



# ► World Employment and Social Outlook

The role of digital labour  
platforms in transforming  
the world of work

2021



# 2021

## ▶ **World Employment and Social Outlook**

The role of digital labour  
platforms in transforming  
the world of work

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# Preface

Technological innovation is transforming every part of our lives. The ability to quickly and cheaply exchange large amounts of data and information has laid the foundations for the rise of the digital economy and digital labour platforms. In both developed and developing countries businesses and consumers have embraced this transformation, as services and goods are delivered in ways that are cheaper and more convenient. Digital labour platforms are now part of our everyday lives.

This transformation extends to the world of work. Digital labour platforms offer new markets for businesses and more income-generating opportunities for workers, including those who were previously outside the labour market. Such platforms are leading to changes not just to the organization of enterprises and work processes but in many cases to the relationship between workers and businesses as well.

It is widely considered that the COVID-19 pandemic has accelerated changes that were already under way, both in society and at work. These include the expanded use of digital platforms and related technological innovations like cloud computing and the use of big data and algorithms. The result has been innovative ways of working, and flexibility for both workers and businesses. The remote working arrangements adopted by many during the past year have brought a rise in e-commerce, e-services and online freelance work. For many who lost their jobs, in both developing and developed countries, digital labour platforms have offered opportunities to earn some income. Many businesses have relied on digital labour platforms to keep operating, reach new markets and reduce costs.

But there are challenges. This new business model allows platforms to organize work without having to invest in capital assets or to hire employees. Instead, they mediate between the workers who perform the tasks and clients, and manage the entire work process with algorithms. Workers on digital labour platforms often struggle to find sufficient well-paid work to earn a decent income, creating a danger of working poverty. Many do not have access to social protection, which is particularly concerning during a pandemic. They are frequently unable to engage in the collective bargaining that would allow them to have these and other issues addressed.

This report is the first major attempt by the ILO to capture the experiences of workers and businesses with digital labour platforms. It is based on surveys and interviews with 12,000 workers in 100 countries, and with 70 businesses, 16 platform companies and 14 platform worker associations operating in multiple sectors and countries.

To address the challenges raised by this new way of working, many governments have taken regulatory steps to tackle issues such as the employment relationship, health and safety standards and inadequate social protection. Private, non-state actors and employers' and workers' organizations have also taken initiatives. However, variations in these regulatory responses have created further challenges. The matter is made more complex because many digital labour platforms operate across multiple borders and jurisdictions. The result is regulatory uncertainty for workers, businesses and governments alike.


Digital labour platforms have the potential to benefit both workers and businesses – and through them, society more generally. But they will only fulfil this positive potential, and help us achieve the Sustainable Development Goals, if the work opportunities they provide are decent. Ensuring that all workers, irrespective of their contractual status, are covered by key labour standards will be critical, as will social dialogue.

A clearer understanding of the operation of digital labour platforms, and a more effective and consistent approach to them, are therefore essential. There is a need for international policy discussions and coordination, which could lead over time to that clearer understanding and a more effective and consistent approach to digital labour platforms worldwide.

A handwritten signature in black ink that reads "Guy Ryder". The signature is written in a cursive, flowing style with a large initial 'G' and 'R'.

Guy Ryder  
ILO Director-General

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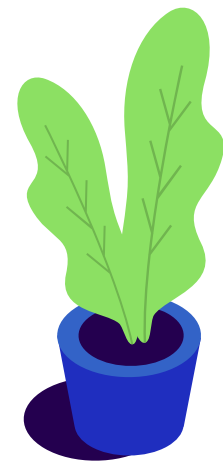
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## Abbreviations


<b>AI</b>	artificial intelligence
<b>API</b>	application programming interface
<b>B2B</b>	business to business
<b>B2C</b>	business to consumers
<b>BPO</b>	business process outsourcing
<b>CAIT</b>	Confederation of All India Traders
<b>CEACR</b>	ILO Committee of Experts on the Application of Conventions and Recommendations
<b>FTAs</b>	free trade agreements
<b>GDPR</b>	General Data Protection Regulation
<b>GPS</b>	Global Positioning System
<b>ICT</b>	information and communications technology
<b>IPO</b>	initial public (stock) offering
<b>IT</b>	information technology
<b>MNE</b>	multinational enterprise
<b>NSSO</b>	National Sample Survey Office (India)
<b>OFN</b>	Open Food Network
<b>OLI</b>	Online Labour Index (Oxford)
<b>PCBU</b>	person conducting a business or undertaking
<b>PPE</b>	personal protective equipment
<b>PSTE</b>	persons in special types of employment
<b>RDC</b>	remote desktop computer
<b>SDGs</b>	Sustainable Development Goals
<b>SMEs</b>	small and medium-sized enterprises
<b>TaaS</b>	Talent as a Service
<b>VPN</b>	virtual private network
<b>WEC</b>	World Employment Confederation
<b>WTO</b>	World Trade Organization







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# Executive summary

The digital economy is transforming the world of work. Over the past decade, the expansion in broadband connectivity and cloud computing, along with innovations in information and communications technologies, have enabled economic transactions and the exchange of large amounts of data and information between individuals, businesses and devices. Data is increasingly a key asset driving the digital economy. Related to these transformations is the proliferation of digital platforms in several sectors of the economy. Since March 2020, the COVID-19 pandemic has led to an increase in remote-working arrangements, further reinforcing the growth and impact of the digital economy. While digital platforms provide a range of services and products, this report focuses on digital labour platforms, which mediate work and have rapidly penetrated a number of economic sectors as a result of innovations in digital technologies.

