suggests that, as social protection systems are still relatively weak in many developing countries, platform operators and requester may have an additional incentive to undertake tasks using the pool of labour from these countries, facing less pressure from workers and governments to ensure social protection for platform workers.

4.3   INSUFFICIENT AVAILABILITY OF WORK

The most frustrating part is waiting for work. (Clickworker worker, IGM Survey)

The lack of a clear employment relationship has an impact on the regularity of work. Crowdworkers often do not find sufficient work and have to continuously look for it without any guarantee of finding any. This is in clear contrast to traditional low-end "homework" in manufacturing, where workers are more likely to have a regular flow of work from the supplier or contractor who more regularly provides work. The desire to look for more work is also partly due to insufficient pay, and the findings of the 2017 ILO survey show that an overwhelming majority of the participants (88 per cent) responded that they would like to do more work (figure 4.6). On average, these individuals wished to do 11.6 more hours of crowdwork per week. These findings are very similar to those for 2015. The willingness to do more crowdwork was similar for both men (86 per cent) and women (90 per cent). Across regions, it was especially high in Africa (98 per cent), Asia and the Pacific (91 per cent), Europe and Central Asia (91 per cent) and below average, though still significant, in Northern America (80 per cent).

Figure 4.6 Employment, underemployment and job search, by platform (percentages)
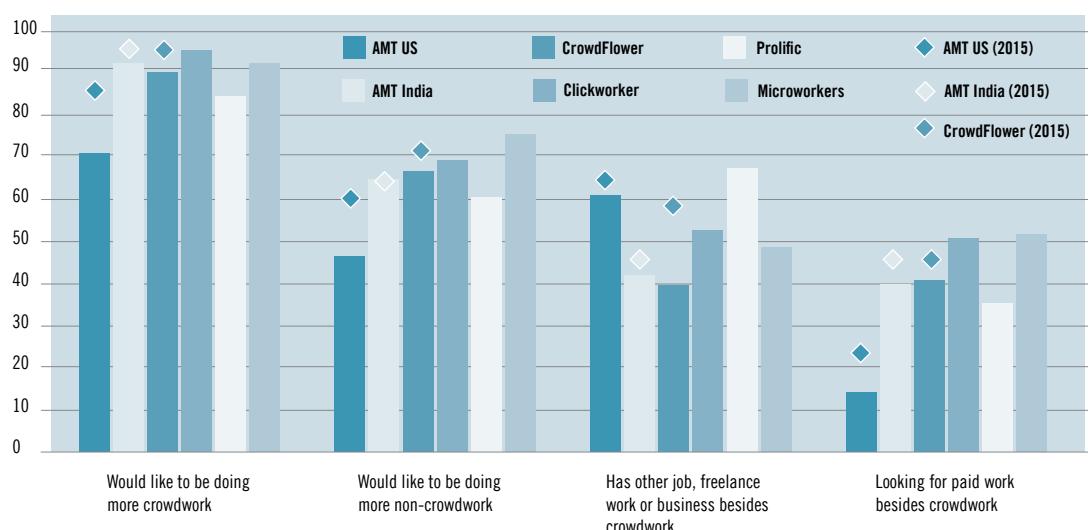
Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

Moreover, over 60 per cent of the workers on all platforms except American workers on AMT (46 per cent) indicated that they would like to do more work that isn't crowdwork (figure 4.6). However, a majority of workers reported that they could not undertake more work due to ill health and lack of available jobs, and a sizable proportion reported that their non-availability was due to care responsibilities or other committments. A substantial proportion of crowdworkers were either also involved in freelance work or business,

or looking for paid work besides crowdwork, indicating that underemployment is a serious problem for crowdworkers around the world.

When asked the reason why they were not currently doing more crowdwork, on average 58 per cent indicated that the availability of tasks was insufficient and an additional 17 per cent did not find enough well-paid tasks (figure 4.7). A higher proportion of workers in Europe and Central Asia (68 per cent) mentioned that they did not find enough work compared to workers in Asia and the Pacific (48 per cent). There was also the perception that despite spending a lot of time on the platform, the possibility of improving earnings was low:

> *I have been working for Amazon Mturk for the last six years, but the amount of jobs and the payment hasn't improved a bit even though I have got a 98.4 per cent approval rating. I wish things improve so I can work from home for ever.* (Respondent on AMT, India)

A comparatively small proportion of crowdworkers (12 per cent) mentioned that they did not have time to do more work, or were not qualified for work available (8 per cent).

Figure 4.7 Reasons for not currently doing more crowdwork, by platform (percentages)
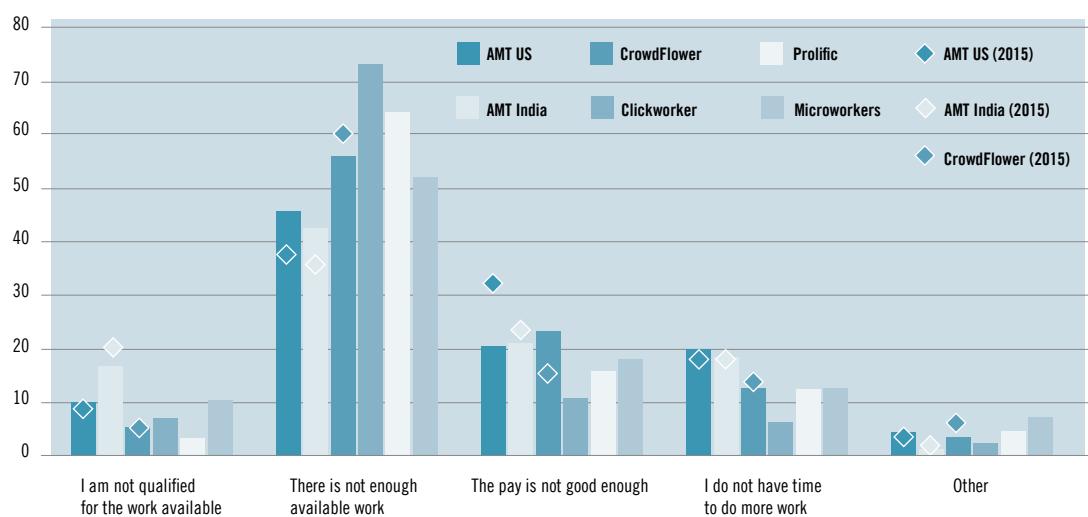
Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

For some workers, "insufficient" work may not mean no tasks at all, but rather no tasks that are priced at a rate a worker is willing to accept, or no tasks for which a particular individual meets the requirements. Many platforms provide a feature that allows clients to choose whether the tasks will be done by the global pool of labour or by a specific population based on certain characteristics, such as geographic location, earned qualifications, or other filtering criteria (see figure 2.1 for an example). Discrimination based

on nationality or gender was also observed on other platforms such as oDesk, and some authors argue that this feature is ubiquitous in the online marketplace because of the regulatory vacuum (Beerepoot and Lambregts, 2015). It is therefore possible that some well-paid tasks do not reach workers in developing countries. In the ILO survey a number of crowdworkers from developing countries mentioned in their textual answers that they were often excluded or discriminated from performing some tasks, in particular well-paying ones:

> *Make more available to users from countries other than US, they get the best work, whereas turkers in some countries have to scrape for quality HITs.*
> (Respondent on AMT, India)

> *I would like for more work to be available for international workers. It's kind a hard if you're not in the US.* (Respondent on Microworkers, Jamaica)

> *Work should not be racial. Work should be distributed equally in all the places rather than distributing it on basis of country.*
> (Respondent on Microworkers, Nepal)

> *They should treat all the workers in equity, no matter the country you come from. More jobs should be given to Nigeria.* (Respondent on Microworkers, Nigeria)

On some platforms such as Prolific, workers are actually rate-limited in the number of tasks made available to them,[5] while on others there is insufficient work available to make it a viable option.

> *There is not enough work unfortunately, I would make prolific my primary site but it just does not have the volume to make more money.*
> (Prolific worker, IGM Survey)

> *If there was enough work to make up what I make at my regular job, I would switch to all Mturk work.* (Respondent on AMT, United States)

Concerns about insufficient work were common across all platforms, even AMT that has an estimated 100,000–600,000 tasks available at any given time.[6] Nevertheless, securing a desirable, well-paying task can be difficult due to competition for tasks from other workers. In addition, work availability can be inconsistent, rendering income streams unreliable. The flexibility that it entails is also illusory, as workers cannot just turn on the computer and work whenever they want, as the jobs available are irregular. Instead, they are left feeling not entirely in control of their time or work schedule and have to be constantly available:

> *Some days I just want to get down and work and there is very little for me to actually do and it can be frustrating leading to breaks in motivation not to mention less money. Timing is everything. Being on when the good hits drop, knowing when they typically do, and being fast enough to actually get the work. I don't have very much control how much I make on a day to day basis.* (AMT worker, IGM Survey)

> *There's no regular work. Sometimes I earn 3€ one week, another week I earn 15€,
> and another 40€.* (Clickworker worker, IGM Survey)

> *I feel in control of the work but have no control over when work will be available.*
> (Clickworker worker, IGM Survey)

> *I would like to find more efficient sources of work so I could do more and spend
> less time searching or getting screened out for surveys etc.*
> (Respondent on Prolific, United Kingdom)

> *…I wish they had more offers, sometimes I have to wait too long to find another offer.*
> (Clickworker worker, IGM Survey)

> *A more just approach on how tasks are assigned to workers. Instead of first come,
> first serve, every crowd-worker should get – depending on their experience – a fair
> amount of tasks for a guaranteed time to finish.*
> (Respondent on Clickworker, Austria)

Workers on some platforms, especially on AMT, have developed sophisticated user
scripts to help them secure the best-paying tasks quickly, without having to constant-
ly reload their web browser. These scripts are also often made available to other users
through sharing sites and forums. Their use can be crucial for obtaining work and getting
it done accurately and quickly:

> *It's old and not user friendly, but I guess it works. Every worker forum highly sug-
> gests using additional programs or scripts in order to aid workers finding work.
> Using the default mturk website would really suck.* (AMT worker, IGM Survey)

> *Before finding the forums there was no way I would be able to make a living wage.
> The scripts and extensions that are shared through this community have been un-
> believably helpful along with the people that provide help.*
> (AMT worker, IGM Survey)

However, not all workers are technically savvy, and not all platforms have strong worker
communities to build such tools, which often result in workers searching for work on a
regular basis:

> *Waiting a lot for work to appear and the fact you have to refresh all the time.*
> (Clickworker worker, IGM Survey)

> *There is hardly any work at the moment and you have to keep checking the website
> and can literally miss earning money by seconds.*
> (Clickworker worker, IGM Survey)

Workers who cannot find sufficient work on one platform often turn to other platforms.
Almost half the respondents had worked on more than one platform in the month pre-
ceding the survey, and 21 per cent had worked on three or more different platforms (fig-

ure 4.8). There was a higher incidence of respondents surveyed through Clickworker, Microworkers, and Prolific working on several platforms (53 to 66 per cent), while this was somewhat less common on AMT and CrowdFlower (29 to 38 per cent). The most common combination of platforms was to use Prolific and AMT, especially among workers based in the United States in 2017. Nevertheless, more than half the workers (51 per cent) work on only one platform, as mediation of work through a platform entails huge transaction costs for the workers. The start-up costs of spreading themselves across a number of platforms is quite high, as they have to invest a lot of time doing tasks that are unpaid before they can actually get paid tasks on the platforms and establish their reputation. They also have to invest time in learning new skills, and the search costs of constantly looking for work across a number of platforms is quite high.

Figure 4.8 **Number of crowdwork platforms used in the past month, by platform (percentages)**
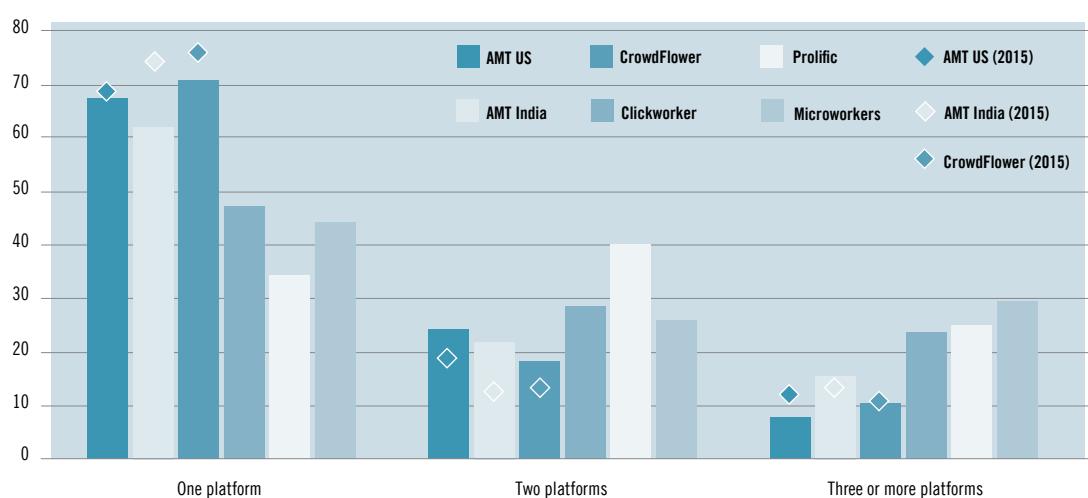
Source: ILO survey of crowdworkers, 2015 (S1) and 2017.

About 41 per cent of respondents were actively looking for paid work other than crowd-work. Of these, the majority were looking for a job in addition to doing crowdwork (83 per cent), while some wished to replace crowdwork by their new job (17 per cent). Insufficient work at a decent pay rate on the platform was cited as a major reason for looking for other work by about 63 per cent of respondents, while 34 per cent of them stated that they were using crowdwork as a transition before finding another job, and 28 per cent mentioned that they wanted to do something different. For those who had been laid off from a previous traditional job, crowdwork provided an immediate income stream, or a way to fill in gaps between other forms of employment:

I lost my last job due to a mental health condition. Working on Mturk helps me a little while attending to my medical issues. (AMT worker, IGM Survey)

I work on MTurk to make extra money to pay off bills. I have also worked on MTurk in between jobs to keep receiving an income. I would be afraid to completely do MTurk by itself without another source of income. (AMT worker, IGM Survey)

4.4   WORKING HOURS AND WORK–LIFE BALANCE

One of the positive benefits of crowdwork, noted by many of the survey respondents, is the ability to set one's schedule, as well as work from home or from another location of the worker's choice. Crowdwork can provide a high level of flexibility for workers in terms of the selection of tasks, how much one works, the place of work and the organization of one's work. Crowdwork also allows those who prefer to work from home the ability to do so, whether for health reasons, domestic responsibilities or simply a preference to be in one's own home. But as noted in the last section, sometimes work is not available when the worker plans to work. As one AMT worker stated in response to what they would change about crowdwork if they could, *"I would want to know when tasks are up so I can plan my day."*

On average, in a typical week workers spent 24.5 hours doing crowdwork, of which 18.6 hours were paid work and 6.2 hours unpaid (e.g. looking for tasks, completing qualification tests) (figure 4.9, panel A). As a result, for every hour spent on paid work, roughly one-third (20 minutes) of additional time is spent on searching for tasks. This finding was confirmed in both the 2017 and 2015 surveys, and is also documented in the study by Hara et al. (2018), which tracked AMT workers' time through a downloadable plug-in. The ratio of paid to unpaid time was highest on Clickworker (27 minutes unpaid per hour paid) and lowest on Prolific (14 minutes).

The need to constantly look for work, the idiosyncrasies of task posting, and differences in time zones meant that many workers worked long hours and atypical hours. Fifty-two per cent of respondents to the 2017 survey reported that they regularly worked at least six days per week (with 16 per cent regularly working six days and 36 per cent regularly working seven days per week).[7] A large proportion of workers worked during the night (10 p.m. to 5 a.m.; 43 per cent) and during the evening (6 p.m. to 10 p.m.; 68 per cent), either in response to task availability or because of other commitments (figure 4.9, pannel B). About 18 per cent of workers reported working over two hours in the night for more than 15 days per month. Furthermore, about 44 per cent of workers worked for more than 10 hours a day for up to one-third of the month (1–10 days), and 23 per cent of them worked such long hours for 11–30 days in a month. These patterns are consistent across regions.

Figure 4.9 Intensity of crowdwork, by gender, 2017
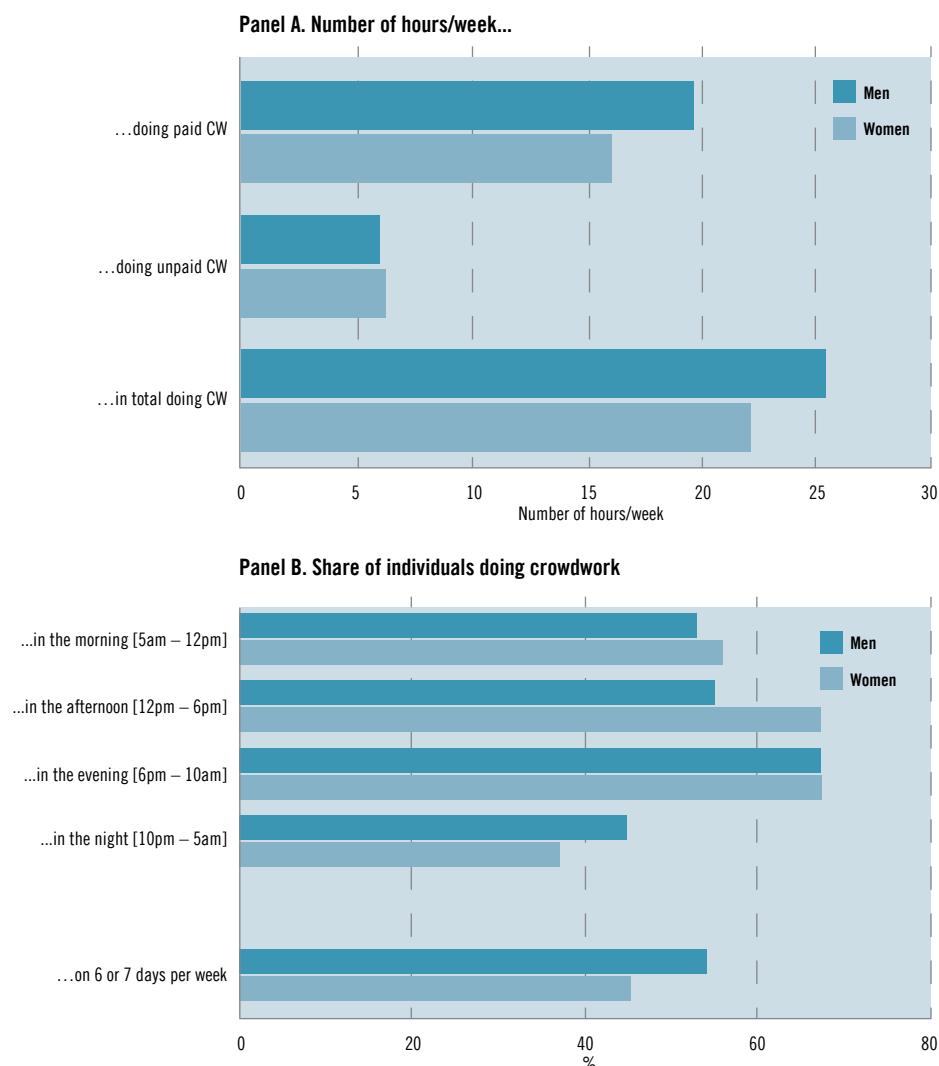
Panel A. Number of hours/week...

Panel B. Share of individuals doing crowdwork

Note: Average hours per week are computed using top coded values, with the maximum set to 125 hours.

Source: ILO survey of crowdworkers, 2017.

However, time spent on specific platforms varies, likely reflecting the availability of work. Workers on Prolific spent on average 4.5 hours per week on the platform, those on Clickworker spent 8.8 hours, and those on Microworkers spent 17.1 hours. The duration was much higher among Indian workers on AMT (27.3 hours), American workers on AMT (32.8 hours) and CrowdFlower (36.8 hours). As many workers work on several platforms, the total hours spent on crowdwork are higher than the platform-specific figures, and the differences between the platforms are somewhat less striking. One important difference between the 2015 and 2017 survey results was the increase in overall hours in 2017 relative to 2015. This may reflect a greater availability of tasks with the expansion of crowdwork. Compared with 2015, Americans spent an additional 5.3 hours on AMT, Indians spent an additional 3.6 hours on AMT, and overall hours on CrowdFlower increased by 12.5 hours.