Digital labour platforms are a distinctive part of the digital economy. They allow individuals or business clients to arrange a ride, order food or find a freelancer to develop a website or translate a document, among many other activities and assignments. By connecting businesses and clients to workers, they are transforming labour processes, with major implications for the future of work. Digital labour platforms can be classified into two broad categories: online web-based and location-based platforms. On **online web-based platforms**, tasks or work assignments are performed online or remotely by workers. These tasks may include carrying out translation, legal, financial and patent services, design and software development on freelance and contest-based platforms; solving complex programming or

data analytics problems within a designated time on competitive programming platforms; or completing short-term tasks, such as annotating images, moderating content, or transcribing a video on microtask platforms. The tasks on **location-based platforms** are carried out in person in specified physical locations by workers, and include taxi, delivery and home services (such as a plumber or electrician), domestic work and care provision.

The development of digital labour platforms has the potential to provide workers, including women, people with disabilities, young people and migrant workers, with income-generating opportunities. In developing countries in particular, such platforms are regarded as a promising source of work opportunities, leading many governments to invest in digital infrastructure and skills. Businesses are also benefiting, as they can use these platforms to access a global and local workforce to improve efficiency and enhance productivity, and enjoy wider market reach.

The opportunities provided by platforms are accompanied by some challenges. For workers, these relate in particular to regularity of work and income, working conditions, social protection, skills utilization, freedom of association and the right to collective bargaining. Many of these





challenges are quite pronounced for workers in informal and non-standard work arrangements and are increasingly affecting those engaged on digital labour platforms, who are a relatively fast-growing share of the workforce. The consequences of the COVID-19 pandemic are exposing the risks and inequalities for workers, particularly for those engaged on location-based platforms. For traditional businesses, the challenges include unfair competition from platforms, some of which are not subject to conventional taxation and other regulations, including those relating to their workforces. Additional challenges for traditional businesses include the amount of funding required to continuously adapt to digital transformation, especially for small and medium-sized enterprises (SMEs), and the inadequate availability of reliable digital infrastructure, particularly in the global South.

This report seeks to enhance our understanding of how digital labour platforms are transforming the world of work, and the implications of that transformation for employers and workers. It draws on the findings of ILO surveys conducted among some 12,000 workers in 100 countries around the world working on freelance, contest-based, competitive programming and microtask platforms, and in the taxi and delivery sectors. It also draws on interviews conducted with representatives of 70 businesses of different types, 16 platform companies and 14 platform worker associations around the world in multiple sectors.

This work provides a pioneering and comprehensive international overview of the platform business model and business strategies, based on an analysis of the terms of service agreements of 31 major online web-based and location-based platforms, and on the experiences of workers and clients on these platforms. It also explores regulatory gaps with regard to platform governance, and reviews multiple initiatives undertaken by governments and social partners to bridge these gaps. Finally, it suggests ways to leverage

the opportunities and overcome the challenges emerging from the rise of digital labour platforms, to ensure sustainable enterprise development and decent work for all, and to advance achievement of the United Nations Sustainable Development Goals.

*The past decade has seen a fivefold increase in the number of digital labour platforms, which are concentrated in a few countries.*

The number of online web-based and location-based (taxi and delivery) platforms rose from 142 in 2010 to over 777 in 2020. The number of online web-based platforms tripled over this period, while the number of taxi and delivery platforms grew almost tenfold. A large proportion of these platforms are concentrated in just a few locations, including the United States of America (29 per cent), India (8 per cent) and the United Kingdom of Great Britain and Northern Ireland (5 per cent).

Digital labour platforms offer two types of work relationship: workers are either directly hired by a platform or their work is mediated through a platform. In the first case, they are categorized as employees with an employment relationship to their employer, while in the second case they are categorized as self-employed or independent contractors by the platforms. Those working under an employment relationship tend to be responsible for the functioning of the platform and comprise a relatively small fraction of the platform workforce. For instance, the freelance platform PeoplePerHour has about 50 employees, while it mediates work for 2.4 million skilled workers.

Estimating the actual size of the platform-mediated workforce is a challenge owing to non-disclosure of data on the part of the platforms. Surveys by researchers and statistical agencies in Europe and North America between 2015 and 2019 suggest that the proportion of the adult population that has performed platform work ranges between 0.3 and 22 per cent.

***On online web-based platforms, labour supply exceeds demand, placing downward pressure on earnings.***

Tracking labour supply and demand on major online web-based platforms since 2017, the Online Labour Observatory reveals that there has been an increase in both demand and supply for freelance and microtask work. Since the COVID-19 outbreak, the labour supply on platforms has increased significantly, while the demand for work has decreased and shifted towards tasks related predominantly to software development and technology. The demand for work on the five major online web-based platforms largely originates from developed countries, while the labour supply originates predominantly from developing countries. The evidence indicates that on some digital labour platforms there is excess labour supply, which leads to greater competition among workers for task assignment and puts downward pressure on the price of the tasks to be performed.

***The global distributions of investment in digital labour platforms and platform revenues are geographically uneven.***

About 96 per cent of the investment in digital labour platforms is concentrated in Asia (US\$56 billion), North America (US\$46 billion) and Europe (US\$12 billion), compared to 4 per cent in Latin America, Africa and the Arab States (US\$4 billion). Platforms providing taxi services have received a much larger share of venture capital funds than delivery or online web-based platforms. Among taxi platforms, the distribution of funding is uneven, with 75 per cent of funds concentrated in only two platform companies.

Digital labour platforms globally generated revenue of at least US\$52 billion in 2019. About 70 per cent of the revenues generated were concentrated in just two countries, the United States (49 per cent) and China (23 per cent), while the share was much lower in Europe (11 per cent) and other regions (17 per cent). The seven largest technology companies globally had a cumulative revenue of over US\$1,010 billion in 2019, and most of these companies invest heavily in digital labour platforms as well.

***The business strategies adopted by digital labour platforms comprise four key elements.***

Four key elements enable platforms to establish a market base, leverage network effects and expand rapidly, while generating benefits for businesses and workers.

- ▶ ***Revenue strategy:*** The revenue strategies of digital labour platforms are based on offering subscription plans and charging various types of fees to platform workers and/or the businesses, clients or customers that use them. Online web-based platforms offer multiple subscription plans and customized services to clients, with free trials to attract subscribers. They also offer workers subscription plans with incremental benefits at extra cost, which tend to be essential for accessing more work. Digital labour platforms often charge a commission fee to workers and businesses; such fees tend to be higher for workers than clients on online web-based platforms. For instance, Upwork generated 62 per cent of its 2019 revenue from various types of fees charged to workers, while 38 per cent was generated through fees charged to clients. On location-based platforms, workers typically pay a commission fee on taxi platforms whereas on delivery platforms it is businesses and customers that generally do so.
- ▶ ***Recruitment and matching of workers with clients:*** Digital labour platforms use algorithms for the matching of tasks or clients with workers, which has been transforming a traditional human resource process that typically involved human interaction. While traditional human resource practices base recruitment selection largely on education levels and experience, algorithmic matching is often determined by indicators such as ratings, client or customer reviews, rates of cancellation or acceptance of work, and worker profiles. On online web-based platforms, this matching process may also take into consideration a worker's subscription plans and optional purchased packages. This practice risks excluding some workers from accessing tasks, particularly those from developing countries and those with lower incomes.

- ▶ **Work processes and performance management:** Algorithmic management of workers is central to the platform business model. Platforms provide a variety of software and hardware tools to facilitate the work process, monitor workers and enable communication between the client and the platform worker. These include monitoring of workers on location-based platforms using the Global Positioning System, and tools that automatically capture screenshots or keyboard strokes on online web-based platforms. Moreover, algorithms assess, evaluate and rate platform worker performance and behaviour using a number of metrics, such as client reviews and customer feedback.
- ▶ **Rules of platform governance:** Digital labour platforms tend to unilaterally shape the governance architecture within the platform through their terms of service agreements, which have to be accepted by workers, clients and businesses for them to be able to access the platform. Besides requiring the observance of the codes of conduct regarding the use of the platform, these agreements also cover aspects such as acceptance or rejection of work, deactivation of platform accounts and data usage. This form of governance allows platforms to exercise considerable control over platform workers' freedom to work, and can shape how and under what conditions clients or businesses engage with platform workers, through exclusivity clauses, for instance.

***Diverse types of businesses, from start-ups to Fortune 500 companies, are increasingly relying on online web-based platforms.***

Businesses use online web-based platforms for three broad reasons: to streamline recruitment processes; to reduce costs and improve efficiency; and to access knowledge and seek innovation. The organizational performance of many companies has improved through innovations facilitated by open source platforms, as well as through access to a global pool of workers with diverse skills via digital labour platforms.

***SMEs in particular have benefited from location-based platforms.***

Many traditional businesses, particularly SMEs, have started using location-based platforms, predominantly in the restaurant and retail sectors. Such businesses are increasingly relying on digital labour platforms as a way to cope with greater competition and the need to expand their customer base, to keep pace with a transforming marketplace and to respond to consumer preferences. Many restaurants are heavily dependent on delivery platforms, particularly since the outbreak of the COVID-19 pandemic, to enhance their visibility among consumers and expand their markets, as well as to improve productivity, efficiency and profitability.

***Digital labour platforms have also supported the growth of start-ups and the reorientation of some sectors.***

Many digital start-ups have emerged around the world, particularly in the field of artificial intelligence (AI), to meet the demands of automated work processes and analytics. As AI technology is still far from fully automating work, such start-ups rely heavily on digital labour platforms and the human intelligence of platform workers, who are dispersed globally, to complete tasks and train machine-learning algorithms through a "human-in-the-loop" process.

Digital labour platforms have also made it possible for some businesses to reorient their business strategies in certain sectors and access wider markets. The business process outsourcing (BPO) industry, for example, is experiencing a transformation wherein customer demands are now being met through digital means instead of the provision of voice-based services, and the customer journey from beginning to end is managed using digital tools. These include Facebook and WhatsApp messages, web chats or emails, and AI bots for providing real-time feedback.