One of the benefits of crowdwork is that it allows workers to work from home and thus provides opportunities to workers who would otherwise not have access to paid work. This is particularly true of women, who, throughout the world, overwhelmingly shoulder the burden of care responsibilities (ILO, 2018). About 21 per cent of the female workers in the sample in 2017 have small children (0 to 5 years), ranging from 15 per cent in Northern America to 42 per cent in Latin America and the Caribbean. Women with small children noted in the qualitative responses as well as in follow-up interviews that they preferred crowdwork as it allowed them to engage in some form of work and earn some income and at the same time take care of children or elderly relatives and perform housework.

In addition, the high cost of child care often prevents parents from taking up a job outside home, especially in the United States, where the public provision of child care is more limited than in other industrialized countries (Anxo et al., 2011):

> *I have three children and don't have the means for a babysitter.*
> (Respondent on Microworkers, United States)

> *I am the primary caregiver for our children. My wages outside the home would only cover the cost of childcare so this is my best option for the time being.*
> (Respondent on Prolific, United States)

> *Both of my kids are currently not old enough to be in school and I could not find a job that would be worth it covering their day care costs.*
> (Respondent on Microworkers, United States)

> *My kids come first and frankly it would cost me more to go to a job everyday.*
> (Respondent on AMT, United States)

Gender roles and the expectation that, even among the well-educated, women should take care of children and housework, play an important role in women's decision to stay at home and their motivation to crowdwork:

> *I can only work from home because my husband is away the whole day at work and I have to take care of my children and home.* (Respondent on CrowdFlower, Italy)

> *I am a house wife and lot of work to be done inside home like cooking, maintaining children. During leisure time I want to do some work with earnings. So I preferred crowd source which has no investment…* (Respondent on AMT, India)

In one interview, an Indian woman with two small children (aged 1 and 3 years) reported that she stopped working when she had children. Her family had the perception that a mother should look after the children, and there was a general perception in her circle of friends (other stay-at-home mothers) that a married woman "can't leave kids at home" and that "nobody can take the mother's place".

For such women, crowdwork seems to be an avenue to undertake paid tasks within the confines of home while managing other responsibilities, resulting in a double burden in their workload. Women with young children spend on average about 19.7 hours working on plat-

forms in a week (figure 4.10, panel A), just five hours fewer than the average for the 2017 sample as a whole. Many of these women (36 per cent) work at night (10 p.m. to 5 a.m.) and during the evening (6 p.m. to 10 p.m.; 65 per cent), and 14 per cent of them work for more than two hours in the night for more than 15 days in a month (figure 4.10, panel B).

Figure 4.10 **Intensity of crowdwork for respondents with small children (0–5 years), by gender, 2017**
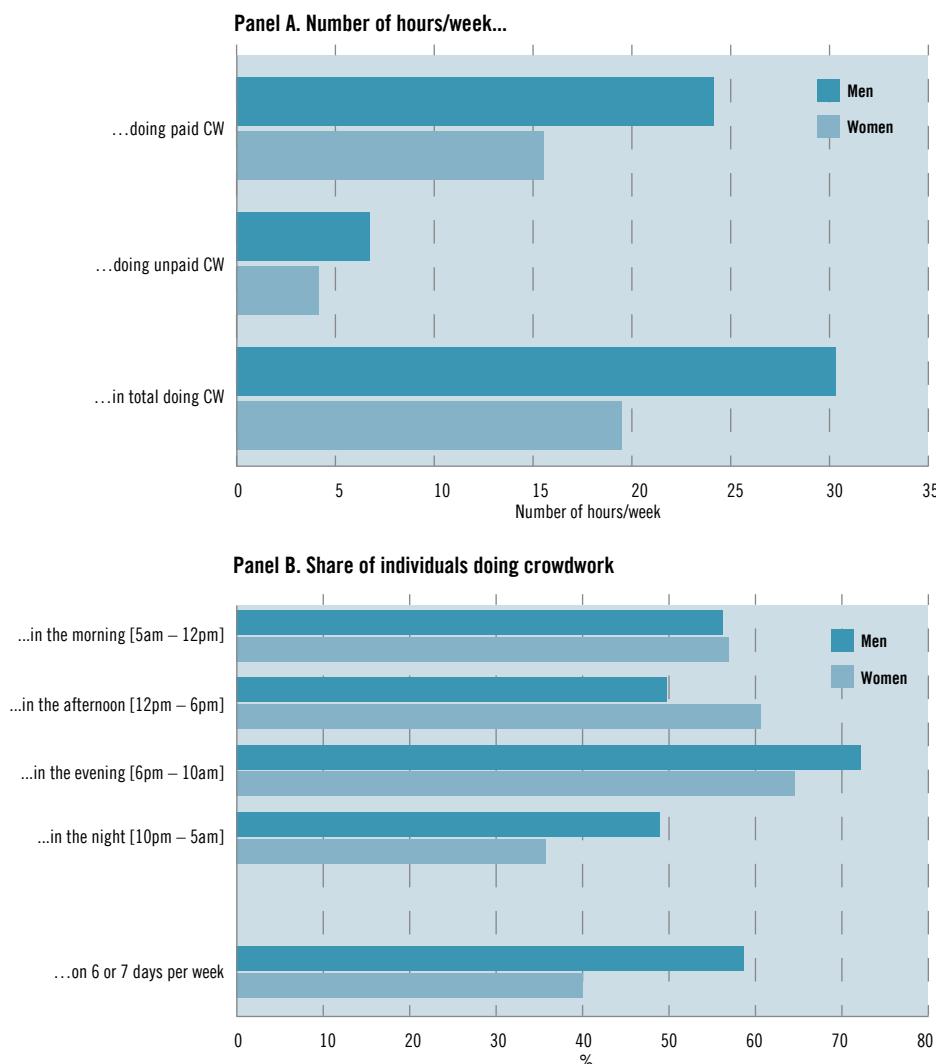
Panel A. Number of hours/week...

Panel B. Share of individuals doing crowdwork

Note: Average hours per week are computed using top coded values, with the maximum set to 125 hours.

Source: ILO survey of crowdworkers, 2017.

The global outsourcing of work through platforms has led to the development of a 24-hour economy. This process has stretched the number of consecutive hours of work both paid and unpaid – often eroding the fixed boundaries between home and work. While it allows more women to earn some income, it puts an additional burden on them, given their disproportionate workload of care responsibilities and household work (ILO, 2016a).

NOTES

1   "Depending on qualifications, speed, practice and concentration you can earn well over $10.00 per hour. On average, we expect that a Clickworker earns $9.00 per hour" (https://www.clickworker.com/clickworker-job/ [18 January 2018]).

2   See http://faircrowd.work/platform/amazon-mechanical-turk/ [10 January 2018].

3   See http://faircrowd.work/platform/clickworker/#tos and http://faircrowd.work/platform/prolific [10 January 2018].

4   See https://www.mturk.com/worker/participation-agreement, last updated 17 October 2017 [16 January 2018].

5   See https://www.prolific.ac/researchers#pricing [20 November 2017]. See also http://help.prolific.ac/general/how-is-prolific-different-from-mturk-co.

6   See http://faircrowd.work/platform/amazon-mechanical-turk/ [20 November 2017].

7   In 2015, 60 per cent regularly worked at least six days per week (with 21 per cent regularly working six days and 39 per cent regularly working seven days per week).
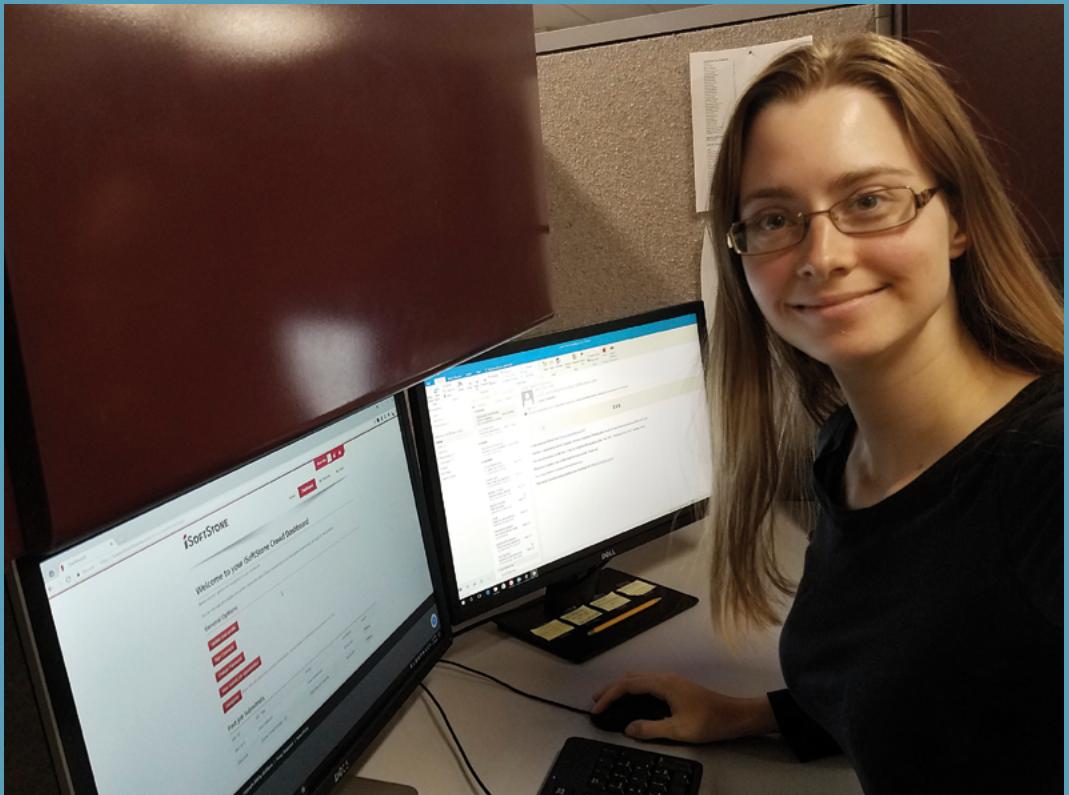
Crowdworker, United States   © Allison Hart

CHAPTER 5

What are the risks and opportunities for crowdworkers?

The earlier chapter focused on how workers fared on the platforms, with regard to payments and working time, among other working conditions. This chapter looks at the risks workers face on platforms with regard to their payments, the possibilities for recourse and how the platforms and clients treat them. What becomes evident in the findings on crowdworkers' working conditions is how critical the architecture of the microtask platforms is for workers' outcomes (Choudary, 2018) and some of the consequences of algorithmic management. The dispersion of tasks to the "crowd" who then compete for jobs and the algorithmic management of the work, as discussed in Chapter 1, are decisive in shaping workers' experience. Despite the risks, crowdwork does bring income and work opportunities to workers. The chapter discusses these opportunities in light of the type of tasks performed by the workers, their skill use and career prospects.

5.1   REJECTIONS, OPACITY AND NON-PAYMENT OF WORK

> *It's a precarious employment situation as you're entirely at the mercy of the crowd-work platform. They could disable your account overnight and there's no protection against it.* (Respondent on CrowdFlower, United Kingdom)

A major complaint by crowdworkers is that their work can be unfairly rejected, and as a consequence not remunerated. Unfair rejections can occur as a result of poorly designed tasks, unclear instructions, technical errors or dishonesty (McInnis et al., 2016). As explained in Chapter 1, a salient feature of microtask platforms is the tendency for many tasks to be overseen by an algorithm as opposed to a human, although it is a human who programmes the code and takes the decision to outsource the work to the crowd of workers on the platform. Thus, following the worker's selection of the task(s), the work is in many instances "supervised" by an algorithm that controls the work process, the workers' submissions, and the payment.

When supervision is relegated to an algorithm, instances of unfair treatment can arise. For example, when three workers perform a particular task and the result of one of the workers is different from that of the other two, the algorithm may be set up to automatically reject the work of the one response that is different, even if it is correct. Thus, hav-

ing an algorithm review the work risks rejecting work that was completed well. More troubling is that there is no mechanism through which the worker can know why the task was rejected, and contesting the decision is difficult at best.

As digital labour scholar Lilly Irani explains, the potential for redress on the microtask platforms is limited: "Amazon does not require requesters to respond and many do not; several requesters have noted that a thousand-to-one worker-to-requester ratio makes responding cost prohibitive" (2015a, p. 228). As one large-scale requester explained to Professor Irani: "You cannot spend time exchanging e-mail. The time you spent looking at the e-mail costs more than what you paid them. This has to function on autopilot as an algorithmic system … and integrated with your business processes" (personal communication, cited in ibid., p. 228).

As a result, workers often do not know why the work has been rejected, either because they do not receive an answer or because the answer is unclear. This non-responsiveness can also stem from requesters themselves not really knowing why the task was rejected, given the "black box" nature of algorithms (Pasquale, 2015). This approach is unfair for the worker; first, because the worker is often not given feedback for the rejection, and thus misses the opportunity to learn from his or her mistake and improve future performance; second, it is possible that the work is actually still useful to the requester, in which case non-payment constitutes wage theft. For workers who are denied payment unfairly there are repercussions because their ratings fall, but the reputation of the requester can also be damaged on online forums.

Rejections are not only problematic because work is not paid for, but can also affect workers' ability to obtain new tasks or even lead to their being deactivated (in essence, fired) from the platform automatically when a certain threshold of rejections is reached. For example, on AMT a standard criterion used to attribute work to Turkers is an approval rate of at least 95 per cent. According to a review on the Faircrowd forum: "It is inherently problematic that Mechanical Turk requesters do not have to give good reasons for leaving negative ratings – or rejecting the work of workers. These ratings stick with workers forever, and affect their ability to get new work." [1]

In October 2017, there was some effort on the part of Mechanical Turk to update and make changes to their terms, which now read "requesters will not reject Tasks performed by Workers without good cause".[2] While this is undoubtedly an effort to improve conditions for workers on the part of the platforms, how this clause will be implemented is quite opaque. On Microworkers, workers whose approval rate ("temporary success rate") falls below 75 per cent are prevented from performing jobs for the next 30 days. On CrowdFlower, "Individual customers/clients have the power to accept or reject any submission by a CrowdFlower worker, as well as to 'flag' the account of workers in such a way as to prevent workers from receiving future work." [3]

Almost nine out of ten workers in the ILO surveys have had work rejected or have had payment refused. Figure 5.1 shows the distribution of the share of work that is rejected by platforms for experienced workers (at least six months of crowdwork).[4] The average rejection rates are highest on Clickworker (15 per cent), CrowdFlower (14 per cent) and Microworkers (10 per cent), and lowest on AMT (1 per cent among American workers,

2 per cent among Indian workers). These differences in rejection rates mirror the platforms' rules with regard to rejection and approval rates, as laid out above. Overall, 18 per cent of the workers had more than 10 per cent of their work rejected, and another 22 per cent had between 5 and 10 per cent of their work rejected.

Figure 5.1 Share of work rejected, by platform, 2017 (percentages)
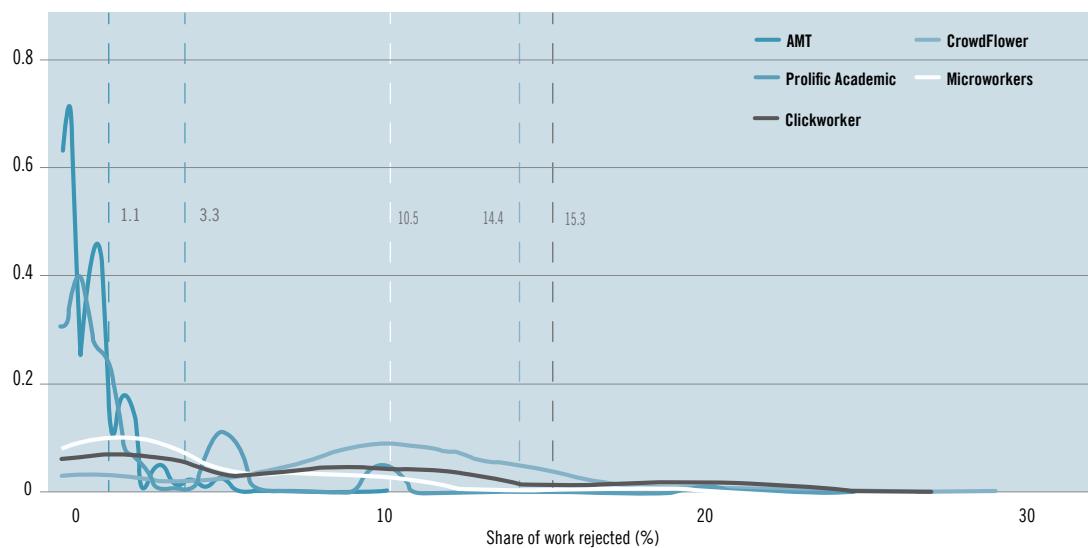
Note: Only experienced workers (at least six months of crowdwork). For ease of display, rejection rates above 30 per cent are not displayed (less than 5 per cent of the sample). Vertical dashed lines indicate mean of the platform.

Source: ILO survey of crowdworkers, 2017.

Whereas some of these rejections were justifiable, in that the worker made mistakes or did not follow the instructions properly because they either did not understand them or misinterpreted them, only 12 per cent of respondents said that all their rejections were justifiable. For 32 per cent most of their rejections were justifiable, for 50 per cent only some were justifiable, and for the remaining 6 per cent none were justifiable (figure 5.2). When work is rejected, it is not always clear if the rejection was fair or not because, as we have seen, there is no mechanism for informing the worker what was wrong. This shortcoming is emblematic of the low level of transparency in algorithmic management, and has the effect of demoralizing workers in addition to lowering their income:

> *In some tasks you got expelled but no corrections marked so you do not even know where you made a mistake*. (CrowdFlower worker, IGM Survey)

Figure 5.2 Do you feel that the rejections were justified? by platform (percentages)
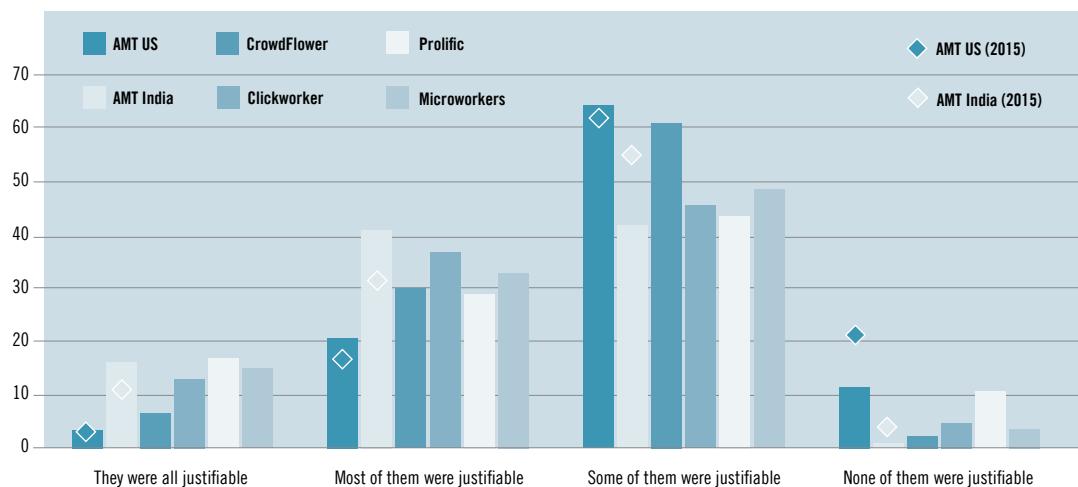
Note: Only experienced workers (at least six months of crowdwork).

Source: ILO survey of crowdworkers, 2015 (S2) and 2017.

Many survey respondents voiced their concern about unfair rejections, some even alluding to wage theft.

Some providers ask us to transcribe many details from image, sometimes up to 50 data. If we make one mistake they reject our hit. There are some work providers who provides several hits. If we make a mistake in one hit they will reject all hit. (Respondent on AMT, India)

Some requesters reject work randomly without convincing reasons may be to get work done without paying the compensation. (Respondent on AMT, India)

Workers should get the right to question about their rejected hits. Currently, it is at the sole discretion of the requester. (Respondent on AMT, India)

If a requester decides to reject your work, there is no way to contest this and have them make a fair ruling. This is completely up to the requester and you basically did their work for free if they decide to be dishonest. It hurts morale sometimes. (AMT worker, IGM Survey)

I would like to change the flagging/ banning system. Some task authors put unfair strict rules for flagging, which result in mass flags to taskers. It results in overall demoralization among the taskers. (Respondent on CrowdFlower, India)

The major problem all testers on CrowdFlower have is the power that Customers have. If one customer doesn't like your work, he has the power to give you a Flag (punishment) that remove all your badges (you can reach up to level 3 badge) and you won't work in any jobs that requires badges (level 1, 2 or 3 badges) anymore.
(CrowdFlower worker, IGM Survey)

Task authors should treat members fair e.g. correct the accuracy in case of wrong corrections, give sufficient instructions, should not give flags without telling the reason.
(Respondent on CrowdFlower, Germany)

Unfair rejection happens not only at the hands of misguided or malicious requesters, but also in the platform design. According to workers, sometimes errors in the platform features, task setup, or their own web browser also lead to work being rejected.