BPO companies are also trying to sustain their business by relying on work from online web-based platforms, apart from directly working with clients. Many technology companies are outsourcing tasks, such as content review, transcription, annotation and image tagging, to workers in developing countries, often as part of their corporate social responsibility, with a view to providing employment opportunities to young graduates and those from disadvantaged backgrounds, for example. While it is often perceived that such tasks are done by AI, in practice they require human value judgement, which is provided by BPO workers mainly based in developing countries, or “invisible” workers on online web-based platforms.

***While businesses can benefit from platforms, challenges abound.***

Many businesses that depend on online web-based platforms struggle to strategically manage the various forms of work arrangements and risk losing internal human resource capacity. For businesses that depend on delivery platforms, high commission fees can reduce profits while poor digital infrastructure can have an impact on the smooth running of the business. Traditional businesses, particularly in the retail sector, are facing market disruptions from large e-commerce platform companies and are confronted with challenges such as competition issues, unfavourable contractual terms, non-transparency on the part of platforms (especially with regard to data, rankings and pricing), weak dispute resolution mechanisms and, more broadly, an uneven playing field.

***Survey findings indicate that a majority of workers on digital labour platforms are highly educated and male.***

The findings from the ILO surveys of workers on online web-based and location-based (taxi and delivery) platforms show that the majority of platform workers are below the age of 35 years and highly educated, in particular in developing countries. While women do find work on digital

labour platforms, they represent only four in ten workers on online web-based platforms and one in ten workers on location-based platforms. In some countries, app-based delivery platforms are an important source of work opportunities for migrants.

Gender-based occupational segregation of tasks is common on freelance platforms. Women are more likely than men to perform professional services (such as legal services, translation, writing and editing), and tasks related to business services or sales and marketing. Few women mentioned that they performed tasks related to technology and data analytics.

***Worker motivation to work on digital labour platforms varies across the different types of platforms and by gender.***

Complementing an existing income and the preference or need to work from home or for job flexibility are the two main motivating factors for platform workers on online web-based platforms. On freelance platforms, the preference or need to work from home or for job flexibility is the chief motivator, while on microtask platforms complementing pay from other income sources is the most important factor. In contrast, the main motivating factors for workers on competitive programming platforms are to improve skills and career opportunities. The preference or need to work from home or for job flexibility is particularly important for women in developing and developed countries alike. On location-based platforms, lack of alternative employment opportunities, job flexibility and better pay compared to other available jobs are the key motivating factors.

***Work on digital labour platforms is the main source of income for many workers...***

On location-based platforms, the overwhelming majority of workers indicated that this was the case. About one third of the workers on online web-based platforms stated that platform work was their main source of income; the proportions were higher in developing countries and for women.



***... but there are major differences between the earnings of workers on online web-based platforms in developed and developing countries.***

Average hourly earnings in a typical week for those engaged on online web-based platforms are US\$3.4, while half of the workers on these platforms earn less than US\$2.1 per hour. For workers on freelance platforms, average hourly earnings are US\$7.6, while on microtask platforms they amount to US\$3.3. Workers in developing countries tend to earn less than those in developed countries; on freelance platforms, for instance, they earn 60 per cent less, even after controlling for basic characteristics and types of tasks performed. Earnings on online web-based platforms are influenced by time spent on unpaid tasks (such as looking for work or building up a profile), competition due to excess labour supply, high commission fees, and non-payment due to rejection of work.

Evidence of the existence of a gender pay gap on freelance platforms is mixed. After controlling for basic characteristics, such as education level and work experience, at the global level there is no difference in hourly earnings, while at the country level there is a significant gender pay gap in some cases. A gender pay gap is also found on location-based platforms in some countries.

***In developing countries, earnings in the app-based taxi and delivery sectors tend to be higher than in the traditional sectors.***

Hourly earnings for app-based taxi drivers and delivery workers vary across the countries analysed in this report, and tend to be higher than in the traditional sectors. In the taxi sector in particular, platforms are able to provide services to customers at low cost, hence expanding the business. In addition, the bonuses and incentives provided to workers have attracted a large number of workers, thereby increasing the labour supply, which can exceed the expected demand and result in intense competition. This situation also has the potential to reduce income-generating opportunities for those in the traditional sectors. In some of the countries surveyed, over 70 per cent of the traditional taxi drivers reported that compared to when they started to work as taxi drivers, the number of trips in a typical day, and daily earnings, had decreased.

***Working hours vary across location-based platforms and online web-based platforms...***

Workers on online web-based platforms work 27 hours on average in a typical week, including both paid and unpaid work, with about one third of their time, or eight hours, spent on unpaid work. About half of them have other paid jobs, working 28 hours on average per week in these jobs in addition to their platform work, which can make for a long work week. Some workers on online web-based platforms face unpredictable work schedules and unsocial hours, particularly in developing countries, as clients are often based in developed countries. This may have negative implications for their work-life balance.

On location-based platforms, most workers in the taxi and delivery sectors work with high intensity and for long hours, on average 65 hours per week in the taxi sector and 59 hours per week in the delivery sector. On app-based taxi and delivery platforms, a high proportion of respondents (79 and 74 per cent respectively) mentioned that they had some degree of stress due to their work, often related to traffic congestion, insufficient pay, lack of orders or clients, long working hours, the risk of work-related injury and pressure to drive quickly.

***... but many workers on both types of platforms would like to do more work.***

Many workers on both online web-based and location-based platforms stated that they would like to do more work than they do. They are unable to do so mostly due to the unavailability of enough work or of well-paid tasks. Furthermore, platform design may also restrict workers from certain developing countries from accessing well-paid jobs on online web-based platforms.

***The relevance of skills and qualifications acquired through formal education varies on digital labour platforms.***

Platforms are redefining the relationship between formal education and access to work, as worker profiles, ratings and reputation are vital for accessing work. Varying degrees of vertical and horizontal skills mismatch can be observed on digital labour platforms. A high proportion of workers on freelance and competitive

programming platforms stated that their skills were a good match with their work, and many were undertaking tasks that were potentially related to their field of study. However, skills mismatch is quite prominent for those engaged on microtask platforms, where a highly educated workforce performs tasks that tend to require few or no specific skills. Similarly, a sizeable proportion of workers on platforms in the taxi and delivery sectors are highly educated.

***Working conditions on digital labour platforms are largely regulated by terms of service agreements.***

Terms of service agreements are contracts of adhesion and are unilaterally determined by the platforms. They define aspects related to working time, pay, customer service etiquette, applicable law and data ownership, among others. They tend to characterize the contractual relationship between the platform and the platform worker as other than employment, regardless of the actual nature of the relationship. As a result, platform workers cannot access many of the workplace protections and entitlements that apply to employees.

***Platform design and algorithmic management are defining the everyday experiences of workers on digital labour platforms.***

Platforms use algorithms to match workers with clients or customers, a process in which worker ratings are decisive. The ratings are themselves algorithmically determined, according to a number of metrics, which include acceptance and rejection rates. This in effect limits workers' ability and freedom to reject work. A considerable number of workers surveyed in the app-based taxi and delivery sectors indicated that they were unable to refuse or cancel work on account of the negative impact this would have on their ratings, which could lead to reduced access to work, lost bonuses, financial penalties and even account deactivation.

Rejection of work or low ratings are common on digital labour platforms, although many workers believe that the reasons for such rejections are not always justifiable. Most platform

workers are unaware of any formal process for filing a complaint or seeking help in such cases. On freelance platforms, when such a process is known and used by workers the outcomes are favourable to them in many cases. On location-based platforms, where workers sometimes face account deactivation, about half of the appeals against deactivation are successful.

***Platform workers are often unable to engage in collective bargaining.***

In many jurisdictions, competition law prohibits self-employed workers from engaging in collective bargaining, on the basis that they constitute a cartel. However, the ILO Right to Organise and Collective Bargaining Convention, 1949 (No. 98), and the Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), provide that freedom of association and collective bargaining shall be available to all workers. Some countries, such as Canada, Ireland, Japan and Spain, have introduced exceptions for certain categories of dependent self-employed workers, which allow them to engage in collective bargaining. Another challenge to the collective organization of digital labour platform workers is that they are geographically dispersed. Nevertheless, some workers based in different regions have been able to organize, including through digital means, while on location-based platforms in particular they have also undertaken strike action, initiated litigation and a drive towards unionization. Some workers have also established platform cooperatives.

***The majority of workers on digital labour platforms do not have social security coverage.***

There are large gaps with regard to health insurance and work-related injury provision, unemployment and disability insurance, and old-age pension or retirement benefits. While access to social protection is limited, workers in the app-based taxi and delivery sectors, particularly women, face various occupational safety and health risks. Not having social security coverage has created significant challenges for all platform workers during the COVID-19 pandemic, especially those on location-based platforms.

***A considerable number of workers on digital labour platforms have experienced or witnessed discrimination or harassment.***

Discrimination on online web-based platforms is associated with exclusion from work opportunities or low pay, on the basis of nationality and gender, which was mentioned particularly by women respondents and workers residing in developing countries. Workers on location-based platforms also indicated having faced or witnessed discrimination or harassment. App-based taxi drivers reported facing aggressive or rude behaviour, mainly by clients, traditional taxi drivers and police officers, in the course of their work. App-based delivery workers mentioned instances of discrimination based on the grounds of their occupation by customers, restaurants as well as the police.

***The COVID-19 pandemic has exposed many of the risks confronting workers on digital labour platforms.***

The ILO rapid-assessment survey in four countries captured the implications of the pandemic for workers on location-based platforms. The majority of the workers in both the taxi and delivery sectors indicated declining demand, which had reduced the earnings for nine out of ten taxi drivers and seven out of ten delivery workers. To compensate for the loss of income, some workers reported that they had started to engage in additional work activities, or provided taxi and delivery services outside the platforms through their private contacts; many had also reduced unnecessary expenditure, used savings, deferred payment of bills, or taken a loan.

Some workers on location-based platforms reported working throughout the crisis due to economic necessity, despite feeling anxiety about contracting COVID-19 while at work. Seven out of ten workers indicated not being able to take paid sick leave, or to receive compensation, in the event they were to test positive for the virus, thus risking the health of others in addition to their own health.

Some location-based platforms have undertaken specific measures to mitigate occupational safety and health risks among workers, including the provision of safety training and personal protective equipment (PPE). However, about half

of the surveyed workers who were provided with PPE stated that the quantity or quality of PPE provided was inadequate. Moreover, eight out of ten workers had incurred additional financial expenditure as they had been obliged to purchase PPE themselves.