Prolific Academic normally pre-screens individuals for certain jobs (i.e. they must fit a certain demographic), but occasionally this screening fails and I was a couple times assigned a task I wasn't qualified to do, and did not get paid for doing it.
(Prolific worker, IGM Survey)

… automated checks to be reviewed regularly, because they become outdated and cause errors that are not due to the crowd worker.
(Respondent on Prolific, United Kingdom)

If someone completed 95 per cent of the task under the pretense that they will get paid, then unexpectedly told they are no longer suitable, they should still be compensated for the time they have put into the work.
(Respondent on Clickworker, United Kingdom)

When I am doing jobs … I think on average, one in eight or one in ten times, half-way during the job something goes wrong – you lose the connection, or the page doesn't load. And then you're not getting paid and the work is gone – you have to start again. (Clickworker, ILO interview)

Whether or not they lead to rejected work, issues with platform glitches or reliability frustrated many workers. In general, systems for earning worker qualifications were exceedingly opaque on many platforms, causing stress and frustration among workers.[5] This opacity not only applies to qualifications, but also to reasons for blocking or suspending accounts. In one of the interviews, an AMT worker stated that the biggest concerns for workers were rejections and blocks:

… and it is known – but the platform doesn't tell you – if you get a certain amount of blocks within a certain time period – we can only guess how much that is, I think the consensus is around 3 blocks in 6 months – then the platform can suspend you. And you don't even always know when you have been blocked. Sometimes you get an email, sometimes you don't… It is very concerning, it increases anxiety needlessly. You always worry 'who's blocked me?', 'could my account be suspended?'… That's something I feel like the platform could fix, and I am surprised that they leave it the way it is. Because I hate working under that threat where you never know whether you could possibly get suspended, unfairly… and that's the issue that workers need help with. (AMT worker, ILO interview)

Many workers in the survey voiced frustration with the inability to appeal unfair rejections:

When we get unfair rejections, it takes months for the support team to answer. And the payment is too low. (Respondent on CrowdFlower, Brazil)

Most corrections are not justifiable but if you fail in the quiz you can't even see the mistake you've made so you can't dispute it. It depends on task authors and these task authors are often slow to react and don't correct their mistakes. (Respondent on CrowdFlower, Morocco)

There is also a tendency on the part of workers to be docile out of fear that they will be fired from the platform or banned by specific employers if they ask for reasons even when in doubt.

Some rejections felt doubtful. So I decided to take screen shots. But after their rejection, my screen shots prove that I was doing it perfect. But I could not ask for justice more because they may ban me. (Respondent on AMT, India)

There are other reasons why workers are reluctant to appeal when their work is rejected. As jobs are broken down into microtasks that can be completed in seconds or minutes and are paid in cents, fighting for pay can easily take up more time than the microtask itself. Moreover, with platforms located in one country, clients in another and workers dispersed throughout the world, seeking redress in a local labour court is unrealistic.

Crowdwork provides little guarantees of available work and the pay per task is very often below the U.S. federal minimum wage. Workers have no protections: if there is conflict between the worker and the requester, the platform will not intervene. (Respondent on AMT, United States)

I'd make it subject to current minimum wage laws and implement an arbitration process to settle any disputes between workers and employers. (Respondent on AMT, United States)

I wish workers had some rights, and that pay/rejection was not completely in the hands of the requesters. I wish Amazon gave support and a basic arbitration to the platform. (Respondent on AMT, United States)

Give crowd workers the same rights and benefits as on site human participants. As of now, requesters (most often university researchers) can arbitrarily reject work, ignore communications, and pay participants far below what any university pays. (Respondent on Prolific, United States)

5.2 LACK OF COMMUNICATION, RESPONSIVENESS AND REPRESENTATION

> *I am really grateful for the platform, but the most frustrating thing about it is knowing that the platform doesn't really protect you when it comes down to working for requesters. There are some policies that are in place that make it really frustrating.* (AMT worker, ILO interview)

As mentioned, communication possibilities between workers, requesters and the platform management are often poor or missing. Among the platforms surveyed, workers are theoretically able to contact the platform management, although in practice it is not always easy to find the correct contact information and responses might be slow, unsatisfactory or missing. Communication between workers and requesters is more difficult. While workers on AMT and Prolific can contact the requesters on the platform, this possibility is not foreseen on Clickworker, CrowdFlower, or Microworkers. In the ILO survey, many workers cited poor communication with requesters as a flaw in the system, which affects the work:

> *So far the most difficult aspect of this work for me is the lack of real time communication with the requesters. I have had to return quite a few tasks due to unclear instructions. If I had real time communication with those requesters, I could have gotten those instructions clarified.* (Respondent on AMT, United States)

However, even where contact possibilities exist, in many instances workers feel that this is a waste of time. Indeed, the non-responsiveness on the part of the requester to explain what the problems are and how workers could improve their performance or correct their mistakes is a major frustration for workers:

> *I would make requesters to communicate with workers better. I think we are all humans and are allowed a few mistakes. Requesters who refuse to communicate need to be given a bad review…* (Respondent on AMT, Canada)

> *I have messaged some requester what was the actual problem, many of them never reply and a few replied with some text what was the actual problem. Among them they did not mention what I should do properly as a result they rejected me.* (Respondent on AMT, India)

> *I would like for requesters …to be more lenient about there being a learning curve for all types of work. When you work at a real job, you are given time to learn and make mistakes and are given feedback, but in crowd work, the first time you make a mistake (usually for a task that has vague instructions) you are rejected maybe even blocked.* (Respondent on AMT, United States)

In addition, the rating system on microtask platforms is one-directional. While workers strongly depend on their ratings, platforms lack mechanisms that allow workers to evaluate the client or requester. As mentioned in the previous section, workers have little recourse or voice when it comes to unfair rejections by malicious requesters. Another common practice among requesters is to underestimate the time needed to complete a task.

While the time taken to complete some tasks (such as survey) may vary from worker to worker, other, more standardized tasks should have a specified estimated time in order for the workers to judge whether to perform the task or not. Where this is not the case, workers might be lured into a "well-paying" task, only to realize that it takes longer than expected, lowering the hourly pay rate (see figure 5.5 for an example of incorrect time specification). Identifying problems with "quality control over requesters", some workers would like to see better instructions for requesters, or even the possibility of banning bad requester accounts just like bad worker accounts:

> *The only real thing I don't like about Mturk is that there seems to be little quality control over requesters. I've seen instances in the past where a requester has no issues and mostly positive reviews suddenly start sending out mass rejections to workers. Often times they don't understand how Mturk themselves work and use tools and features in the wrong way which can damage a worker's reputation. An example of this is when they use the block user feature to prevent someone from doing their work more than once. This block is a negative mark on a worker's record and should not be used in that way. The requester documentation is very lacking. Just last week I had to explain to a new requester how to pay me a bonus. Things like this should be made obvious.* (AMT worker, IGM Survey)

> *Some requester post s*** work and I don't know about it until I'm too deep to quit. I want these requesters booted off the platform so that I can find better work from better requesters.* (AMT worker, IGM Survey)

> *There should be some more quality control on the part of crowd work sites to eliminate faulty requester or those associated with cyber attacks. I know it is bit difficult to keep track, but what isn't possible in today's technology.*
> (Respondent on AMT, India)

There have been some suggestions in the literature to develop a system of evolutionary workflows, in which part of the crowd generates outputs and others evaluate and combine them, generating a collective process of selection and learning with spillover effects from the crowd to the organization (Nickerson, 2014). The extent to which this system would be useful for microtask needs to be investigated. In addition, researchers at Stanford University recently launched a non-profit crowdsourcing site, daemo.org (Stanford Crowd Research Collective, 2016), based on a "boomerang reputation system". Under this system, requesters and workers have an incentive to give more accurate feedback, as workflows are assigned based on participants' feedback. Thus, requesters' highly rated workers gain earliest access to their future tasks, and workers have tasks from their highly rated requesters at the top of their task feed (Gaikwad et al., 2017).

Communication problems are aggravated by the fact that the majority of crowdworkers (58 per cent) are not aware of online forums or groups where they could get advice. While for these workers there is no way of knowing whether clients are good and bad, others rely on discussions on these forums. About 28 to 60 per cent of the respondents across the different platforms have used online forums to either get advice or to follow the discussions about the problems that crowdworkers are facing in different tasks that they undertake (figure 5.3). The use of online forums is particularly high among

AMT users, who have established a number of forums dedicated to the platform (e.g. turkernation.com, mturkcrowd.com, mturkforum.com, turkerhub.com). Many AMT workers depend on Turkopticon,[6] a browser plug-in developed independently in 2008 by two computer scientist Ph.D. students, that allows workers to review requesters with respect to pay, speed of payment, fairness of evaluation and communication:

> *You have to use Turkopticon, or else you end up with too much rejected work. You work for people that might block you, and you lose your account.*
> (AMT worker, ILO interview)

While some microtask platforms such as Clickworker or CrowdFlower offer onsite (and monitored) forums, workers also communicate with each other through offsite forums and social media. These include forums such as clixsense or NeoBux, which are linked to CrowdFlower and were also frequently mentioned in the IG Metall survey, dedicated groups on Facebook and several subreddits on reddit. These forums are used to find work more efficiently and successfully, to share and find information about well-paid tasks (e.g. r/hitsworthturkingfor) and to socialize with their remote co-workers. However, these forums cannot provide protection to the workers:

> *Since the only place I can get any info or talk about this kind of work are forums, protection is absolutely 0, as these are not legal bodies that have any leverage over the crowd work platforms and employers.* (Respondent on Prolific, Serbia)

Figure 5.3 **Which of the following provide you with some protection or a place to discuss problems or consult for advice related to your crowdwork? by platform, 2017 (percentages)**
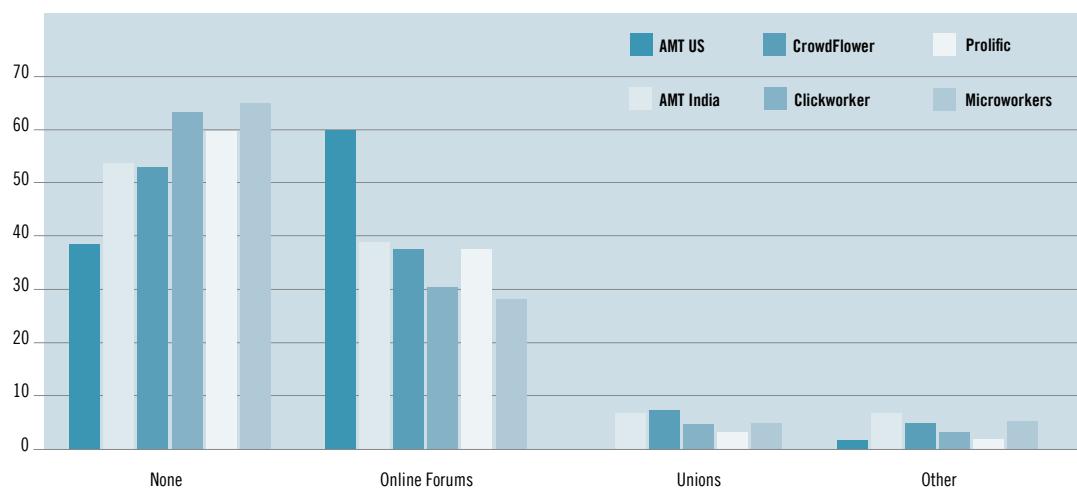
Source: ILO survey of crowdworkers, 2017.

Although some individuals mentioned that they turn to friends or family to discuss their crowdwork-related issues, others were hesitant or embarrassed when it came to discussing crowdwork with friends or family. This was also reflected in the textual answers and the personal interviews with the workers.

> *A lot of the people I work with could be considered a part of a vulnerable population. We do this work because it's our only option. People often lie about how much/how little they make because they're embarrassed to admit that they often [crowd] work.* (Respondent on AMT, United States)

While some of the workers talked about crowdwork to their friends or family, the reactions were mixed. A Serbian worker reported that her family and friends didn't understand crowdwork, and that her friends considered her to be "nuts" to do tasks that only paid 5 or 10 cents each. Others reported that they had not told their family or even their partners that they did crowdwork, as they were embarrassed about it. This was often because they considered their earnings to be too low, and that others might therefore think crowdwork was a waste of time. However, there were some workers from developing countries who reported that their family was grateful for the financial support gained from crowdwork.

A very small proportion of workers discussed crowdwork related issues with unions (5 per cent) or with other solidarity or community groups[7] (4 per cent). Some workers expressed a desire for unions to represent the workers engaged in crowdwork:

> *It's an extra income that's flexible. However it can be low paid (below minimum wage) and you have no job security. You can be fired without notice or reason, or appeal. There should be an online workers union.*
> (Respondent on Prolific, United Kingdom)

> *I think some of the efforts to organize Mechanical Turk workers in the past, such as Dynamo, Turkopticon, and the efforts of workers who get together on forums has had limited success. I'd like unionists and policy makers to expand on these types of projects and support a more widespread organization of workers. I would hope these policy makers would put workers at the forefront of these conversations and seek not only worker input but worker leadership in decision making.*[8]

5.3   CONTENT OF WORK AND SKILL MISMATCH

> *It's not the type of job that requires many skills – besides knowing English well.*
> (CrowdFlower worker, ILO interview)

The tasks on the platforms are short and frequently repetitive, and are distributed across a large pool of crowdworkers. Microtasks are also termed "cognitive piecework" (Irani, 2015b) and "human computation" (von Ahn, 2005), as they require human cognition. While it is possible that in the future some tasks might be automated, other tasks are unlikely to be, as they require human input. Although some of these tasks such as content creation and editing, transcribing a speech or translation could also qualify as "macro-

tasks" (defined as those that take more time and typically involve a higher skill set when compared with "microtasks"), these tasks have the potential of being broken down into smaller microtasks (see Cheng et al., 2015), which leads to deskilling. As mentioned earlier, the levels of education of these workers are high and there seems to be no relation between the education level and the type of task performed (table 5.1), as a sizable proportion of workers with higher levels of education seem to perform tasks like categorization and content access. The 2017 ILO survey showed that the most common tasks performed by crowdworkers include responding to surveys and experiments (65 per cent), content access (46 per cent), data collection (35 per cent) and transcription (32 per cent). In comparison, the proportion of workers undertaking content creation and editing or artificial intelligence tasks are relatively small.

There are regional patterns, which are at least partially driven by the availability of tasks on different platforms. Workers from Africa were largely performing content access and data collection on Microworkers. Latin American workers, who performed tasks largely on CrowdFlower, reported categorization and data collection as their major tasks. Asian workers, who performed tasks mainly on AMT and Microworkers, most frequently mentioned content access, data collection, survey and experiments and transcriptions. The proportion of workers from developing countries performing tasks on Clickworker and Prolific was comparatively smaller and the tasks included surveys and experiments, content access and data collection.

Table 5.1 Specific types of tasks on platforms, by education level, 2017 (percentages)

	High school diploma or less	Technical certificate	Some university education	Bachelor's degree	Post-graduate degree or higher	Total
Categorization	23.3	21.0	25.4	25.1	26.1	24.8
Content access	50.2	50.6	47.5	43.8	44.3	46.1
Content moderation	9.0	12.5	6.4	7.2	8.4	7.9
Artificial intelligence/ machine learning	6.8	8.5	8.9	8.8	7.8	8.2
Data collection	32.6	30.6	37.2	36.4	35.0	35.4
Market research/ reviews	13.3	15.7	16.5	15.2	13.2	14.7
Verification and validation	10.0	8.5	9.5	12.4	13.2	11.4
Transcription	25.6	27.4	32.7	34.4	35.3	32.4
Content creation and editing	19.1	26.4	19.9	19.8	24.9	21.0
Surveys and experiments	56.2	55.7	69.9	67.5	64.4	64.9

Source: ILO survey of crowdworkers, 2017.

Some workers enjoyed doing particular tasks such as research surveys and experiments, because they felt that their work had a positive impact:

> *It is the easiest part-time job I have ever had and it has the added bonus of helping research.* (AMT worker, IGM Survey)

> *The tests are meaningful, engaging and the results will go on to contribute to real issues.* (Prolific worker, IGM Survey)

In addition to the positive feeling of having contributed to research, some workers also liked the fact that participating in crowdwork helped them learn new things.

> *I love having the option to work on my days off. I also really appreciate most of the requesters on Mturk. I have been part of some amazing studies and start-up companies. I learn something usually every day!* (AMT worker, IGM Survey)

In particular, some workers outside English-speaking countries commented that crowdwork was particularly useful to them as a way of practising their English – a skill they saw as valuable for their own future opportunities beyond crowdwork.

> *What I like most is to make money while improving my English knowledge.* (CrowdFlower worker, IGM Survey)

> *I like very very very much to work in CF because I earn money and it helps to improve my level in English.* (CrowdFlower worker, IGM Survey)

Some workers enjoy certain kinds of repetitive crowdwork tasks because they can get into a flow and process many in sequence,[9] while for others crowdwork provides them with opportunities to do something new and different each time. For example, in the IG Metall survey, nearly half the respondents working on Prolific commented that it was an "interesting" place to work and many others found it "intriguing", "engaging" and "enjoyable". In contrast to other microtask sites, each survey on the specialized academic-research-based site is unique.

> *Because it's a nice side income and the work is relatively interesting, every task is different and I really enjoy that. It's also nice to get a glimpse of some of the research going on, and thinking about what the researchers might be attempting to investigate. It reminds me of my days as an undergraduate.*
> (Prolific worker, IGM Survey)

However, not all workers felt the same way, with some describing the work as mindless and low-end:

> *The tasks can be really repetitive and boring.*
> (Respondent on Clickworker, United States)

> *Some tasks are more interesting than others – such as reviewing websites, which is more interesting than filling out mind numbing surveys.*
> (Respondent on Prolific, United Kingdom)

> *I could make more money if I dedicated more time to crowd work but it can be so mind-numbing.* (Respondent on Microworkers, United States)

Nearly half the respondents (46 per cent) reported undertaking tasks such as content access. These tasks include creating fake user accounts on websites, clicking through pictures, or watching and liking or sharing a video, which neither require any particular expertise nor improve the workers' skills. However, workers continue to perform these tasks as it provides them with other benefits, in particular flexibility with regard to when, where, how much and on what to work:

> *It's a mind numbing form of work, with no pay guarantees or protections. But it is also a freeing type of work – you work when, if, and how much you want to. And you have a choice of what type of work you do.* (Respondent on AMT, United States)

Some tasks such as content access, market research and reviews are geared towards the promotion of websites or products and the ratings are not genuine, as crowdworkers confirmed in the interviews. The respondents reported providing reviews of holiday destinations, hotels and restaurants without having ever visited them. According to these workers, the review needs to be positive in order for them to receive payment for the task. In the ILO interview, one respondent reported having written reviews about places, such as beaches, or iOS or Android applications downloaded from the Internet, and was very open about those reviews generally being imaginary or fake:

> *… of course I have never been there … but you write as if you had been there. … I would never trust them, of course, because you write all the best about something you just tried to start, let's say some kind of application you started. You don't like it, and of course, you dislike it because there are billions of ads jumping and getting on your nerves, but you write [something] nice in the end, because you are going to get paid for that. Of course you're not going to write 'stay away from this because this is – sorry – s***' or 'don't download this'.* (Microworkers worker, ILO interview)

Several workers also mentioned undertaking content access wherein they had to go and watch a YouTube video or be on a particular site for a designated number of minutes. Besides contributing to false advertising, content access has also been used for political campaigns and pushing a specific political agenda, which can have negative societal consequences. Computer scientists have categorized these sorts of fake activities as "malicious" (Choi, Lee and Webb, 2016) or "web service abuse" (Motoyama et al., 2011).

In addition, some of the tasks performed by the workers include content screening or content moderation, with the purpose of removing objectionable material from the web (see box 5.1). Although it is often perceived that algorithms and new technologies remove questionable user-generated content (UGC) automatically, in reality algorithms are only used to screen and flag suspicious material. They are not elaborate enough to take a final decision about whether to remove content or leave it online – a deci-

sion requiring human value judgment. Such tasks are carried out by "invisible labour" – the human labour behind technology (Cherry, 2016b), whose invisibility in microtasking "is not a bug but a feature" (Schmidt, 2017, p. 15). Many companies employ a two-tiered moderation system, where basic moderation is outsourced (e.g. to specialized companies, often located in the Philippines or India, or on microtask platforms such as AMT), with only a small fraction of content moderators directly employed by the large tech firms (Chen, 2014; Roberts, 2016), despite the significant psychological impacts on workers from performing content moderation tasks (Roberts, 2014).

Box 5.1 Content moderation: The dirty work of social media

Many websites, in particular social media sites such as Facebook or YouTube, allow for or are entirely based on user-generated content (UGC). The amount of content uploaded to these sites has been increasing almost exponentially over the past decade and has reached enormous volumes: every minute, almost 50,000 photos are uploaded to Instagram, over 350,000 tweets sent via Twitter, and about 400 hours' worth of video uploaded to YouTube.[1]

The average user gets presented with a relatively clean image of the Internet, and the common perception is that some computer or algorithm removes objectionable content. However, in reality the removal of objectionable material from the Internet, the "dirty work of social media" (Roberts, 2016), is assisted by a vast pool of human labourers behind the computer, the "invisible labour" (Cherry, 2016b). Content moderators screen UGC, either before it gets posted (active moderation) or after being posted, when a user of the site has flagged it as objectionable (reactive moderation). Most moderators deal with content that has been flagged as inappropriate, given the sheer volume of content uploaded on UGC-reliant platforms. In addition, the UGC-reliant platforms rely on their user community to flag objectionable material without incurring any cost.

Most of these content moderators are well-educated, though they spend their days looking at content "rife with racist, homophobic, or misogynist imagery, language, or violence" (Roberts, 2016). The moderators are given only a few seconds to judge whether the content violates moral or ethical codes of the platform. These codes may not necessarily coincide with those of the moderators who are located in a different part of the world. This also implies that their judgments may need to vary from their own moral codes and personal and cultural values. A former moderator for Facebook described the work as follows: "Think like that there is a sewer channel and all of the mess/dirt/waste/s*** of the world flow towards you and you have to clean it" (quoted in Chen, 2017). Another moderator described that "as many as 8,000 posts a day, rife with hate speech, videos of possible sexual exploitation, and violence" had to be vetted (Glaser, 2018).

The difficulty of this work is compounded by the working conditions of the workers who are typically hired as contractors rather than as regular full-time employees and do not receive training or psychological support for the work they are carrying out. This is problematic given that constant exposure to violent content can place a long-term psychological toll on individuals, often resulting in symptoms that resemble those of post-traumatic stress disorder (PTSD), such as insomnia, nightmares, anxiety or hallucinations. The seriousness of the problem has not received sufficient attention by many technology companies.

Box 5.1. continued

It is estimated that there are more than 150,000 content moderators working today (AlJazeera, 2017). In May 2017, following some scandals related to live-streamed footage of murder, suicide and rape, Facebook announced 3,000 new jobs, in addition to the existing 4,500 people around the world working in its "community operations team" (Solon, 2017). Similarly, YouTube announced that it was increasing its staff of content reviewers and specialists relating to content moderation to 10,000 in 2018. According to YouTube, these specialists include engineers building and refining the machine-learning technology, and policy specialists training their machine-learning algorithms (Perez, 2017).

Even though artificial intelligence and algorithms have helped to streamline the process of moderation, human judgment is still indispensable. For instance, according to YouTube (2018) about 81 per cent of the overall 8.3 million videos removed between October to December 2017 were flagged by machines rather than humans. What is concealed is that once the videos are flagged by the machine, a human behind a screen has to verify this decision in order for the harmful content to be removed. The secrecy about the human involvement in content moderation is common, and workers are often made to sign non-disclosure agreements preventing them from discussing the content of their work with outsiders.

There has been increasing pressure over the past months from users, civil society and industry groups on platforms to bring about more transparency and regulations. YouTube (2018) claims that it "continues to invest in the network of over 150 academics, government partners, and NGOs who bring valuable expertise to our enforcement systems…" It has also recently published a report on the enforcement of community guidelines, which showed that of the automated flagged removals, about 76 per cent of the objectionable videos are removed without any views. However, it is not clear what guidelines are provided to content moderators, what their conditions of work are and how these conditions actually shape their outcomes. There have also been efforts to encourage companies to disclose their terms of service enforcement; the extent to which the companies communicate clearly about what kind of content is permitted or not on their platforms; and how the rules are enforced and by whom (Maréchal, 2017).

Amidst these pressures, a two-day conference on "All Things in Moderation", organized by Sarah Roberts at the University of California, Los Angeles in December 2017, put forth some guiding principles for the future of content moderation. This was an important first step as it could potentially guide intervention by different actors, including regulators and civil society. These high-level principles were: (i) "due process", which should be available to all users at all times, regardless of how or whether they have violated community standards; (ii) "transparency" of the content that is operated, the process and the broader content moderation system, which can be an important step towards accountability; (iii) "custodianship", as to whether companies or platforms can assume the role of custodians or whether there is a need to develop tools or resources for the public at large to address these issues; and (iv) the adoption of a "human rights" framework, which could give more legitimacy to social spaces, as it would oblige businesses to respect the rights of the people they affect, and set multiple responsibilities for state and non-state actors.

1 These numbers relate to November/December 2017. Sources: http://www.internetlivestats.com/ and https://expandedramblings.com/index.php/youtube-statistics/.

5.4 IS THIS THE BEST USE OF DEVELOPING COUNTRIES' SKILLED LABOUR?

Crowdwork is heralded for its positive effects on the labour markets of developing countries, as it creates new income and employment opportunities in regions where local economies are stagnant (Nickerson, 2014; Roy, Balamurugan and Gujar, 2013; Narula et al., 2011). Some consider it to be a "silver bullet" for development and for fighting poverty (Schriner and Oerther, 2014). In their experiment in rural Kenya, Schriner and Oerther document how workers engaged in crowdwork were able to utilize their incomes to set up small businesses and invest in education, further enhancing their potential future earnings. New York University business professor Arun Sundararajan argues that because platforms intermediate all kinds of tasks, they create opportunities for non-specialists to access the labour market (Sundararajan, 2016). As these tasks entail computer literacy or using electronic gadgets, it is assumed that they are of higher societal value when compared with traditional activities in developing countries. As a result, there is an underlying notion that crowdwork can provide gainful employment opportunities for low-skilled developing country workers who are unemployed, underemployed or in the informal sector.

In reality, however, the majority of workers engaged in microtask crowdwork in developing countries are neither uneducated nor unemployed. As mentioned in Chapter 3, a large proportion are highly educated, with a Bachelor's or post-graduate degree. When one further disaggregates this high level of education into different disciplines, the education profiles are indeed impressive: about 57 per cent of the workers are specialized in science and technology (12 per cent in medicine and natural sciences, 23 per cent in engineering and 22 per cent in information technology and computers). In addition, another 26 per cent are specialized in economics, finance and accounting and the remaining 17 per cent have been educated in arts and other social sciences (figure 5.4). Most of these workers have been educated in urban centres and in institutions with high average costs of education, especially in science and technology. Furthermore, attaining higher education can be quite expensive in developing countries and households often do not have resources to invest, or do so at a huge financial sacrifice. What's more, to promote higher education, the State often subsidizes it or provides scholarships to students so that they can pursue advanced studies.

Figure 5.4 **Distribution of highly educated workers by discipline, developing countries, 2017 (percentages)**
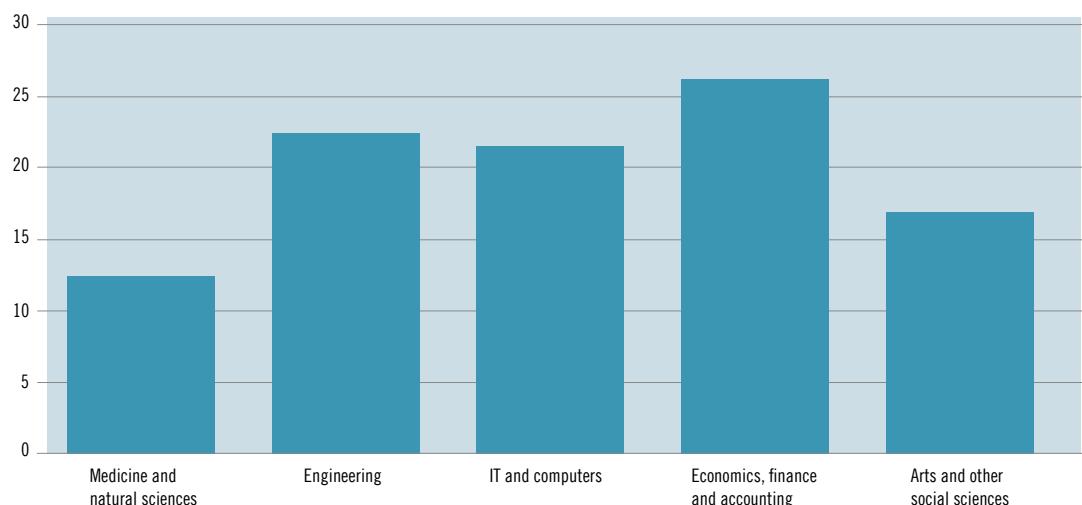
Note: Highly educated includes those with Bachelor's degree and post-graduate degree or higher education.

Source: ILO survey of crowdworkers, 2017.

Public investment in the education of individuals is made with the purpose of translating this knowledge into activities that are useful and valuable for the country's economy and its society. In particular, the hope is that these individuals can become catalysts for productive transformation of the economy, by creating new technologies and inventing new products or innovations (including in robotics) that advance societies. Further, within the development context, higher education leads to not only high-quality employment in terms of income and work protection but also to improving the content of work, as most workers would use their skills in their jobs were they to be employed in a traditional, offline job in the occupation for which they were trained.

While there is a potential for online platforms to expand and unlock a number of work opportunities, the question remains: "Is this a desirable path for the next generation?" (Kittur et al., 2013, p. 2); and is it a desirable path for the present? The risk is that crowdwork, particularly microtask work, has the potential of deskilling work and also displacing or replacing some forms of skilled labour with unskilled labour, as jobs tend to be broken down into smaller tasks (ibid.). Moreover, for developing countries (but true as well for industrialized countries), the public investments in education, particularly in science, technology, engineering and mathematics (STEM) undertaken to promote innovations and country-specific leadership in IT, risk being wasted or under-utilized. Indeed, there appears to be a disconnect between the educational policies that train a select group of highly educated workers in developing countries and an industrial policy that can leverage the skills of the newly trained graduates. As mentioned, many of these highly educated workers spend time writing reviews for products, places or companies

they have never seen and which serve to promote a business not likely to be located in their home country, rather than applying their skills to the needs of their countries' public and private industries.

Many microtasks are simple and repetitive, and some are ethically questionable, as we have seen – for example, tasks that involve providing fake reviews. Figure 5.5 is an example of two tasks posted on one of the platforms. The task in panel A requires workers with an eligible Instagram account to visit a photograph through a link provided, like it and leave a positive comment, and also paste one of several hashtags provided for that particular task. The photograph is of a mug that was for sale online on the occasion of Father's Day, and the idea was to promote it. Panel B shows a task involving content access, which was frequent among the survey respondents, and entails visiting particular websites (search, click and engage). The worker has the task of going to the website, opening the page and staying on one of the six listed categories for a minute and then continuing the same process across different pages on that website. This task helps boost the visibility of the website and the online presence of the business in search engines. Though the task summary mentions that the task takes less than 3 minutes, in reality, following the instructions, it would take at least 5 minutes to finish the task, not taking into consideration searching for the task and providing proof that the task was completed. In addition, as discussed in the previous section, many developing countries are also becoming hubs for undertaking content moderation, wherein university graduates are screening content and objectionable material and images, and in essence, cleaning the trash of the global North. Many of these tasks described are mind-numbing, as the worker does not need to think about what to do, but rather needs to simply follow a set of instructions laid down blindly, as was also mentioned by the respondents in their textual responses.

Figure 5.5 **Example of tasks posted on a microtask platform**

Panel A. Task for workers with Instagram account   **Panel B. Task on Microworkers**

Source: Screenshots of a task on Instagram, https://www.instagram.com/ [June 2017], and re-creation of an actual task on Microworkers, which was posted in October 2017.

Some respondents to the ILO survey expressed their dismay at being unable to find tasks on platforms that use their specialized skills. Many also found it difficult to transfer their offline skills to the digital work trajectory, and worried about their limited prospects for career advancement. In the ILO interview, a Clickworker expressed his frustration with regard to the quality of jobs:

> In the beginning, I had hoped that I would also get some higher quality type of work, which could be translating documents, things like that. But that doesn't happen very often. It is usually very simple, basic work. It is not really what I expected in the beginning.

He had been hoping to use his skills and training as an economist and his language proficiency to carry out tasks related to his work, "but counting bottles of shampoo on a shelf is not linked to anything [in my normal day job], of course". There were also concerns expressed by workers about the extent to which the work experience on microtask platforms would help them towards their future employment prospects:

> I have severe health issues in the past that prevented me from functioning in a normal work environment. Now that I'm almost recovered it is difficult to find a job without experience. No one considers working from home as legitimate work experience. (Respondent on AMT, India)

> Crowdwork kept me from being homeless, or at least from having to move back in with my parents, but it's also a curse, since being out of the regular workforce for this long makes it difficult to find a decent job.
> (Respondent on Prolific, United States)

In fact, as mentioned earlier, workers were often reluctant to inform their immediate family members and friends about the microtasks they performed on the platforms, as it is not perceived as serious work. This perception also creates a sense of insecurity among some of the workers about how such work should be reflected in their resumés, as they fear that it might not be valued as work. The following discussion on a social network group for AMT brings out this issue:

I'm thinking about applying for some part time jobs. Would anyone be willing to share what they put on their resumes for mturk? (AMT worker #1)

The responses to the question were:

- *Information on data processing* (AMT worker #2)

- *Independent contractor* (AMT worker #3)

- *Freelance contributor* (AMT worker #4)

- *I put something like … Perform a wide variety of cloud-based tasks including writing, transcription, and data entry* (AMT worker #5)

These responses indicate the insecurities that workers have with regard to how this kind of work is viewed by others, as well as their concerns over the lack of opportunities for learning or acquisition of skills (Drahokoupil and Piasna, 2017). Apart from providing some immediate financial benefits, crowdwork offers few opportunities towards career advancement and economic mobility.

The argument of the potential benefits of digital work in the labour markets in developing countries is also largely based on the relative level of bargaining power in terms of "skill arbitrage" and "labour arbitrage" (Graham, Hjorth and Lehdonvirta, 2017). It is considered as a win-win situation for the worker and the employer, and an efficient way of doing business, as firms can gain access to a diverse pool of labour at low cost. A number of tasks that these workers perform actually relate to providing value to the companies in terms of profits or in improving the corporate service through better ratings and more visibility (Ekbia and Nardi, 2017), as observed earlier, which do not require any specific skills. The concern, then, is whether the organization's goal of achieving optimal cognitive efficiency that effectively deskill workers through microtasks may have ramifications for the educational institutions in these countries, as schools may feel they no longer need to teach cognitive skills – which could have consequences for the economy and thereby for society as a whole.

There are also questions about how these tasks performed on microtask platforms add value to society. Most tasks offered on platforms, though they promote companies and improve their profits, do not lead to the creation of a product or an intermediary process that would in turn lead to the creation of new or additional jobs in the society (multiplier effect). Many governments and policy-makers in developing countries have embraced crowdwork as a potential source of good jobs (Graham, Hjorth and Lehdonvirta, 2017; Kuek et al., 2015; Schriner and Oerther, 2014) and have started to invest in digital infrastructure and programmes to train workers to perform work on platforms such as Clickworker and Upwork, among others. There is also a lot of support for setting up private training institutes which train workers in a number of microtasks such as content access, search engine optimization (SEO), content creation and editing, etc., in major cities in developing countries. While training workers to perform high-end tasks on macro or software development platforms (coding and programming) might be beneficial for them, training workers in microtasks is probably not the most efficient way to utilize the educated workforce.

While one needs to embrace innovation and technology, there should be a broader public debate about what education and industrial policies are required to support economic and social development. The role of government is very important in this debate and it must put the "interest of society before the interest of individual entrepreneurs" or enterprises (Schmidt, 2017, p. 23). In developing countries, where resources are scarce, a considerable amount of public resources is invested in STEM education to support advancement in science and technology. From a development point of view, the question arises about how to utilize the resulting highly educated and skilled workforce in a productive way that contributes towards economic development. In the past, a number of developing countries have brought about productive transformation in their economies by identifying sectors that have growth potential, have invested their scarce resources

in developing those skills and knowledge, and have reaped benefits from this strategy.[10] In the present context, this would require not only looking at the sectors but also at the geographical locations and networks of companies that can utilize these highly qualified workers to bring about a transformation in the economy and contribute towards society. There is a large potential for technology to be exploited in ingenious ways to solve many pressing problems, such as, for example, climate change. Greater consideration should be given to how STEM skills could be used more effectively in these areas.

NOTES

1   See http://faircrowd.work/platform/amazon-mechanical-turk/ [5 January 2018].

2   See https://www.mturkcom/worker/participation-agreement.

3   See http://faircrowd.work/platform/crowdflower/ [5 January 2018].

4   Workers with little experience often report higher rejection rates. This could be interpreted either as an indication that there is a learning curve and potential initial uncertainty with regard to expectations from the worker, or that only the most successful workers keep on working on the platforms.

5   See also this reddit thread with significant commentary and speculation about the Mechanical Turk "Master Qualification", which, to workers, appears arbitrarily assigned: https://www.reddit.com/r/mturk/comments/36ic4h/master_qualification/.

6   See https://turkopticon.ucsd.edu/.

7   These groups were largely friends, relatives and local communities.

8   See http://faircrowd.work/2017/04/30/worker-profile-rochelle/ [19 January 2018].

9   See, for example, http://faircrowd.work/2017/04/30/worker-profile-rochelle/ [19 January 2018].

10   For example, Brazil, Costa Rica, India and Republic of Korea (Amsden, 1989; Rodrik, 2004; Cimoli, Dosi and Stiglitz, 2009; Salazar-Xirinachs, Nübler and Kozul-Wright, 2014).

Crowdworker, Colombia

CHAPTER 6

Towards decent work in the online world

Online microtask platforms first appeared in the early 2000s and the industry is still young. Though it is difficult to know how many people work on microtask platforms, the growth in the number of platforms and workers over the past decade, and the possibility of posting many offline tasks on online platforms, suggests that crowdwork is likely to continue to expand. As the work can be conducted anywhere, so long as there is a reliable Internet connection, crowdworkers are a borderless, global labour force.

Currently there is no government regulation of crowdwork platforms; rather it is the platforms themselves that set working conditions. Platforms decide "how often and in what context participants are exposed to each other, what information is collected by parties, and how this information is displayed. Platforms also set policies about what trades are permissible, how entry is gained, what contracts and prices are allowed, and so on" (Agrawal et al., 2013, p. 19). Rather than unregulated, it is more accurate to describe crowdworking platforms as "platform-regulated". This situation is problematic since even the best-intentioned platform must place its business needs first, or risk losing market share to its competitors.

Crowdwork offers new opportunities for workers to earn income, but the lack of labour standards governing the platforms means that work can be unreliable, making it difficult for workers to plan their day. Moreover, the work is often poorly paid. There are few opportunities for workers to communicate with clients or platforms, either about the work that they are carrying out or about their working conditions, resulting in unfair treatment in some circumstances and also low worker morale. Redress is at the discretion of the platform and is generally unavailable to workers. Terms of service are imposed unilaterally and workers' only choice is to accept them or seek work elsewhere.

To date, efforts to improve working conditions on microtask platforms have been spearheaded by workers or worker advocates. In addition to the many worker-run online forums, which serve as a site for workers to discuss how to work most effectively on crowdwork platforms, including evaluating requesters and tasks, there have also been several initiatives to encourage platforms and clients to abide by minimum standards. These include Turkopticon, which allows workers to rate clients who post tasks

on AMT; the Dynamo Guidelines for Academic Requesters on AMT; FairCrowdWork.org, initiated by IG Metall, the Austrian Chamber of Labour (Arbeiterkammer) and the Swedish white-collar union, Unionen; and the Crowdsourcing Code of Conduct, a voluntary pledge initiated by German crowdsourcing platforms. The signatory platforms have also established, in cooperation with IG Metall, an "Ombuds office" through which workers can report disputes with platform operators. The Ombuds office seeks to resolve disputes via consensus.

These initiatives are detailed in the next section. The following section discusses lessons learned from these four initiatives and documents an emerging strategy for improving platform pay and working conditions by recruiting clients to commit to minimum standards of pay and conduct. The chapter concludes with 18 policy recommendations for fair crowdwork and three additional recommendations for improving social protection coverage for crowdworkers.