***Regulatory responses from many countries have started to address some of the issues related to working conditions on digital labour platforms.***

Countries have taken various approaches to extending labour protections to platform workers. These include:

- ▶ ***Occupational safety and health:*** Laws in Australia and New Zealand have adopted broader statutory language and extended occupational safety and health coverage to all workers. In Brazil, a judicial decision has extended existing safety and health legal standards to platform workers.
- ▶ ***Social security:*** Several countries have introduced innovations to extend social security to platform workers. These include requiring that platforms cover the accident insurance costs of self-employed workers (France); extending social security for self-employed workers (many Latin American countries); and providing work injury and death benefits to workers on particular platforms (Indonesia and Malaysia). In response to the COVID-19 pandemic, some countries have extended sickness benefits to all workers (Ireland) and unemployment benefits to uninsured self-employed workers (Finland and the United States).
- ▶ ***Employment relationship:*** Employee status remains important, as most labour and social protections are associated with it. Countries have adopted various approaches to the classification of platform workers, often arising from litigation, which fall along a spectrum between very broad and very narrow approaches to employment status. These include: (i) classifying them as employees, often based on the amount of control exercised by the platform; (ii) adopting an intermediate category in order to extend labour protection; (iii) creating a de facto intermediate category to ensure that

they obtain certain benefits; and (iv) classifying them as independent contractors, often based on the degree of their flexibility and autonomy.

- ▶ *Working time and remuneration:* Some new approaches to labour standards have been specifically adapted to digitally based work. For instance, French law provides that a platform's voluntary social charter should include the "right to disconnect" and methods of enabling self-employed platform workers to obtain a "decent price" for their work.
- ▶ *Dispute resolution:* Some platforms may restrict dispute resolution to a particular jurisdiction through arbitration clauses, which can be limiting for workers. This has been successfully challenged in some jurisdictions; the Supreme Court of Canada, for example, invalidated a platform's arbitration clause on the ground that it "makes the substantive rights given by the contract unenforceable".
- ▶ *Access to data and privacy:* Governments are increasingly adopting measures regarding data protection and privacy, including in Brazil, India, Nigeria and the European Union. In France, a recent amendment to the Labour Code gives self-employed platform workers in the transportation industry the right to access data related to their platform activities.

*With growing regulatory concerns, platform companies and worker organizations have also been addressing the issues raised.*

In Denmark, a collective bargaining agreement between a trade union and a cleaning platform has allowed some platform workers to transition to employee status. Platform companies have also been developing codes of conduct either unilaterally or in collaboration with other platforms to address some of the challenges confronting workers. Six digital labour platforms have signed the World Economic Forum Charter of Principles for Good Platform Work, which covers issues such as safety and well-being, flexibility, fair conditions, social protection, voice and participation, and data management.

*Given that digital labour platforms operate across multiple jurisdictions, there is a need for some form of international policy dialogue and coordination.*

Governments and non-state actors are in many cases regulating digital labour platforms, but these initiatives vary considerably. Countries face challenges in enforcing regulations, particularly with regard to online web-based platforms, where the platforms, clients and workers are located in different jurisdictions. In this regard, the ILO Maritime Labour Convention, 2006, sets an important precedent as it concerns an industry with multiple parties operating across different jurisdictions. Such an approach could also be considered for digital labour platforms. Another important point of departure is the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy, 2017, which provides guidance to multinational enterprises on social policy and inclusive, responsible and sustainable workplace practices.

International policy dialogue and coordination are also vital to ensure regulatory certainty and the applicability of universal labour standards, given the diversity of responses by countries and platform companies. It is important that the ILO fundamental principles and rights at work are implemented for all platform workers, irrespective of their status. In addition, principles rooted in other ILO Conventions, such as those related to fair payment systems, fair termination and access to dispute resolution, should also be extended to platform workers.

#### *A way forward...*

A way forward would be to engage in a process of global social dialogue aimed at ensuring that the opportunities arising from digital labour platforms are leveraged, and the challenges addressed, so that digital labour platforms are best positioned to provide decent work opportunities, foster the growth of sustainable enterprises and contribute towards achievement of the Sustainable Development Goals. The ILO's independent Global Commission on the Future of Work recommended

the development of an international governance system that sets certain minimum rights and protections and requires platforms and their clients to respect them. It also called for a “human-in-command” approach to algorithmic management, surveillance and control in order to ensure that “final decisions affecting work are taken by human beings”.

The ILO’s Centenary Declaration for the Future of Work calls for “policies and measures that ensure appropriate privacy and personal data protection, and respond to challenges and opportunities in the world of work relating to the digital transformation of work, including platform work” in order to promote inclusive and sustainable development, full and productive employment and decent work for all.