6.1   IMPROVING MICROTASK PLATFORMS: SOME INITIATIVES

6.1.1   Turkopticon

Turkopticon is a third-party website and browser plug-in used by AMT workers to review clients (requesters) and tasks. It was launched in 2009. As of April 2018, workers had posted over 430,000 reviews of over 60,000 requesters to the Turkopticon website. Workers review requesters and tasks according to various criteria (see also Irani and Silberman, 2013):

- pay

- speed with which submitted work is reviewed and remunerated

- fairness with which submitted work is reviewed (if a requester "rejects" submitted work – i.e. refuses to pay for it – there should be a good reason)

- communication (i.e. if a worker needed to communicate with a requester about a task, did the requester respond promptly, respectfully and helpfully?)

In 2014, an independent experimental study of Turkopticon revealed that reputation information about requesters has value both for workers and for "good" requesters (Benson, Sojourner and Umyarov, 2015). Reputation information enables workers to avoid requesters who frequently refuse payment unfairly. As information about requesters' good behaviour accumulates, their reputations attract workers to their tasks. Thus, good requesters' tasks get completed faster, and often by more experienced workers who produce higher quality work.

As a general matter, therefore, client or "employer" reputation systems can benefit well-intentioned parties on both sides of a labour market, even if the formal contracts governing their relationships afford more power to employers. Turkopticon specifically, however, is a volunteer-operated system with no revenue, and as a result has struggled to sustainably address issues such as onsite harassment and deceptive reviews (e.g. when a requester reviews itself, or when a worker upset about poor treatment creates multiple

accounts to post multiple negative reviews; see Silberman and Irani, 2016). Thus the full potential benefit of requester reputation information remains as yet unrealized on Mechanical Turk.

6.1.2 The Dynamo Guidelines for academic requesters on Amazon Mechanical Turk

In 2014, a group of experienced crowdworkers and human-computer interaction researchers worked together to develop a set of guidelines for academic requesters on Mechanical Turk. The role of the researchers was mainly to support the workers in discussing their experiences and developing guidelines. Importantly, because there were different worker sub-communities with varying opinions, the researchers created an independent discussion forum where experienced workers could deliberate anonymously, without inter-community "drama" (Salehi et al., 2015). The Dynamo Guidelines[1] include "basics of how to be a good requester" and a discussion of ethical pay for academic research.

The "basics of how to be a good requester"[2] section is noteworthy in that it signals widespread understanding among experienced crowdworkers that crowdwork platforms are in general not easy or intuitive for requesters to use. Documentation, especially for "advanced" features, may be missing, hard to find, unclear or outdated. As a result, even highly qualified, well-meaning requesters (for example, university researchers who wish to pay and treat workers fairly) may unintentionally underpay or otherwise mistreat workers (see Silberman et al., 2018: "When clients [i.e. requesters] do not understand that crowdsourcing work, including research, involves interacting through a complex, error-prone system with human workers with diverse needs, expectations, and skills, they may unintentionally underpay or mistreat workers."). The "basics of how to be a good requester" section of the Dynamo Guidelines thus explains proper (and improper) usages of various platform features that may otherwise be unclear.

The "fair payment" section notes that many crowdworkers "depend on income from crowdsourcing as a supplementary or primary income". In the view of the Guidelines' authors, therefore, "crowdsourcing workers are a labor force" and US researchers recruiting crowdworkers to do their tasks should pay at least the US minimum wage. This contrasts with the common practices of offering "token" pay (as is common for offline research participants who are less likely to view their participation in research as labour by which they earn a primary or important supplementary income) or a wage of US$2–3 per hour.

Between 2014 and 2018, over 75 requesters signed the Dynamo Guidelines, indicating an intention to comply with them in managing their tasks. Most signatories are researchers at prestigious universities in the United States, Europe and Asia. Workers report occasionally seeing tasks posted in which requesters indicate that they have signed the Dynamo Guidelines and intend to follow them. However, like Turkopticon, volunteers host the Dynamo Guidelines. There is no formal enforcement or dispute resolution mechanism. When compared to the size of the market, relatively few requesters have signed the Guidelines. The operators of the Guidelines considered creating a software tool that would let workers quickly filter tasks according to whether or not the requesters

who posted them have signed the Guidelines; however, this has not yet been implemented (Salehi, personal communication, 2018). As a result, requesters who have signed do not, to our knowledge, enjoy the same material benefits as requesters with good Turkopticon reputations.

6.1.3   FairCrowdWork.org

FairCrowdWork.org, launched in 2015 by IG Metall and operated in cooperation with the Austrian Chamber of Labour (Arbeiterkammer) and the Swedish white-collar union Unionen, is a website that provides information about crowdwork platforms from a trade union perspective. In addition to information about crowdworkers' rights and legal obligations and about trade union resources for crowdworkers, it offers detailed work process descriptions and ratings of various well-known crowdwork platforms. These "platform profiles" include information about tasks, work processes, clients, number of workers, and the platform operating company (e.g. number of employees, location, management) collected via "desk research" as well as numerical ratings (displayed as "star ratings") of pay, communication, work evaluation, tasks and technology. The ratings are based on detailed (up to 95 questions) surveys of workers, collected through the platforms themselves. The survey asks workers about their tenure on the platform, their earnings, their experiences with clients and platform operators (including, for example, evaluation of submitted work and communication), and their experiences with the platform technology itself. Answers to the questions are automatically converted into the ratings according to a process that is documented on the site.[3] The platform profiles also include simple ratings of each platform's terms of service based on five criteria. An attempt to develop more sophisticated criteria for evaluating platform terms of service is tentatively planned (Harmon and Silberman, 2018).

The process by which ratings on FairCrowdWork.org are calculated is an evolution of an earlier model (2015–17), based on Turkopticon, where any site user could rate the platforms and instead of answering a survey, would enter star ratings for the various criteria directly. However, two challenges emerged with this model (see Silberman and Irani, 2016). First, anyone with an email address could create an account. As a result, motivated platform operators could direct their workers to leave positive ratings on the site – just as motivated requesters can direct workers to leave positive Turkopticon reviews. The realization that this created a threat to the credibility of the ratings led to the development of the current data collection model, in which workers are recruited to participate in a survey directly through the crowdwork platforms. This reduces the likelihood that someone who is not a worker on the platform will complete the survey, or that one worker will complete the survey multiple times.

Second, because there is not yet a widely shared understanding of what counts as good working conditions in crowdwork, asking workers to provide numerical ratings can lead to confusion. One worker may describe a wage of €1.00 per hour as a "five star" wage (i.e. a wage deserving of the highest possible numerical rating), while another may assign it a lower rating. The ambiguity of numerical ratings led to the development of the current model, where workers are asked to answer concrete questions about their experiences, which are converted to numerical ratings, as mentioned before.

Like Turkopticon, FairCrowdWork.org serves as an anchor for discussions about fair working conditions on platforms for policy-makers, trade unionists, platform operators, researchers and journalists (see Harmon and Silberman, 2018 for an extended discussion).

6.1.4   The Crowdsourcing Code of Conduct and its Ombuds office

In 2015, the German software testing platform Testbirds initiated a voluntary code of conduct for paid crowdsourcing.[4] This "Crowdsourcing Code of Conduct" included principles such as "fair payment", "only serious tasks" and "open and transparent communication". Three German platforms (including Testbirds) signed the first version of the Code of Conduct, and the German Crowdsourcing Association (Deutscher Crowdsourcing Verband) joined as official supporters. In 2016, IG Metall, with permission from the platforms, conducted a survey of workers on six German platforms. Among other topics, the survey asked workers to indicate which of the Code of Conduct principles they found most important. By a large margin, survey respondents indicated that "fair payment" was the most important principle. As a result, the second version of the Code of Conduct, released late in 2016, included a refinement of the "fair payment" principle to indicate that platform operators should seek to orient payment toward "local wage standards". At this time, five further platforms signed the Code of Conduct, including one based in the United Kingdom. In 2017, IG Metall, the signatory platforms, and the German Crowdsourcing Association established an "Ombuds office" to enforce the Code of Conduct and resolve disputes between workers and signatory platforms. The Ombuds office consists of a board of five people – one worker, one trade union representative, one platform employee, one Crowdsourcing Association representative, and a neutral chair – and resolves disputes by consensus, with IG Metall handling the administration. As of April 2018, the Ombuds office of the Code of Conduct has resolved over a dozen cases submitted by workers via its online form.[5] Further refinement of the content of the Code of Conduct and eventual expansion to include other interested platforms is planned.

6.1.5   Engaging clients to improve pay and working conditions: An emerging strategy

The signatory platforms to the Code of Conduct have been generally positive about making procedural changes that would improve workers' experiences and safeguard workers' rights – for example, ensuring that workers receive reasons for rejection of work (i.e. non-payment) or account closure and ensuring that workers have a right to contest these decisions. However, in discussions with microtask platform operators, it seems that many platforms perceive that they have limited direct influence over wages. Microtask platforms host international – sometimes global – worker pools. And while the market for microtask platforms is certainly not "perfectly competitive", microtask platforms undeniably compete with one another for clients. As a result, a platform operator may have little bargaining power vis-à-vis a potential client even if the goal is to increase wages for workers: requesting higher wages may simply lead to the potential client going to another platform.

As a result, IG Metall is developing a new approach: to invite clients to sign a voluntary wage pledge. The development of this strategy is still in its infancy but could take a variety of forms. For example, clients could commit to paying workers at least the minimum wage in the worker's location (or a living wage, in locations where there is no minimum wage). This strategy could be appropriate for clients who process large volumes of data using microtask platforms and benefit from the cost savings of sending tasks to countries with low costs of living. For other clients, however – for example, academic researchers recruiting crowdworkers to complete surveys or participate in online experiments – it may be more appropriate to commit to paying workers at least the minimum wage in the client's location, regardless of the worker's location (see, for example, Silberman et al., 2018 for this argument). Software tools could be developed that would allow workers to search for tasks posted by clients who had signed the wage pledge. The intention would be that workers would complete these tasks preferentially, producing quicker and higher quality work for these clients – similar to the way in which Mechanical Turk requesters with good reputations on Turkopticon get their work completed more quickly. This could create a material incentive for clients to sign the pledge. Oversight and dispute resolution could be managed by a process similar to that developed within the Ombuds office of the Crowdsourcing Code of Conduct.

6.2   IMPROVING THE PLATFORM TERMS OF SERVICE

As discussed in Chapter 2, platform terms of service commonly include provisions directly affecting working conditions in four areas: worker account and profile control; work evaluation and payment; workers' privacy, safety, and well-being; and workers' legal rights. Multiple clauses in any given terms of service document often affect each area. Modifying terms of service becomes important so that they are more fair, and can be more or less favourable to workers.

6.2.1   Worker account and profile control

Account rejection. One of the first areas covered in most terms of service documents concerns the creation of the user account. It is not uncommon for this section to include language that allows platforms to reject user accounts for any reason at all, without having to notify users of the reason for rejection. In contrast to anti-discrimination employment laws, these stipulations allow for platforms to discriminate in deciding which prospective workers are allowed access to a platform.

When platform operators fail to notify users of the reason for their rejection, it can lead to frustration and wasted time for the workers. For example, prospective workers whose applications are rejected by AMT have not received clear reasons for the rejection – even when the reason was something as simple as not meeting particular eligibility criteria such as place of residence. This policy can lead to workers unnecessarily resubmitting an ineligible application more than once, causing extra work for both the worker and Amazon itself.[6] The failure to explain why applications are rejected also burdens worker communities to respond to inquiries and fuels anecdotal speculation as to why some accounts are rejected, and how one might increase chances for eligibility.[7] A more

worker-friendly terms of service document would state that platform operators will always provide workers whose applications are rejected with a clear, understandable reason for the rejection.

Account closure/deletion. Once a worker's account is initially accepted, the worker bears a new burden to maintain eligibility and account status. Yet, much like the initial account approval process, some platforms' terms state that platform operators may close or delete a user's account at any time, and for any reason.[8] In the event of a closure, the terms typically state that workers have no right to access the platform. Other concerns such as a worker's right to dispute a closure, workers' rights to their own content and work history data, or workers' rights to funds not yet disbursed from their account are not always clearly regulated.

A more worker-friendly terms of service document would include stipulations such as:

■ Workers' accounts will only be closed for violation of the platform terms of service or other contractual obligation.

■ Platform operators will provide a clear, understandable reason to workers whose accounts are closed.

■ Workers have access to a procedure for contesting account closure that includes review by a third party.

■ Workers will receive a payout for all funds in their worker account in the event of a deletion.

■ In the event of a deletion, workers will be given an opportunity to download and archive a human and machine-readable copy of their work history, and all contributed content such as forum posts, profile content, and messages sent to other platform users.

Worker-created content. Workers on online platforms contribute various kinds of content to the platform website such as profile information and forum posts. Platform terms often include stipulations as to the platform's responsibility for this information. In a worker-friendly terms of service document, the platform would commit to give prospective workers whose content (e.g. profile information, contributions to forums, etc.) is removed a clear, understandable reason for the deletion.

6.2.2 Evaluation of work and payment

While a platform's entire worker evaluation and payment system is rarely spelled out in detail in the terms of service document, there is usually some mention of an evaluation system, an outline of the fee structure, and an outline of the timelines for work evaluation and worker payment. The terms of service may also specify whether a worker has any recourse to contest non-payment or a bad evaluation, and whether clients are allowed to reject work outright.

Terms of service typically include rules covering five areas related to work evaluation and payment: fee structure, fund requests, task review and payment, work rejection and non-payment, and worker and client evaluations.

As discussed earlier in Chapter 2 on the business model, the *fee structures* of most platforms are based on percentage-based charges to clients who pay for the platform services at the time of paying for workers' completed tasks. However, terms of service also cover details about how workers may be charged a fee – for example, processing fees if the platform uses payment providers such as PayPal to pay workers. Sections of the terms covering other aspects of worker's payment requests also delineate how often workers get paid, and whether workers receive payments directly from the client or through an intermediary account on the platform. Many platforms specify that when a client pays for a task, the money be directed into the worker's account held by the platform. Then, workers must request a disbursement. These disbursements can often be made only with a certain frequency and sometimes have to be a certain minimum amount before payment can be made.

Terms of service also typically outline at least some of the details about the process for reviewing workers' submissions and transferring funds to their accounts. Sections covering *review and payment* specify a timeline for payment – which is sometimes quite lengthy. In most cases, the client has a designated period of time to review the work after submission; in the most worker-friendly terms of service documents, if the client fails to do so the evaluation defaults to acceptance. At this point, the platform usually reserves an additional amount of time before the workers' account will be credited with the funds and ready for withdrawal. Ideally, the combined time for review and payment – the total time between work submission and receipt of funds – should be no more than 14 days, although this is rare. More commonly, platforms reserve seven or more days for clients to review the work, and often another 30 days after that point for them to process payments to the workers' account.

In the case that a submission of work is not acceptable to the client, the terms also typically outline some rules for the *rejection of work* and the possibilities for *non-payment*. This is often problematic and can lead to abuses from the client's side, especially if ownership of the work is transferred to the client even if the client rejects the work, as is common on several platforms. Workers often receive little justification for rejections, and contesting rejections can be difficult, if not impossible. This leads to a clear power imbalance between workers and clients. A worker-friendly platform would include provisions stating that:

■ The platform agrees to ensure that the worker receives a clear and reasonable explanation for the rejection; and there is a procedure for workers to contest unfair rejections including escalation to a third-party reviewer.

■ Workers may attempt to redo rejected work at least once.

■ Workers have at least one day to redo rejected work.

If there are exceptions to the above three points (for example, due to tight project timelines), then there should be separate task-specific terms that are clearly labelled in the task instructions.

A related concern sometimes regulated in terms of service pertains to the ability of clients to *terminate tasks early*. Ideally, terms for clients should specify that they are required to review (and, as appropriate, pay for) all submitted work, even if a task is cancelled

before completion. For example, imagine a case where a client posts a batch of 100,000 photos on a platform asking for them to be tagged in a particular way. Some time later, workers have already begun tagging 10,000 of these photos, but the client realizes they posted the wrong set and cancels the rest of the task. In this case, the client should still be responsible for paying for the work already completed before the error was realized.

Worker and client evaluations/ratings. Worker evaluations are often tied to payment and thus specified at least to some degree within the terms documents. However, some terms documents reference cases where the platform may also use worker ratings in punitive ways. While it is acceptable for evaluations to be averaged or otherwise proportionally computed into an overall rating, it is problematic for workers when their ratings can be "reset" to zero for a single issue, such as a single late or incomplete task.[9] Moreover, negative evaluations, like rejections, should be accompanied by an explanation and reason; and the terms should specify a clear process for workers to contest negative or unfair evaluations.

By contrast, client evaluations or ratings are often missing from terms documents. Ideally, client ratings should be a part of the platform terms in a way equivalent to worker ratings. Much like a worker's history on the platform – completed tasks, acceptance rate – is typically made available to clients, client histories – payment and non-payment information – should be made available to workers when choosing what tasks to accept. Workers currently need to resort to other places to discuss the quality of clients, such as forums, or the external site Turkopticon (see section 6.1.1). Ideally, such rating features should be foreseen in the terms documents and implemented directly on the platform. This would help to reduce the existing power imbalance between clients and workers.

6.2.3 Workers' privacy, safety and well-being

Harassment and codes of conduct. Communication between users may take place in the context of interactions among workers, platform operators and platform clients in private messages or forum posts; it may also take the form of communication media created by platform users, including the content of worker profiles, client profiles and platform FAQs.

The most worker-friendly terms of service regulate communication and interaction among users at least to some degree. For example, the Code of Conduct included as part of the Terms of Use for the CrowdFlower platform stipulates six requirements for all users' behaviour, including that of workers and customers.[10] Users are required to respect others in their interactions, to use polite language, to refrain from obscene or offensive languages or images, to be honest in their interactions with others, to refrain from prejudice and discrimination on the basis of age, gender or race; and to not harass people.

Potentially psychologically harmful tasks. Many microtask platforms are used for content moderation (see box 5.1). By the nature of the work, these tasks are very likely to have offensive and potentially psychologically harmful content. Although most platforms' terms ban obscene content generally, they should include specific regulations about how exceptions to this will be handled in the case of content moderation. While some platforms require clients to label all tasks with potentially harmful or obscene con-

tent, clients are not always careful to do so properly; in addition, differences in specific labelling by different clients using the platforms can make it challenging for workers to clearly identify tasks with such content. For example, one of Mechanical Turk's four "General Policies" is:

> Can I create a HIT that may contain explicit or offensive content?
>
> If your HIT could contain explicit or offensive content, for instance, nudity, make sure to do the following:
>
> (i) Include the following phrase in your HIT title: "(WARNING: This HIT may contain adult content. Worker discretion is advised.)"
>
> (ii) Require that Workers have the Adult Content Qualification in order to work on your HIT. This qualification requires Workers to acknowledge that they are over 18 years and that they agree to work on potentially offensive content. You can set this requirement during the Design step on the Requester website or via the developer tools.
>
> (iii) Require that Workers have the Adult Content Qualification in order to preview the HIT by checking the "Required for Preview" box in the Design step on the Requester website or via the developer tools.[11]

Other platforms fail to include specifications at all, leaving the situation entirely up to workers and clients to sort out (or not sort out). A worker-friendly terms of service document would include provisions that are respectful of the psychological burden that workers may take on in the course of doing such work, and would include provisions that platform employees (not clients or workers) will review and clearly label any potentially offensive content. It would also include provisions to give workers who perform content moderation work access to counselling paid for by the client or platform.

6.2.4 Workers' legal rights

Almost all crowdwork terms of service contain clauses wherein workers attest that they are *self-employed* or "*independent contractors*".[12] This designation is particularly important, as many labour rights are tied to employment status.

Despite stipulating that workers have no employment relationship with the platform or client, many terms of service also impose *constraints on workers' autonomy* that are not compatible with self-employment. For example, CrowdFlower's terms state that workers may not use bots, scripts, AI, or "otherwise attempt to obtain rewards from CrowdFlower without completing tasks as they are described". Yet at the same time, the CrowdFlower terms also state that workers are self-employed. If truly self-employed, then workers should be able to choose to complete a task in any fashion and using whatever tools they deem appropriate (including automation, scripts and scraping). Moreover, self-employed workers should not be prohibited from subcontracting work, nor should workers be penalized for declining any tasks, as they should have the full freedom to choose when to work and what tasks to work on without penalty.

In general, most terms of service include provisions that workers transfer all *intellectual property rights* in their work product upon submission to the platform and/or receipt of payment from the client. As mentioned earlier, this might lead to situations where clients "reject" correct work, thereby refusing payment while still obtaining their desired work. A worker-friendly term would specify that workers retain the rights to their work product at least until receipt of payment.

Arbitration clauses and other limits to standard legal rights. The last issue of concern is a series of commonly included waivers of legal rights, including a waiver of one's right to a trial in favour of arbitration and a waiver of the right to file class action lawsuits. Both of these limit workers from bringing claims against platforms, even when legitimate.

6.3   WHAT CAN BE DONE? 18 CRITERIA FOR FAIRER MICROWORK

This report has drawn attention to many challenges facing workers on microtask platforms. Despite performing valuable work for many highly successful companies, their compensation is often lower than minimum wages, they must manage unpredictable income streams, and they work without the standard labour protections of an employment relationship. None of these negative outcomes for workers is inherent to the concept of crowdwork, or to microtask work in particular. On the contrary, it is possible to reconfigure the terms of microwork in order to provide for improved labour conditions for workers. This section highlights 18 criteria for fairer microwork platforms.[13]

1. **Employment: Workers should not be misclassified as self-employed if they are employees in practice.** Most platform workers are required to "agree" that they are self-employed or "independent contractors", not employees. But some platforms control when and where workers work, penalize them for declining jobs, and set non-negotiable prices and quality standards. Workers on these platforms may in practice be platform employees. Yet thus far courts have considered only a few such cases – and most have settled out of court.[14] A more proactive, robust system for auditing work practices and enforcing employment classification laws is needed.

   In many ways, this first criterion may be the most important and urgent. Recognition of employee status for workers would immediately and automatically grant workers a number of benefits and rights that are delineated in the criteria that follow.

2. **Workers should have a legally binding way to make their needs and desires heard to platform operators, through union membership, collective bargaining, and, in countries with such structures, works councils and co-determination rights.** The ILO Declaration on Fundamental Principles and Rights at Work, adopted in 1998, commits the 187 member States of the International Labour Organization, by virtue of their membership in the Organization, to respect, promote and realize principles and rights in four categories, including freedom of association and the effective recognition of the right to collective bargaining. The Declaration makes it clear that these rights are universal, and that they apply to all people in all States, regardless of the level of economic development.[15] Moreover, the entitlement to that

right should not be "based on the existence of an employment relationship, which is often non-existent", for example, in the case of self-employed workers (ILO, 2006).[16]

Regardless of their classification as employees or self-employed "independent" workers, crowdworkers should have the right of freedom of association and collective bargaining. The fact that current competition law may in some jurisdictions prohibit self-employed platform workers from organizing and negotiating collective agreements with platform operators is not an argument that platform workers should not be allowed to organize, but an argument for revising competition law.

3. **Wages: For microtask workers designated as employees, the prevailing minimum wage in the employee's location must be applied.** Microworkers designated as self-employed should be paid at least 1.5 times the minimum wage for the worker's location. Pay rates for piece work should be computed based on established standards.[17] For employed workers, rates of pay must comply with minimum wage regulations in the worker's location. Additional desirable pay benchmarks include: (1) a local living wage; and (2) the median local wage earned by workers performing similar work as employees with collective agreements. For self-employed workers, pay must be higher. These workers have additional overheads including: private ownership of equipment (e.g. Internet connection, computer, etc.), tax administration, local business registration fees, self-employment taxes, and the self-provision of benefits typically associated with employment (e.g. health insurance contributions, pensions, sick leave). They have a more tenuous work situation without any guarantee of work beyond each individual task, and therefore have to spend additional time finding (new) work on a continuous basis. For self-employed workers, thus, pay should at the very least average out to 1.5 times the local minimum wage regulations in the worker's location. Additional desirable pay benchmarks include: (1) 1.5 times a local living wage; and (2) 1.5 times the median local wage earned by workers performing similar work as employees with collective agreements.

4. **Payment and fee transparency: Workers should be paid the full amount for which clients are billed, in real currency.** All fees should be assessed transparently to clients at time of payment. The ILO Private Employment Agencies Convention, 1997 (No. 181) states, "private employment agencies shall not charge directly or indirectly, in whole or in part, any fees or costs to workers". While crowdworking platforms are not currently regulated as private employment agencies, the principle that workers should not pay fees in order to work is longstanding within the ILO.[18] In the case of online platforms, workers must not be charged any fees, and should receive the full rate of payment that clients are billed on their behalf. The platform should not take a percentage of workers' wages in a way that is non-transparent to clients. This payment should take the form of real currency; it should not be in the form of "points", gift cards or other non-government-backed "currency".

5. **Flexibility: Workers should not be penalized for declining to accept some offered tasks or declining to work at certain times.** Flexibility is often a promise of platform work, yet it rarely characterizes workers' situations in practice. If workers are self-employed, then they must be given real choice over when to work and which tasks to work on.

6. **In the event of technical problems with task or platform, workers should not pay the cost for lost time or work.** Platforms should have some sort of incident reporting process for incidents of this type, and clear criteria for deciding whether or not workers will be paid for their time when a worker claims that something like this has occurred. This does not need to mean payment for server downtime in general. However, if a worker has accepted and started a task and then loses work because of a technical error or failure that could have reasonably been foreseen and prevented by the requester/client or the platform operators, the responsible party should pay the worker for the lost time (not necessarily the total posted task reward). This criterion would cover things like broken submit buttons, failures of clients in setting up external applications (like surveys) to properly return to workers a confirmation code upon completion, and other "workflow" issues that can be relatively easily tested by requesters. Work loss due to unscheduled platform downtime could be the responsibility of the platform operators; if they are paying a third-party host (usually they will be) and if this is really a server issue it could conceivably be paid for by the host if it is a breach of the service level agreement.[19]

7. **Non-payment: Strict rules should govern non-payment (if it is allowed).** Customers who refuse to pay for work done should be required to indicate in a legally binding manner that they will not use that work, and to also explain why the work was unusable. Workers should have a right to contest non-payment; a human platform employee should review such contestations. If the review outcome is not acceptable to both customer and worker, a neutral third party, selected by customers, workers and the platform, can make a final and binding decision.

8. **Contractual terms: Platform terms – including the terms for payment, work evaluation, and dispute resolution – should be presented in a human readable format that is clear and concise.** Similar to the Creative Commons' development of "human readable" versions of their intellectual property licences, platforms should provide workers with human readable versions of the platform terms of service. Platform operators should be responsible for keeping these human readable summaries current. Additional task-specific contractual terms that are specified in task descriptions should also be stated up front and clearly. These terms should include the task pay, the time in which the customer agrees to review and pay for work, and any platform-wide or task-specific conditions under which non-payment, if permitted, is to take place.

9. **Worker ratings: Worker evaluations and ratings should not be based on non-payment rates and workers should be given reasons for any negative ratings.** If non-payment is permitted, rates of payment or non-payment should not be used to measure worker quality. It cannot be assumed that customers refuse payment only when work is unusable; customers use imperfect quality control processes and sometimes refuse payment as a cost-reduction strategy. Because non-payment does not necessarily reflect unsatisfactory work, platforms should not let customers screen workers based on customer (non-)payment rates. Measures of work and worker quality should be separated from payment to reduce the effect of erroneous or malicious non-payment on workers' access to work. In general, clients should have to give

valid reasons for giving workers negative reviews. Reviews without valid reasons should be removed from a worker's evaluation history.

One creative way that some researchers have approached the issue of fairer ratings is to incentivize clients to rate workers more highly through a system they term "boomerang" reputation (Stanford Crowd Research Collective, 2016). When a client rates a worker highly in this system, that worker is more likely to be offered tasks from that client in the future. In contrast, when a client rates a worker poorly, then their work is less likely to be completed by that worker in the future. The idea behind this project is that clients will rate workers more accurately if the ratings have an actual impact on who will do that client's work in the future.

10. **Code of conduct: In the absence of collective bargaining agreements, platforms should establish clear codes of conduct for members, including published procedures for workers to raise concerns; and the platforms should demonstrate enforcement of those codes.** The ILO's Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (MNE Declaration), 5th Edition (2017) provides direct guidance to enterprises (multinational and national) on social policy and inclusive, responsible and sustainable workplace practices that can be useful in developing codes of conduct. Platform codes of conduct should be clear in their prohibition of harassment or other unprofessional conduct. There should be clear procedures for users to report violations of the code of conduct; and, likewise, users reported for violations should have a clear procedure for defending themselves against defamation. Ultimately, the platform must also follow through on suspending or terminating accounts of repeat offenders. Moderation is hard but important.

11. **Worker contestations: Workers should be able to contest non-payment, negative evaluations, qualification test outcomes, accusations of code of conduct violations, and account closures.** In some cases, a platform employee may review contestations; in other cases, platform employees will face conflicts of interest and an external mediator will be appropriate. Platforms should contribute to paying for external mediators, along with civil society partners (e.g. unions) and, where appropriate, governments. Platform operators should not be permitted to (even indirectly) punish workers whose deactivation is overturned on external review.

12. **Client ratings and history: Workers should have a way to review clients.** If non-payment is permitted, customer non-payment rates should be made visible to workers choosing tasks. Workers should have access to task histories of prospective clients and client reviews left by other workers.

13. **Task instructions: Platforms should review task instructions before publication.** This will reduce the likelihood of unclear instructions leading to unsatisfactory work and non-payment. One alternative to platform operators reviewing tasks manually is to leverage a platform's managerial automation capabilities in the service of validating task instructions before they go live through the use of prototype tasks (Stanford Crowd Research Collective, 2015). In this scenario, prototype tasks and instructions can be posted to a small pilot group of workers before being released to the general population. By validating the results of this pilot group, and requiring clients to

revisit the task design or instructions if too many responses to the pilot were unacceptable, platforms can help to reduce the frequency of inadequate task instructions.

14. **Work history: Workers should be able to view and export a complete human- and machine-readable work and reputation history at any time.** Workers need access to task history, including payment information, in order to pay their taxes. Workers additionally need access to their task and reputation history so that they can build a resumé.

15. **Workers should have a right to continue a work relationship with a client off the platform.** Although arguably less relevant on microtask platforms, for platforms such as Upwork or Jovoto on which workers find freelance work, they should have a way to move client relationships off the platform. Although it is understandable that platforms need to protect their own income streams, workers should be able to leave and take their clients with them in the event of any changes to the terms of service. Ideally, clear policies would specify fair and reasonable conditions for leaving the platform at other times, in the event that workers and/or clients determine it no longer provides a useful service. For example, a prohibition on taking work off the platform with a given client could last for a period of only the first completed contract plus 90 days, with no fee required; or, an opt-out policy could be available with fees of not more than 10 per cent of a worker's average weekly receipts from their work with a particular client over the previous six months.

16. **Customers and platform operators should respond to worker communications promptly, politely and substantively.** There is however a limit to customers' and operators' ability to field requests from unusually persistent or "unreasonable" customers or workers. Ideally therefore, a transparent process should be devised in which the appropriate parties agree to respond in a given time to enquiries from a given person on a given topic up to a required number of times. If the enquiring party finds the responses inadequate, a neutral third party may make a binding decision.

17. **Workers should know who their customers are and the purpose of their work.** If secrecy is essential, platform operators should work with the customer to disclose some information.

18. **Tasks that may be psychologically stressful or damaging (e.g. review of social media content for hate speech, violence or pornography) should be clearly marked by platform operators in a standard way.** Clients or requesters should not be trusted to label content appropriately; final responsibility lies with the platform. Workers completing such tasks should have access to counselling or support paid for by the customer and/or platform.

6.4 THREE ADDITIONAL CRITERIA ON ADAPTING SOCIAL PROTECTION FOR CROWDWORK

The 18 criteria for fairer microwork should be complemented by policies to improve the social protection of workers. This requires adapting existing social protection systems to the specific situation and needs of crowdworkers, with the goal of achieving the human right of social security for all. ILO research has shown the remarkable capacity of exist-

ing social protection systems to adapt to new challenges. And policy innovations both in developed and developing countries can offer lessons learnt on steps that can be taken (ILO, 2016b, 2017).

1. **Adapt social insurance mechanisms to cover workers in all forms of employment, independently of the type of contract.** While the legal status of some crowdworkers is unclear, at present the workers are mainly classified as self-employed. Policies that have been adopted to facilitate social security coverage of the self-employed and workers in alternative employment arrangements (e.g. employed on a casual basis) are a useful guide for considering how to include crowdworkers in these systems. Typically, it involves adapting and completing legislative frameworks so that self-employed workers can be covered, in concert with policies that can help clarify the nature of the employment relationship[20] and can delineate the respective rights and responsibilities of platforms, requesters and workers. In addition, lowering or removing minimum thresholds with regard to the size of the enterprise, working time or earnings, can help to broaden the coverage.

    Recent developments in Germany show that trade unions can encourage governments to take appropriate policy measures to incorporate self-employed workers, including crowdworkers. After several years of lobbying by IG Metall, the "Grand Coalition" government in Germany in 2018 established as a policy goal the inclusion of all self-employed workers in the statutory pension scheme and the reduction by almost 50 per cent of minimum contributions of self-employed workers to statutory health insurance.

2. **Use technology to simplify contribution and benefit payments.** Simplifying or streamlining administrative and financing requirements and procedures can facilitate the coverage of crowdworkers. Examples include introducing simplified tax and contribution payment mechanisms;[21] facilitating electronic access to registration, consultation and contribution payment mechanisms; more flexible contribution collection schedules or using flat contribution or broad contribution categories;[22] and developing mechanisms to deal with situations of complex or unclear employment relationships, e.g. by using alternative financing arrangements.[23] In addition, there is a need to include mechanisms to facilitate coverage for workers with multiple employers, as well as effective mechanisms that ensure the portability of rights and entitlements. An important issue with respect to crowdworkers is the need to clarify the applicable legislative and institutional arrangements to ensure that in the case of cross-border arrangements, where platforms, requesters and workers are based in different countries, workers are effectively covered.

3. **Institute and strengthen tax-financed mechanisms.** In addition, more attention should be given to strengthening tax-financed social protection mechanisms so as to guarantee at least a basic level of protection for all – a social protection floor (ILO, 2017). Many countries are strengthening tax-financed elements of social protection systems, such as tax-financed pensions or universal child benefits, to guarantee at least a basic level of protection for all. In addition, a more radical policy option would be a universal basic income, which is currently subject of a vibrant debate, yet serious questions remain with regard to the adequacy of benefits, financing requirements and affordability, and redistributive justice. Greater reliance on tax financing

requires that governments can mobilize the necessary resources in the context of a globalized economy and tax competition; it is therefore essential to implement and strengthen effective tax systems that can ensure adequate revenues for financing these benefits in an equitable and sustainable way.

NOTES

1   See http://guidelines.wearedynamo.org.

2   See   http://wiki.wearedynamo.org/index.php?title=Basics_of_how_to_be_a_good_requester

3   See http://faircrowd.work/platform-reviews/platform-review-information/; for additional detail see Harmon and Silberman, 2018.

4   See http://crowdsourcing-code.com.

5   See http://ombudsstelle.crowdwork-igmetall.de.

6   See, for example, this post on the AMT users forum on reddit, in which a prospective worker asks why his application has been rejected multiple times, and other workers have to explain that it is because he is not a US resident, then a simple requirement for use of the platform: https://www.reddit.com/r/mturk/comments/2cla0o/mturk_keeps_rejecting_my_account_application/ [28 August 2017].

7   See, for example, this thread on the reddit AMT workers forum, in which users speculate as to whether first paying Amazon for additional unrelated services (Amazon Prime) might be a way to increase their opportunity of being allowed to work through Amazon: https://www.reddit.com/r/mturk/comments/6i46oe/getting_accepted_into_mechanical_turk/ [28 August 2017].

8   See, for example, CrowdFlower Master Terms of Service, section 11, "Violation of These Terms of Service", in which CrowdFlower reserves the right to "suspend, limit, or cancel your access to the CrowdFlower website at any time for any reason", version 13 November 2015, available at: https://www.crowdflower.com/legal/ [28 August 2017].

9   See, for example, section 3.6 of the MyLittleJob terms of service: "If the student does not fulfil the task within the time set by the client and did not contact the client because of the task, he or she will be set back automatically to quality level '1 star' if a higher quality level has already been achieved" (https://www.mylittlejob.com/Student-Terms-of-Service/ [10 July 2017]). None of the platforms studied in detail in this report has a related clause in their terms documents. However, CrowdFlower, on its help centre page, clearly lays out its system of performance level ratings, where workers can earn "badges" (level 1 to 3), as well as the "flag" system, noting that "flags have a big impact on your ability to earn Performance Level Badges" (https://communitysupport.crowdflower.com/ [24 January 2018]). This system creates a lot of frustration among workers (see, for example, the following forum discussion: https://www.neobux.com/forum/?/48/559578/Flag-System/ [24 January 2018]). In a similar vein, AMT has a feature that allows requesters to block workers from working on their tasks. Although not laid out clearly in the documentation, a certain number of blocks might lead to the suspension of a worker's account (see section 5.1).

10   See   https://www.crowdflower.com/legal/code-of-conduct/, last modified 25 February 2014 [18 January 2018].

11   See   https://www.mturk.com/mturk/help?helpPage=policies [1 October 2017]. While not written into the main Conditions of Use or Participation Agreement document (located at https://www.mturk.com/mturk/conditionsofuse), these policies are presumably included as part of the larger Agreement, per the preamble to the Agreement: "This Agreement consists of the terms and conditions set forth in this document together with all applicable policies, procedures and/or guidelines that appear on the Site from time to time (collectively, the "Policies" which are hereby incorporated by this reference into, and made part of, this Agreement)."

12   Prolific does not classify workers as self-employed, referring instead to them as participants or volunteers who receive "rewards" for participating in research projects.

13   This section is an adapted and expanded microtask-specific version of Silberman's "Fifteen criteria for a fairer gig economy" (2017).

14   For a review of four recent cases in the United States, see Cherry (2016a).

15   The sole exceptions are the police and armed forces, which can be excluded.

16   See also paras. 255, 258, 259, pp. 52–53.

17   For example, in the United Kingdom, piece work is subject to time-based minimum wage laws with some additional calculations required to compute a "fair rate": "the amount that allows an average worker to be paid the minimum wage per hour if they work at an average rate" (https://www.gov.uk/minimum-wage-different-types-work/paid-per-task-or-piece-of-work-done [1 October 2017]).

18   The Fee-Charging Employment Agencies Convention (Revised), 1949 (No. 96) also addresses the issue that workers should not be charged fees.

19   If an application level issue in the platform codebase causes it, then the platform operators should take responsibility (as they should have development and testing processes that catch errors like this, or at least should be "incentivized" to make an effort in that direction).

20 The ILO Employment Relationship Recommendation, 2006 (No. 198) provides important guidance in this respect.

21 For example, Uruguay has put in place an application to facilitate mandatory social security coverage for all taxi drivers, including those operating through Uber and other platforms, building on its experience with simplified tax and contribution collection mechanisms for the self-employed and micro-enterprises (monotributo) (BPS Uruguay, 2017).

22 These measures are already being used in a number of countries to extend coverage to previously uncovered workers, including Brazil, Cabo Verde, Costa Rica and Thailand (ILO, forthcoming).

23 Such mechanisms could draw on experiences in India and Germany (ILO, 2016b). India's Worker Welfare Funds provide a mechanism to ensure social security coverage for workers in the construction sector, by requiring the main contractors for construction projects to contribute 1 per cent of the total value of a construction project into the fund, which ensures coverage of all workers working in the project including casual and subcontracted workers. The German artists' social insurance (Künstlersozialversicherung) covers performing artists and publicists through a (non-individualized) global contribution on total contract value by the contracting "employer".

BIBLIOGRAPHY

Adams, A.; Berg, J. 2017. *When home affects pay: An analysis of the gender pay gap among crowdworkers*. Available at: https://ssrn.com/abstract=3048711; doi: 10.2139/ssrn.3048711.

Alba, D. 2017. "The hidden laborers training AI to keep ads off hateful YouTube videos", in Wired, 21 Apr. Available at: https://bit.ly/2oy5qTl.

Al Jazeera. 2017. *Scrubbing the net: The content moderators*. Available at: http://www.aljazeera.com/programmes/listeningpost/2017/05/scrubbing-net-content -moderators-170527124251892.html [7 Dec. 2017].

Amsden, A. 1989. *Asia's next giant: South Korea and late industrialization* (New York and Oxford: Oxford University Press).

Anxo, D.; Mencarini, L.; Pailhé, A.; Solaz, A.; Tanturri, M. L.; Flood, L. 2011. "Gender differences in time use over the life course in France, Italy, Sweden and the US", in *Feminist Economics*, Vol. 17, No. 3, pp. 159–195.

Agrawal, A.; Horton, J.; Lacetera, N.; Lyons, E. 2013. *Digitization and the contract labor market: A research agenda*, NBER Working Paper No. 19525 (Cambridge, MA, National Bureau of Economic Research).

Beerepoot, N.; Lambregts, B. 2015. "Competition in online job marketplaces: Towards a global labour market for outsourcing services", in *Global Networks*, Vol. 15, No.2, pp. 236–255.