These objectives can best be achieved through social dialogue among the relevant stakeholders, most particularly the digital labour platforms, the platform workers, and their representatives and governments. A concerted effort across multiple international forums and organizations will be critical to ensuring that digital labour platforms develop further in a manner that strongly contributes to inclusive and sustainable development. Such a process of regulatory dialogue and coordination should have at its core an effort to ensure that domestic laws implementing the fundamental principles and rights at work as well as other key legal provisions, such as those in respect of occupational safety and health and social security, apply to all workers, including digital labour platform workers. With the right engagement and preparation, this process could lead over time to a clearer understanding and a more effective and consistent approach at the enterprise, national and international levels, with a view to:

- ▶ ensuring fair competition and creating an enabling environment for sustainable enterprises;
- ▶ requiring and promoting clear and transparent terms of engagement and contractual arrangements for workers and businesses, including as reflected in labour and consumer laws;
- ▶ ensuring that workers’ employment status is correctly classified and is in accordance with national classification systems;
- ▶ ensuring transparency in ratings or rankings of workers and businesses using digital platforms such as online web-based, location-based and e-commerce platforms;
- ▶ ensuring transparency and accountability of algorithms for workers and businesses;
- ▶ protecting workers’ personal and work data, as well as data relating to businesses and their activities on platforms;
- ▶ working towards ensuring that self-employed platform workers enjoy the right to bargain collectively, for example through greater harmonization of competition law with labour law;
- ▶ reaffirming that anti-discrimination and occupational safety and health laws apply to digital labour platforms and their workers;
- ▶ ensuring adequate social security benefits for all workers, including platform workers, by extending and adapting policy and legal frameworks where necessary;
- ▶ ensuring fair termination processes for platform workers;
- ▶ ensuring access to independent dispute resolution mechanisms;
- ▶ ensuring that platform workers are able to access the courts of the jurisdiction in which they are located if they so choose;
- ▶ providing for wage protection, fair payments and working time standards;
- ▶ allowing platform workers to move freely between platforms, including by facilitating portability of workers’ data, for example regarding ratings; and
- ▶ aiming at effectively taxing the digital economy, including platforms, clients and workers, as well as their transactions.





**1**

**The digital  
transformation  
of industry  
and the world  
of work**

# The rise of digital labour platforms

**5x** rise since 2010



Hybrid  
Delivery  
Taxi  
Online web-based



Concentration of platforms in



▶ Exponential growth in the number of platforms

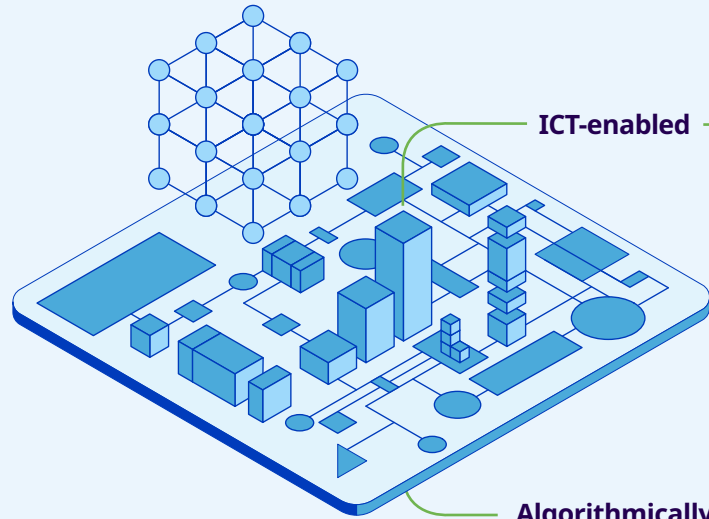
▶ Platforms rely on two distinct types of workers



Workers directly employed by the platform

99designs	139	1,200,000
Appen	800	1,000,000
HackerRank	200	11,000,000
Meituan	54,580	3,987,000
PeoplePerHour	50	2,400,000
Rappi	1,500	25,000
Uber	26,900	5,000,000

Workers mediated by the platform



ICT-enabled

Data-driven

Algorithmically managed

**US\$119** billion

▶ Global investment in platforms

Taxi  
**US\$ 62** billion

Delivery  
**US\$ 37** billion

Hybrid  
**US\$ 17** billion

Online web-based  
**US\$ 3** billion

**96%** invested in Asia, North America and Europe

**4%** invested in Latin America, Africa and the Arab States

**49%** United States

**11%** Europe

**23%** China

**17%** Other regions

**US\$ 52** billion

▶ Global revenue generated by platforms



## ► Introduction

The pace at which technological advances and innovations are taking place is unprecedented. The information and communications technology (ICT) revolution of the early 1990s led to a rapid diffusion and adoption of the internet that transformed a number of economic sectors and reshaped regional, national and international markets. It led to a geographical fragmentation of industry as firms could subcontract, outsource and offshore through global supply chains at a relatively low cost. The expansion of broadband connectivity and the availability of high-speed internet enabled the rapid development of digital infrastructure from the early 2000s. Widespread use of the internet and ICT devices by both businesses and individuals paved the way for web-based economic transactions (on platforms such as Amazon and eBay), and laid the foundation for the digital economy (Castells 2010).

Over the past decade, the availability of cloud infrastructure and computing services has facilitated the growth of digital platforms that have gradually penetrated almost all sectors of the economy. One can identify three broad categories of such platforms: those that provide digital services and products to individual users, such as social media; those that mediate exchange of goods and services, such as e-commerce or business-to-business (B2B) platforms; and those that mediate and facilitate labour exchange between different users, such as businesses, workers and consumers, including digital labour platforms such as Upwork or Uber. These platforms are redefining the means of economic exchange and increasingly shaping the world of work.