Berg, J. 2016. "Income security in the on-demand economy: Findings and policy lessons from a survey of crowdworkers", in *Comparative Labor Law and Policy Journal*, Vol. 37, No. 3, pp. 543–576.

Benson, A.; Sojourner, A.; Umyarov, A. 2015. Can reputation discipline the gig economy? *Experimental evidence from an online labor market*, IZA Discussion Paper No. 9501 (Bonn, Institute for the Study of Labor). Available at: http://ftp.iza.org/dp9501.pdf.

Bergvall-Kareborn, B.; Howcroft, D. 2014. "Amazon Mechanical Turk and the commodification of labour", in *New Technology, Work and Employment*, Vol. 29, No. 3, pp. 213–223.

BPS Uruguay. 2017. *Formalizing enterprises and workers in the shared economy (transporting passengers using mobile phone applications: UBER, Cabify, EasyGo): A case of the social insurance bank, food practices in social security* (Geneva, International Social Security Association).

Brown, P.; Lauder, H.; Ashton, D. 2008. "Education, globalisation and the future of the knowledge economy", in *European Educational Research Journal*, Vol. 7, No. 2, pp. 131–56; doi: 10.2304/eerj.2008.7.2.131.

Chen, A. 2014. "The laborers who keep dick pics and beheadings out of your Facebook feed", in Wired, 23 Oct. Available at: https://www.wired.com/2014/10/content-moderation/ [7 Dec. 2017].

—. 2017. "The human toll of protecting the internet from the worst of humanity", in *New Yorker*, 28 Jan. Available at: https://www.newyorker.com/tech/elements/the-human-toll-of-protecting-the-internet-from-the-worst-of-humanity [7 Dec. 2017].

Cheng, J.; Teevan, J.; Iqbal, S.T.; Bernstein, M.S. 2015. *Break it down: A comparison of macro- and micro-tasks*, Proceedings of the 33rd Annual Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), Seoul, 18–23 Apr., pp. 4061–4064.

Cherry, M.A. 2014. "A eulogy for the EULA", in *Duquesne Law Review*, Vol.52, No.2, pp. 335–344.

—. 2016a. "Beyond misclassification: The digital transformation of work", in *Comparative Labor Law and Policy Journal*, Vol. 37, No. 3, pp. 544–577.

—. 2016b. "Virtual work and invisible labor" in M. Carin, W.R. Oister and M.A. Cherry (eds): *Invisible labor: Hidden work in the contemporary world* (Oakland, CA: University of California Press); pp.71–86.

Choi, H.; Lee, K.; Webb, S. 2016. *Detecting malicious campaigns in crowdsourcing platforms*, paper presented at the IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM), San Francisco, 18–21 Aug.

Choudary, S.P. 2018. "The architecture of digital labour platforms: Policy recommendations on platform design for worker well-being," ILO Future of Work Working Paper Series.

Cimoli, M.; Dosi, G.; Stiglitz, J.E. (eds). 2009. *Industrial policy and development: The political economy of capabilities accumulation* (Oxford, New York: Oxford University Press).

D'Costa, A. 2011. "Geography, uneven development and distributive justice: The political economy of IT growth in India", in *Cambridge Journal of Regions, Economy and Society*, Vol. 4, No. 2, pp. 237–251, doi: 10.1093/cjres/rsr003.

Davies, A. 2017. "Nissan's path to self-driving cars? Humans in call centers", in *Wired*, 5 Jan. Available at: https://bit.ly/2j9KyPU.

De Stefano, V. 2016. *The rise of the "just-in-time workforce": On-demand work, crowdwork and labour protection in the "gig-economy"*, Conditions of Work and Employment Series No. 71 (Geneva, ILO).

Drahokoupil, J.; Piasna, A. 2017. "Work in the platform economy: Beyond lower transaction costs", in *Intereconomics*, Vol. 52, No. 6, pp. 335–340.

Ekbia, H.R.; Nardi, B.A. 2017. *Heteromation, and other stories of computing and capitalism* (Cambridge, MA, MIT Press).

Felstiner, A. 2011. "Working the crowd: Employment and labour law in the crowdsourcing industry", in *Berkeley Journal of Employment and Labour Law*, Vol. 32, No. 1, pp. 143–204.

Gaikwad, S.N.S., et al. 2017. "The Daemo Crowdsourcing Marketplace", in Companion of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing, Portland, OR, Feb. 25–Mar. 1, pp.1–4; doi: /10.1145/3022198.3023270.

Gadiraju, U.; Kawase, R.; Dietze, S. 2014. *A taxonomy of micro tasks on the web*, Proceedings of the 25th Association for Computing Machinery (ACM) Conference on Hypertext and Social Media, Santiago, 1–4 Sep., pp. 218–223.

Glaser, A. 2018. "Want a terrible job? Facebook or Google may be hiring", in Slate, 18 Jan. Available at: https://slate.com/technology/2018/01/facebook-and-google-are-building-an-army-of-content-moderators-for-2018.html.

Goodman, B. 1999. "Honey, I shrink-wrapped the consumer: The shrink-wrap agreement as an adhesion contract", in *Cardozo Law Review*, Vol. 21, No. 1, pp. 319–360.

Graham, M.; Hjorth, I.; Lehdonvirta, V. 2017. "Digital labour and development: Impacts of global digital labour platforms and the gig economy on worker livelihoods", in *Transfer,* Vol. 23, No. 2, pp. 135–162.

Greenhouse, S. 2012. "A part-time life, as hours shrink and shift", in *The New York Times*, 28 Oct.

Hara, K.; Adams, A.; Milland, K.; Savage, S.; Callison-Burch, C.; Bigham, J.P. 2018. *A data-driven analysis of workers' earning on Amazon Mechanical Turk*, paper presented at the Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), Montreal, 21–26 Apr.

Harmon, E.; Silberman, M.S. 2018. "Rating working conditions on digital labor platforms", in T. Ludwig et al. (eds) Special Issue on Crowd Dynamics: Conflicts, Contradictions, and Cooperation Issues in Crowdsourcing, *Journal of Computer Supported Cooperative Work*; doi: 10.1007/s10606-018-9313-5.

Hirth, M.; Hossfeld, T.; Tran-Gia, P. 2011. *Anatomy of a crowdsourcing platform – using the example of microworkers.com*, paper presented at the Fifth International Conference on Innovative Mobile and Internet Services in Ubiquitous Computing (IMIS), Seoul, 30 June–2 July.

Howe, J. 2006. "The rise of crowdsourcing," in *Wired*, 1 June. Available at: https://www.wired.com/2006/06/crowds/ [28 Aug. 2017].

International Labour Office (ILO). 2006. *Freedom of association: Digest of decisions and principles of the Freedom of Association Committee of the Governing Body of the ILO*, 5th rev. ed. (Geneva).

——. 2016a. *Women at work: Trends 2016* (Geneva).

——. 2016b. *Non-standard employment around the world: Understanding challenges, shaping prospects* (Geneva).

——. 2017. *World Social Protection Report 2017–19: Universal social protection to achieve the Sustainable Development Goals* (Geneva).

——. 2018. *Care jobs and the care economy: A challenge and an opportunity for the future of decent work* (Geneva).

——. forthcoming. *Extending social security coverage to workers in the informal economy: Lessons from international experience* (Geneva).

Ipeirotis, P. 2010. "Analyzing the Amazon Mechanical Turk marketplace", in *XRDS*, Vol. 17, No. 2, pp. 16–21.

Irani, L. 2015a. "Difference and dependence among digital workers: The case of Amazon Mechanical Turk", in *South Atlantic Quarterly*, Vol. 114, No. 1, pp. 225–234.

Irani, L. 2015b. "Justice for 'Data Janitors'", in: Public Books, 15 Jan. Available at: http://www.publicbooks.org/nonfiction/justice-for-data-janitors.

Irani. L.; Silberman, M.S. 2013. *Turkopticon: Interrupting worker invisibility in Amazon Mechanical Turk*, Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Paris, 28 Apr.–2 May, pp. 611–620.

Johnston, H.; Land-Kazlauskas, C. 2018. *Organizing on-demand: Representation, voice, and collective bargaining in the gig economy*, Conditions of Work and Employment Series No. 94 (Geneva, ILO).

Kässi, O.; Lehdonvirta, V. 2016. *Online Labour Index: Measuring the online gig economy for policy and research*, paper presented at Internet, Politics & Policy 2016, Oxford, 22–23 Sep. Available at: http://ilabour.oii.ox.ac.uk/online-labour-index/ [10 Nov. 2017].

Kessler, F. 1943. "Contracts of adhesion – some thoughts about freedom of contract", in *Columbia Law Review*, Vol. 43, No. 5, pp. 629–642. Available at: www.jstor.org/stable/1117230 [19 Mar. 2018].

Kim, N.S. 2013. *Wrap contracts: Foundations and ramifications* (Oxford: Oxford University Press).

Kittur, A.; Nickerson, J.V.; Bernstein, M.S.; Gerber, E.M.; Shaw, A.; Zimmerman, J.; Lease, M.; Horton, J.J. 2013. *The future of crowd work*. Proceedings of the CSCW '13 Conference, San Antonio, TX, pp. 1301–1318.

Kuek, S.C.; Paradi-Guilford, C.; Fayomi, T.; Imaizumi, S.; Ipeirotis, P.; Pina, P.; Singh, M. 2015. *The global opportunity in online outsourcing* (Washington, DC, World Bank).

Lee, K.; Kusbit, D.; Metsky, E.; Dabbish, L. 2015. *Working with machines: The impact of algorithmic and data-driven management on human workers*, Proceedings of the Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), Seoul, 18–23 Apr, pp. 1603–1612.

Lee, K.; Webb, S.; Ge, H. 2014. *The dark side of micro-task marketplaces: Characterizing Fiverr and automatically detecting crowdturfing*, Proceedings of the Eighth Interantional AAAI Conference on Weblogs and Social Media, Ann Arbor, MI, 1–4 Jun., pp. 275–284.

Lehdonvirta, V. 2017. *The online gig economy grew 26% over the post year*. Available at: http://ilabour.oii.ox.ac.uk/the-online-gig-economy-grew-26-over-the-post-year/ [10 July 2018].

Maréchal, N. 2017. *Content moderation and corporate accountability: Ranking digital rights at #ATM2017*. Available at: https://atm-ucla2017.net/2017/12 [15 Mar. 2018].

Marshall, C.; Shipman, F.M. 2013. *Experiences surveying the crowd: Reflections on methods, participation, and reliability*, Proceedings of the 5th Annual Association for Computing Machinery (ACM) Web Science Conference (WebSci '13), Paris, 2–4 May, pp. 234–243.

Martin, D.; Hanrahan, B.V.; O'Neill, J.; Gupta, N. 2014. *Being a Turker*, Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW), Baltimore, MD, 15–19 Feb., pp. 224–235.

Matopoulos, A. 2011. "Warehouse technologies in retail operations: The case of voice picking," in M. Bourlakis, I. Vlachos and V. Zeimpekis (eds): *Intelligent Agrifood Chains and Networks* (Chichester, UK, Wiley-Blackwell), pp. 195–206.

McInnis, B.; Cosley, D.; Nam, C.; Leshed, G. 2016. Taking a HIT: *Designing around rejection, mistrust, risk, and workers' experiences in Amazon Mechanical Turk*, Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems, San Jose, CA, 7–12 May, pp. 2271–2282.

Melachrinoudis, E.; Olafsson, M. 1995. "A microcomputer cashier scheduling system for supermarket stores", in *International Journal of Physical Distribution & Logistics Management*, Vol. 25, No. 1, pp. 34–50; doi: 10.1108/09600039510080180.

Möhlmann, M.; Zalmanson, L. 2017. "Hands on the wheel: Navigating algorithmic management and Uber's autonomy, Proceedings of the International Conference on Information Systems (ICIS 2017), Seoul, 10 –13 Dec.

Motoyama, M.; McCoy, D.; Levchenko, K.; Savage, S.; Voelker, G.M. 2011. Dirty jobs: *The role of freelance labor in web service abuse*, paper presented at the 20th USENIX Security Symposium, San Francisco, CA, 8–12 Aug.

Mugglestone, L. 2005. *Lost for words: The hidden history of the Oxford English Dictionary* (New Haven, Yale University Press).

Murray, K.M.E. 1977. *Caught in the web of words: James Murray and the Oxford English Dictionary* (New Haven, Yale University Press).

Nakashima, R. 2018. "AI's dirty little secret: It's powered by people", in *Associated Press*, 5 Mar. Available at: https://bit.ly/2I3pHLv.

Narula, P.; Gutheim, P.; Rolnitzky, D.; Kulkarni, A.; Hartmann, B. 2011. *MobileWorks: A mobile crowdsourcing platform for workers at the bottom of the pyramid*, paper presented at the 3rd Human Computation Workshop (HCOMP '11), San Francisco, 8 Aug.

Newman, L.H. 2017. "It's not always AI that sifts through your sensitive info", in *Wired*, 29 Nov. Available at: https://bit.ly/2i5NqyH.

Nickerson, J.V. 2014. "Crowd work and collective learning", in A. Littlejohn and A. Margaryan (eds): *Technology-enhanced professional learning* (New York and London, Routledge), pp. 39–49. Available at: http://ssrn.com/abstract=2246203 [20 Feb. 2018].

Obar, J.A.; Oeldorf-Hirsch, A. 2016. *The biggest lie on the internet: Ignoring the privacy policies and terms of service policies of social networking services*, paper presented at the 44th Research Conference on Communication, Information and Internet Policy, Arlington, VA, 30 Sep.–1 Oct.; doi: 10.2139/ssrn.2757465.

Pasquale, F. 2015. *The black box society: The secret algorithms that control money and information* (Cambridge, MA, Harvard University Press).

Perez, S. 2017. "YouTube promises to increase content moderation and other enforcement staff to 10K in 2018", in *TechCrunch*, 5 Dec. Available at: https://techcrunch.com/2017/12/05/youtube-promises-to-increase-content-moderation-staff-to-over-10k-in-2018/ [7 Dec. 2017].

Rani, U.; Furrer, M. forthcoming. "Work and income security among workers in on-demand digital economy: Issues and challenges in developing economies", in *Competition & Change*.

Roberts, S.T. 2014. *Behind the screen: The hidden digital labor of commercial content moderation*, Dissertation (University of Illinois at Urbana-Champaign). Available at: https://www.ideals.illinois.edu/handle/2142/50401 [20 Aug. 2017].

—. 2016. *Commercial content moderation: Digital laborers' dirty work*, Media Studies Publications, Paper 12. Available at: http://ir.lib.uwo.ca/commpub/12 [5 Dec. 2017].

Rodrik, D. 2004. Industrial policy for the twenty-first century. Mimeo (Vienna, UNIDO).

Rose, M. 2003. "Good deal, bad deal? Job satisfaction in occupations", in *Work, Employment and Society*, Vol. 17, No. 3, pp. 503–530.

Roy, S.; Balamurugan, C.; Gujar, S. 2013. *Sustainable employment in India by crowdsourcing enterprise tasks*, paper presented at Annual Symposium on Computing for Development (DEV '13), Bangalore, 11–12 Jan.

Safire, William. 2009. "Fat tail", in *New York Times Magazine*, 5 Feb. Available at: http://www.nytimes.com/2009/02/08/magazine/08wwln-safire-t.html [6 Sep. 2017].

Salazar-Xirinachs, J.M.; Nübler, I.; Kozul-Wright, R. 2014. *Transforming economies: Making industrial policies for growth, jobs and development* (Geneva, ILO).

Salehi, N.; Irani, L.; Bernstein. M.S.; Alkhatib, A.; Ogbe, E.; Milland, K.; Clickhappier. 2015. *We are Dynamo: Overcoming stalling and friction in collective action for crowd workers*, Proceedings of the Association for Computing Machinery (ACM) Conference on Human Factors in Computing Systems (CHI), Seoul, 18–23 Apr., pp. 1621–1630.

Schmidt, F. A. 2017. *Digital labour markets in the platform economy: Mapping the political challenges of crowd work and gig work* (Bonn, Friedrich-Ebert-Stiftung).

Scholz, T.; Liu, L.Y. 2010. *From mobile playgrounds to sweatshop city*, Situated Technologies Pamphlets 7 (New York, The Architectural League of New York). Available at: http://www.situatedtechnologies.net/?q=node/105 [13 Sep. 2013].

Schriner, A.; Oerther, D. 2014. "No really, (crowd) work is the silver bullet", in *Procedia Engineering*, Vol. 78, pp. 224–228.

Silberman, M.S. 2015. *Human-centered computing and the future of work: Lessons from Mechanical Turk and Turkopticon*, 2008–2015, Dissertation (University of California, Irvine).

——. 2017. "Fifteen criteria for a fairer gig economy", in M. Graham and J. Shaw (eds): *Toward a fairer gig economy* (London, Meatspace Press), pp. 16–19. Available at: http://tinyurl.com/criteria-for-a-fairer-gig-econ [21 Mar. 2018].

Silberman, M.S.; Irani, L. 2016. "Operating an employer reputation system: Lessons en dash from Turkopticon, 2008–2015", *in Comparative Labor Law and Policy Journal*, Vol. 37, No. 3, pp. 505–541.

Silberman, M.S.; Tomlinson, B.; LaPlante, R.; Ross, J.; Irani, L.; Zaldivar, A. 2018. "Responsible research with crowds: Pay crowdworkers at least minimum wage", in *Communications of the ACM*, Vol. 61, No. 3, pp. 39–41.

Smith, R.; Leberstein, S. 2015. *Rights on demand: Ensuring workplace standards and worker security in the on-demand economy* (New York, National Employment Law Project).

Solon, O. 2017. "Facebook is hiring moderators. But is the job too gruesome to handle?", in The Guardian, 4 May. Available at: https://www.theguardian.com/technology/2017/may/04/facebook-content-moderators-ptsd-psychological-dangers [7 Dec. 2017].

Stanford Crowd Research Collective. 2015. Daemo: A self-governed crowdsourcing marketplace, Proceedings of the 28th Annual ACM Symposium on User Interface Software and Technology (UIST '15), Charlotte, NC, 8–11 Nov., pp. 101–102.

——. 2016. *Boomerang: Rebounding the consequences of reputation feedback on crowdsourcing platforms*, Proceedings of the 29th Annual ACM Symposium on User Interface Software and Technology (UIST '16), Tokyo, 16–19 Oct., pp. 629–627.

Stewart, N.; Ungemach, C.; Harris, A.J.L.; Bartels, D.M.; Newell, B.R.; Paolacci, G.; Chandler, J. 2015. "The average laboratory samples a population of 7300 Amazon Mechanical Turk Workers", in *Judgment and Decision Making*, Vol. 10, No. 5, pp. 479–491.

Sundararajan, A. 2016. *The sharing economy: Then end of employment and the rise of crowd-based capitalism* (Cambridge and London, MIT Press).

Urquhart, F. 1976. "Found at last: The Monarch's winter home", in *National Geographic*, Aug. Available at: http://ngm.nationalgeographic.com/print/1976/08/monarch-butterflies/urquhart-text [1 Oct. 2017].

von Ahn, L. 2005. *Human computation*, Dissertation (Carnegie Mellon University).

Wilson, N.S. 1965. "Freedom of contract and adhesion contracts", in *International and Comparative Law Quarterly*, Vol. 14, No. 1, pp. 172–193. Available at: www.jstor.org/stable/756723 [19 Mar. 2018].

YouTube. 2018. "More information, faster removals, more people – An update on what we're doing to enforce YouTube's community guidelines", 23 Apr. Available at: https://youtube.googleblog.com/ [4 May 2018].

APPENDIX I

Tables

Table A1.1 **Number of observations, by platform and country, ILO survey of crowdworkers, 2015 and 2017**

Region	AMT 2015	CrowdFlower 2015	AMT 2017	CrowdFlower 2017
Africa		Algeria (2) Egypt (2) Morocco (1) Tunisia (1)		Algeria (2) Egypt (2) Morocco (1) Nigeria (2) South Africa (1)
Asia and the Pacific	India (128)	Bangladesh (2) China (1) India (30) Indonesia (10) Malaysia (2) Pakistan (3) Philippines (6) Sri Lanka (2) Viet Nam (2)	India (251)	Bangladesh (2) Brunei (1) China (1) India (10) Indonesia (2) Pakistan (2) Philippines (1) Viet Nam (2)
Arab States		Qatar (1)		
Europe and Central Asia		Austria (1) Belgium (2) Bosnia and Herzegovina (33) Bulgaria (12) Croatia (6) Estonia (1) Finland (2) Germany (8) Greece (7) Hungary (6) Israel (2) Italy (9) Macedonia, The Former Yugoslav Republic of (3) Netherlands (3) Poland (9) Portugal (4) Romania (10) Russian Federation (16) Serbia (32) Slovakia (3) Slovenia (1) Spain (12) Sweden (1) Turkey (12) Ukraine (5) United Kingdom (7)	Lithuania (1) Portugal (1) Sweden (1)	Austria (1) Bosnia and Herzegovina (21) Bulgaria (1) Croatia (4) Estonia (1) Finland (1) France (1) Germany (2) Greece (5) Hungary (2) Israel (1) Italy (9) Latvia (1) Macedonia, The Former Yugoslav Republic of (4) Moldova, Republic of (3) Netherlands (2) Poland (7) Portugal (5) Romania (4) Russian Federation (11) Serbia (32) Slovakia (2) Spain (13) Turkey (10) Ukraine (13) United Kingdom (5)
Latin America and the Caribbean		Argentina (2) Brazil (13) Colombia (1) Dominican Republic (1) Ecuador (1) Mexico (4) Peru (2) Venezuela, Bolivarian Republic of (39)	Chile (1)	Argentina (3) Bolivia, Plurinational State of (1) Brazil (33) Chile (1) Colombia (1) Mexico (8) Peru (5) Uruguay (1) Venezuela, Bolivarian Republic of (65)
Northern America	United States (686)	Canada (2) United States (10)	Canada (2) United States (231)	Canada (13) United States (34)

Table A1.1 continued

Region	Clickworker 2017	Prolific 2017	Microworkers 2017
Africa	South Africa (4)	Kenya (1)	Algeria (4) Egypt (2) Ghana (1) Kenya (6) Morocco (6) Nigeria (20) South Africa (2) Tunisia (4)
Asia and the Pacific	India (16)	Australia (3) India (11) Japan (1) New Zealand (1) Singapore (1)	Australia (1) Bangladesh (8) India (55) Indonesia (26) Malaysia (8) Nepal (32) New Zealand (2) Pakistan (9) Philippines (9) Singapore (2) Sri Lanka (10)
Arab States			Saudi Arabia (2)
Europe and Central Asia	Austria (7) Belgium (2) France (15) Germany (177) Hungary (2) Italy (39) Kyrgyzstan (1) Netherlands (4) Poland (5) Portugal (5) Romania (2) Russian Federation (14) Spain (21) Switzerland (4) United Kingdom (47)	Austria (1) Bosnia and Herzegovina (9) Czech Republic (1) Georgia (1) Germany (2) Greece (1) Hungary (1) Ireland (3) Lithuania (1) Netherlands (1) Portugal (5) Romania (1) Russian Federation (2) Serbia (8) Spain (2) United Kingdom (232)	Albania (1) Armenia (1) Belgium (2) Bosnia and Herzegovina (9) Bulgaria (9) Croatia (7) Czech Republic (1) Finland (1) France (7) Germany (7) Hungary (1) Ireland (1) Italy (19) Macedonia, the Former Yugoslav Republic of (6) Netherlands (3) Poland (1) Portugal (14) Romania (11) Russian Federation (1) Serbia (35) Slovenia (1) Spain (7) Turkey (1) Ukraine (1) United Kingdom (10)
Latin America and the Caribbean	Brazil (10) Chile (1) Colombia (1)	Brazil (1)	Argentina (1) Brazil (1) Colombia (1) Ecuador (2) Jamaica (3) Mexico (1) Venezuela, Bolivarian Republic of (6)
Northern America	Canada (5) United States (73)	Canada (12) United States (193)	Canada (9) United States (166)

Table A1.2 Regression results, AMT. Dependent variable: log of hourly pay for paid and unpaid work (US$)

	(1) AMT 2015	(2) AMT 2017	(3) AMT 2017
United States (India)	1.222*** (0.140)	1.551*** (0.103)	1.523*** (0.100)
Age	-0.013*** (0.003)	-0.018*** (0.004)	-0.018*** (0.004)
Female (male)	-0.137** (0.067)	-0.118 (0.088)	-0.105 (0.085)
Marital status (never married)			
Married	-0.019 (0.086)	0.147 (0.103)	0.136 (0.100)
Living with a partner	0.028 (0.089)	0.041 (0.129)	0.018 (0.121)
Divorced or separated	-0.087 (0.114)	0.277* (0.143)	0.259* (0.144)
Tenure on platform (7–12 months)			
1–2 years	0.118* (0.068)	0.141 (0.116)	0.154 (0.114)
3–4 years	0.183** (0.087)	0.291*** (0.112)	0.278** (0.110)
5+ years	0.088 (0.106)	0.235* (0.137)	0.211 (0.136)
Education (high school diploma or less)			
Technical certificate	0.056 (0.149)	0.099 (0.223)	0.033 (0.177)
Some university education	0.121 (0.092)	0.061 (0.110)	0.108 (0.112)
Bachelor's degree	0.068 (0.097)	0.232* (0.122)	0.238* (0.124)
Post-graduate degree or higher	-0.171 (0.137)	0.245 (0.157)	0.238 (0.158)
Main task ("simplistic" tasks)			
Content creation			0.438* (0.259)
Surveys			0.251*** (0.095)
Transcription			-0.147 (0.130)
Has children 0-5 years old	-0.043 (0.097)	-0.087 (0.126)	-0.084 (0.123)
Other jobs (no other job)			
Casual	-0.074 (0.068)	-0.042 (0.085)	-0.042 (0.087)
Salaried	0.084 (0.105)	-0.093 (0.108)	-0.074 (0.109)
Freelancer	-0.020 (0.089)	0.103 (0.162)	0.124 (0.160)
Self-employed / other	0.069 (0.186)	0.057 (0.182)	0.077 (0.181)

Table A1.2 continued

	(1) AMT 2015	(2) AMT 2017	(3) AMT 2017
Number of hours crowdwork / week	-0.012*** (0.002)	-0.013*** (0.002)	-0.013*** (0.002)
Health problems	-0.012 (0.082)	-0.079 (0.109)	-0.092 (0.106)
Constant	1.111*** (0.195)	1.020*** (0.220)	1.183*** (0.234)
R²	0.36	0.52	0.55
N	562	379	379

Notes: * p<0.1; ** p<0.05; *** p<0.01. Reference categories and standard errors in parentheses.

Table A1.3 Regression results, AMT. Dependent variable: log of hourly pay for paid and unpaid work (PPP adjusted US$)

	(1) AMT 2015	(2) AMT 2017	(3) AMT 2017
United States (India)	0.020 (0.140)	0.338*** (0.103)	0.310*** (0.100)
Age	-0.013*** (0.003)	-0.018*** (0.004)	-0.018*** (0.004)
Female (male)	-0.137** (0.067)	-0.118 (0.088)	-0.105 (0.085)
Marital status (never married)			
Married	-0.019 (0.086)	0.147 (0.103)	0.136 (0.100)
Living with a partner	0.028 (0.089)	0.041 (0.129)	0.018 (0.121)
Divorced or separated	-0.087 (0.114)	0.277* (0.143)	0.259* (0.144)
Tenure on platform (7–12 months)			
1–2 years	0.118* (0.068)	0.141 (0.116)	0.154 (0.114)
3–4 years	0.183** (0.087)	0.291*** (0.112)	0.278** (0.110)
5+ years	0.088 (0.106)	0.235* (0.137)	0.211 (0.136)
Education (high school diploma or less)			
Technical certificate	0.056 (0.149)	0.099 (0.223)	0.033 (0.177)
Some university education	0.121 (0.092)	0.061 (0.110)	0.108 (0.112)
Bachelor's degree	0.068 (0.097)	0.232* (0.122)	0.238* (0.124)
Post-graduate degree or higher	-0.171 (0.137)	0.245 (0.157)	0.238 (0.158)

Table A1.3 continued

	(1) AMT 2015	(2) AMT 2017	(3) AMT 2017
Main task ("simplistic" tasks)			
Content creation			0.438* (0.259)
Surveys			0.251*** (0.095)
Transcription			-0.147 (0.130)
Has children 0-5 years old	-0.043 (0.097)	-0.087 (0.126)	-0.084 (0.123)
Other jobs (no other job)			
Casual	-0.074 (0.068)	-0.042 (0.085)	-0.042 (0.087)
Salaried	0.084 (0.105)	-0.093 (0.108)	-0.074 (0.109)
Freelancer	-0.020 (0.089)	0.103 (0.162)	0.124 (0.160)
Self-employed / other	0.069 (0.186)	0.057 (0.182)	0.077 (0.181)
Number of hours crowdwork / week	-0.012*** (0.002)	-0.013*** (0.002)	-0.013*** (0.002)
Health problems	-0.012 (0.082)	-0.079 (0.109)	-0.092 (0.106)
Constant	2.313*** (0.195)	2.219*** (0.220)	2.382*** (0.234)
R²	0.18	0.22	0.25
N	562	379	379

Notes: * p<0.1; ** p<0.05; *** p<0.01. Reference categories and standard errors in parentheses.

APPENDIX II

Methodology

ILO SURVEYS OF CROWDWORKERS (2015 AND 2017) AND IG METALL SURVEY

Questionnaire

The 2015 questionnaire, developed by the ILO with assistance from SoundRocket, a survey research company specialized in the social sciences, was delivered in two parts. Survey 1 captured basic demographics, the respondents' current employment in crowd-work and other paid jobs, skills and training required to undertake the task, income, financial and social security, and included a few questions to identify the quality of the responses. Survey 2 included more detailed questions about work experience and work history including employment status and occupation, among others, as well as more detailed information on existing working conditions, such as hours worked and benefits received.

In 2017, to avoid any problems of identifying the workers for the second round, the two surveys were combined to collect all information about the worker through one round only. To ensure comparability, question wording did not change between 2015 and 2017, though some questions from the 2015 survey were dropped and a few more questions were added concerning tasks they performed, workers' awareness about minimum wages and payment of taxes, and on incomes and social security. Both the surveys also included open-ended questions; these textual answers provided a rich source of qualitative information in addition to the quantitative findings of the survey. All the respondents in both the surveys were paid for the task they performed and the platform received a fee for posting the task.

Sample

The 2015 surveyed workers on the Amazon Mechanical Turk and CrowdFlower platforms. Although there is no universal database of crowdworkers that allows drawing a random sample, the demographics of Amazon Mechanical Turk workers have been tracked for several years and are available on the mTurk tracker website (Iperiotis, 2010). The sample was therefore stratified to capture the country breakdown reported in the mTurk tracker website at the time of the survey. Any current AMT worker who had a 95 per cent or greater task acceptance rate, had completed at least 500 tasks, and

who lived in either the United States or India, was eligible to complete the survey. On CrowdFlower, any worker who qualified as a "Quality Worker" by CrowdFlower was eligible to complete the survey. Although the specifics of this classification are not divulged by CrowdFlower, it was highly recommended by CrowdFlower that this designation be used. In 2015, the sample for Survey 2 was restricted to AMT workers, since CrowdFlower does not assign workers a unique identification number, making it impossible to invite the workers to complete Survey 2 at a later stage. On both platforms, the survey was posted at multiple times over multiple days in order to capture workers in different time zones and working at different times of the day.

For the 2017 survey, we evaluated a list of platforms to ascertain the feasibility of running a survey on their platform that could access a wide range of workers. We also sought permission for posting the survey. The final list of platforms was Amazon Mechanical Turk, CrowdFlower, Clickworker, Microworkers and Prolific. As in 2015, eligibility for the task for AMT was any current worker who had a 95 per cent or greater task acceptance rate, who had completed at least 500 tasks and who lived in either the United States or India, though we allowed a few workers from other countries. Unlike in 2015, the sample of AMT was not stratified to match the mTurk tracker website as we had decided to evaluate responses from the US and India separately, and sought more information from Indian workers. For the other platforms, anyone who qualified as a "quality worker" by the respective platform was allowed to participate in the survey. As in 2015, the survey was posted at multiple times over multiple days.

To help evaluate the quality of the responses provided, we included several attention test questions within the survey. These items were designed to have a correct answer that should be clearly obvious to any eligible participant. Failure to respond accurately to the question would mean that the respondent was not paying attention (or even reading) the item as they completed the survey.

Survey 1 results, 2015

The overall sample captured 1,445 responses, of which 1,167 were deemed eligible (see table A2.1). The 278 cases that were removed were because: (1) the respondent did not provide a valid worker ID, which was probably caused by the survey being shared outside the crowdwork platform; (2) the respondent did not provide a code back to the crowdwork platform to validate that they had completed the survey; (3) there were duplicate cases. While the crowdwork platforms did provide us with means to avoid multiple responses, those tools had their limitations. As a result, we were able to identify responses that came from the same respondent multiple times (generally just one duplicate, but sometimes more).

Table A2.1 **Survey participants, by platform, 2015 (S1)**

	Total number of survey respondents	Number of excluded cases	Eligible responses
AMT	904	90	814
CrowdFlower	541	188	353
Total	1 445	278	1 167

Source: ILO survey of crowdworkers, 2015 (S1).

Survey 2 results, 2015

Survey 2 was fielded to the AMT sample who had completed Survey 1, or 826 potentially eligible cases. Excluding ineligible cases (duplicates, cheaters, etc.), the final sample was 789 eligible cases. These eligible Survey 2 cases responded as follows:

- 661 (83.8%) completed Survey 2
- 17 (2.2%) partially completed Survey 2
- 111 (14.1%) failed to respond to Survey 2

Survey results, 2017

In 2017, some 3,500 individuals entered the survey on different platforms: 147 individuals did not take the survey after seeing the welcome page, another eight did not consent to participate in the survey, while the remaining 3,345 individuals took part in the survey (table A2.2).

Table A2.2 **Survey participants, by platform, 2017**

	Total number of individuals who participated in the survey	Number of excluded cases	Reason for exclusion			Final sample size
			Partial completion	Failed attention checks	Multiple submissions	
AMT	623	134	77	49	8	489
CrowdFlower	548	193	101	62	30	355
Clickworker	595	140	61	63	16	455
Prolific	558	63	53	3	7	495
Microworkers	1 021	465	172	195	98	556
Total	3 345	995	464	372	159	2 350

Source: ILO survey of crowdworkers, 2017.

Of the 3,345 individuals surveyed, around 29 per cent were excluded. The share of excluded individuals differed across the platforms, ranging from 11 per cent on Prolific to 46 per cent on Microworkers. There were three main reasons for excluding individuals from the analysis: they only partially completed the survey (14 per cent); they did not pay sufficient attention or used algorithms to complete the survey (11 per cent); or they used multiple accounts or platforms to complete the survey (5 per cent). The share of individuals who only partially completed the survey ranged from 10 per cent (Prolific) to 19 per cent (AMT).

Individuals who did not pay sufficient attention or used algorithms to complete the survey were identified through four attention check questions dispersed throughout the survey. Individuals who gave the wrong answer to two or more of these questions were excluded from the analysis. This share was lowest on Prolific (below 1 per cent) and highest on Microworkers (19 per cent). Finally, individuals who answered the survey multiple times could be identified based on striking similarities on demographic characteristics, textual answers, browser type, or email ID. Most of these multiple entries were made through different platforms, while only a few individuals completed the survey twice on the same platform, possibly using different accounts. Where two entries by the same individual were identified, the first or more complete submission was used. The share of exclusions due to multiple submissions by the same individual was lowest on AMT and Prolific (1 per cent each) and highest on Microworkers (10 per cent).

The share of individuals excluded also varied across regions. It was lowest in Northern America (18 per cent) and Europe and Central Asia (23 per cent), substantially higher in Asia and the Pacific (35 per cent), Latin America and the Caribbean (36 per cent), and high in Africa (48 per cent). A comparison of the reasons for exclusion brings out further differences between the regions. Among those excluded in each region, partial completion was least common in Africa (19 per cent of all exclusions) and most common in Europe and Central Asia (45 per cent). Failing the attention checks was least common in Northern America (27 per cent) and most frequent in Africa (62 per cent). The use of multiple submissions was least common in Asia and the Pacific (6 per cent), and most common in Northern America (37 per cent).

Similarly, differences existed between men and women: 29 per cent of male respondents were excluded, compared to 22 per cent of female respondents. Women were more likely than men to have submitted a partially completed survey, while men were more likely to have failed the attention check questions and to have used multiple accounts.

The final sample in 2017 consists of 2,350 eligible responses, of which 489 were from AMT, 355 from CrowdFlower, 455 from Clickworker, 495 from Prolific and 556 from Microworkers. All statistics for 2017 presented in the report are based on this final sample of 2,350 respondents, unless stated otherwise.

Adjustments to survey data for 2015 and 2017

In addition, while computing hours of work and hourly pay rates, we also excluded cases for extreme values for the above two variables and also adjusted the values for the two survey years. Concerning hours worked, we identified cases where workers had entered

the number of hours per week doing paid and unpaid work to be more than 168 hours. We excluded such cases, which accounted for about 1 per cent of the sample in 2015 and 2 per cent of the sample in 2017. In addition, we also looked at hours worked by taking into consideration the number of hours worked in a week with lowest earnings, average earnings and highest earnings. Based on this, we identified rules that helped us to identify workers who displayed large inconsistencies in their reporting, and we excluded 0.5 per cent of the sample in 2015 and 2 per cent in 2017. Further, hours worked were top-coded at 125 hours per week for those exceeding 125 hours per week.

In the case of hourly wages, to identify inconsistencies or outliers we looked at the amounts reported for the week with the lowest, average and highest earnings. We then applied the rule that the amount reported for the week with the lowest earnings should be lower than or equal to that for the week with average earnings, which should be lower than or equal to the week with the highest earnings. Using this rule, we excluded from the calculation of hourly pay about 1 per cent of the sample in 2015 and 5 per cent of the sample in 2017. As already mentioned, for the calculations of hourly pay and the summary statistics on hours worked, hours worked were top-coded at 125 hours per week. Further, for the calculation of hourly pay, the data were trimmed at 1 and 99 per cent of the hourly pay distribution for each platform.

Interviews

As a follow-up to the 2017 survey, in August and September 2017, interviews were conducted on Skype with 21 workers, with the aim of gaining a better understanding of the workers' motivations, the tasks they performed, their degree of satisfaction with crowdwork and how it affected their personal and professional life. For the interview we targeted participants from different countries, across the different income groups and gender in each of the platforms. Based on this criteria, we randomly selected a batch of 50 participants and sent them emails inviting them to participate in the interview and provided them with relevant information.

The interviewees were from four different platforms (four on AMT, two on CrowdFlower, ten on Microworkers and five on Prolific), and a number of different regions and countries (one interviewee each from Algeria, Canada, Colombia, Croatia, Italy, Netherlands and Romania; two from the United Kingdom; three from Serbia; four from the United States and five from India). Nine interviewees were female, 12 were male. The youngest was 20 years old, the oldest 66 years old. Fifteen interviewees had a job besides crowdwork, while the others did not engage in any other economic activity. The interviews were conducted in a semi-structured manner, based on a questionnaire but leaving room for following up on ideas arising during the interview. The questions concerned work related to their platforms, the tasks they performed, whether they experienced any stress or frustration due to unavailability of tasks, what were their support networks when they faced problems, as well as regulations, working conditions, work-life balance and health issues. Each interview lasted for about an hour.

The IG Metall survey

The IG Metall survey was conducted as part of a broader project to re-design an online clearinghouse for information about crowdwork: faircrowdwork.org. One of the goals of the re-design was to develop a platform review process that would derive an overall numerical (0–5 star) rating for each platform from concrete details about working conditions, in a systematic and consistent way. In order to accomplish this, IG Metall researchers and collaborators designed a detailed 95-question survey that was distributed to workers in 2016 and 2017.

In order to ensure all respondents were, in fact, platform workers, the survey itself was distributed through the online platforms themselves. Rather than asking workers to rate platforms in the abstract, the survey collected information about concrete experiences. The project leads then developed an algorithm for translating survey results into numerical ratings in a consistent way.

Digital labour platforms and the future of work
## Towards decent work in the online world

The emergence of online digital labour platforms has been one of the major transformations in the world of work over the past decade. This report focuses on web-based platforms, wherein tasks can be outsourced by businesses and other clients through an open call to a large, flexible workforce ("crowd"), which is geographically dispersed around the world.

The report provides one of the first comparative studies of working conditions on five major microtask platforms that operate globally. It is based on an ILO survey covering 3,500 workers living in 75 countries around the world and other qualitative surveys. It documents the characteristics of crowdworkers, the type of work they perform and their motivations and perceptions towards this work, and finds both commonalities and differences between workers from the global North and global South.

The report analyses the working conditions on these micro-task platforms, which includes pay rates, work availability, work intensity, rejections and non-payment, worker communication with clients and platform operators, social protection coverage, work family-life balance and workers' prospects for future career development.

The report shows that while digital labour platforms provide a number of opportunities, there are also some drawbacks. In this context, the report reviews the different initiatives that have been put forth, including the Crowdsourcing code of conduct initiated by IG Metall and the German crowdsourcing platforms to improve working conditions. The report recommends 18 principles towards ensuring decent work on digital labour platforms.