This report focuses on two main types of digital labour platforms: *online web-based platforms*, where tasks are performed online and remotely by workers and are allocated to a crowd (on microtask and competitive programming platforms) or to individuals (on freelance and contest-based platforms); and *location-based platforms*, where tasks are performed at a specified physical location by individuals such as taxi drivers and delivery workers (see figure 1.1). These platforms have emerged as a distinctive feature of the digital economy in the way they connect businesses and

## ► Digital labour platforms have emerged as a distinctive feature of the digital economy.

clients to workers, and provide new opportunities for both workers and businesses. In addition, technological advances have facilitated new ways of organizing work, thereby transforming work processes and how people work. The COVID-19 pandemic has further reinforced their role in the economy. The expansion of such platforms has occurred alongside the increased relevance of data – particularly big data – that can now be stored and analysed through cloud computing. These developments have been supported by the availability of venture capital funds, which have played a fundamental role in financing the diffusion of digital platforms.

Digital labour platforms offer income-generating opportunities to workers and their flexible work arrangements may be more convenient for certain workers, such as women, persons with disabilities and young people. They also provide opportunities for those marginalized in traditional labour markets, such as refugees and migrant workers. In addition, they provide an avenue for workers to complement their earnings from low-paying or seasonal jobs (Surie and Sharma 2019). Because digital labour platforms are emerging as an important source of income-generating opportunities, many governments in developing countries are investing in digital infrastructure and supporting training programmes developed by the private sector to equip the workforce with digital skills (Graham, Hjorth and Lehdonvirta 2017; Heeks 2017).

Digital labour platforms bring significant benefits to businesses. For instance, online web-based platforms have enabled businesses to access workers and to source talent globally, allowing them to reduce costs and improve productivity (Corporaal and Lehdonvirta 2017). With regard to location-based platforms, businesses are able to benefit from access to a wider market, a broader customer base and labour supply, and improved revenues and productivity. Other forms of digital platforms, such as e-commerce platforms, enable businesses to sell their products to a wider market

(for example, small and medium-sized enterprises (SMEs) selling on Amazon).

Along with these opportunities, several challenges have also emerged for both businesses and workers. Many SMEs face potential competition issues as a result of aggressive pricing by digital labour platforms. For workers, the challenges relate to regularity of work and income, working conditions, social protection and access to their fundamental rights of freedom of association and collective bargaining. As such the digital transformation has the potential to increase informal and non-standard work, which can result in income and job insecurity (OECD 2020a). The COVID-19 pandemic has further revealed the enormous risks in these areas for workers engaged on digital labour platforms (ILO 2020a and 2020b).

This report focuses on the rapid changes that digital labour platforms bring to work, work practices and the business landscape. Digital labour platforms are blurring the previously clear distinction between employees and the self-employed. Global economic competition is further resulting in the growth of atypical work arrangements and a corresponding decline in employment-related and other benefits, as well as a polarization of the workforce (Berg 2019). In addition, innovative digital technologies are changing human resource management practices, as algorithms increasingly replace humans in allocating, evaluating, and administering rewards for work mediated through these platforms. These profound and rapid changes have major implications for workers' well-being and working conditions around the world, especially in middle- and low-income countries. The regulation of digital labour platforms has hence been under discussion in several countries, with debates under way particularly on the role of regulatory frameworks for ensuring decent work on these platforms and fair competition for businesses.

Although digital labour platforms are at a relatively early stage of development, they have been growing rapidly over the past decade. Kuek et al. (2015), on the basis of interviews with representatives of online microtask and freelance platform companies and data disclosed by them, estimated that their global annual market size in

2016 was about US\$4.8 billion. The total revenue of one of the biggest online web-based platforms – Upwork – increased from US\$164 million in 2016 to US\$301 million in 2019 (Upwork 2020). As digital labour platforms continue to rapidly proliferate and increasingly shape the world of work, addressing the challenges arising for workers and businesses will be critical to fully leveraging the income-generating potential of digital labour platforms and meeting the United Nations Sustainable Development Goals (SDGs). In this regard, it is beneficial to explore the core functioning of digital labour platforms' business model and their interactions with other businesses, with a view to gaining a better understanding of the experiences of businesses and workers that engage with these platforms. This report thus reviews the opportunities and challenges that digital labour platforms present to businesses and workers, and the nature of regulations and public policies that might be required to ensure that both workers and businesses are protected and able to sustain and thrive in the process.

Chapter 1 traces the rise of the digital economy and digital platforms, focusing on digital labour platforms in particular. It assesses the impact of such platforms on different economic sectors and labour markets, highlighting the distinctive aspects of digital labour platforms that are transforming the world of work. It gives some estimates of the number of platform companies and the number of workers whose work is mediated through these platforms based on the available literature. It also discusses the roles of data and finance in the rapid rise of these platforms, and the challenges the platforms pose to both businesses and workers.

Chapter 2 discusses the business strategies and key elements of the platform business model of both online web-based and location-based platforms based on an analysis of the terms of service agreements of 31 major platforms and interviews with representatives of 16 online web-based and location-based platforms. The key elements of the platform business model which are discussed include revenue models and pricing strategies, recruitment practices, algorithmic management of work processes and evaluation of workers, and rules of platform governance.

Chapter 3 examines the diffusion of digital labour platforms across various sectors of the economy, and explores how and why businesses use them, based on interviews with representatives of 70 SMEs and large enterprises. Using case studies, it explores the opportunities arising from digital labour platforms for new digital technology start-up companies and business process outsourcing (BPO) companies. It also analyses the implications of such platforms for traditional enterprises, particularly SMEs in the retail sector.

Chapter 4 explores the opportunities and challenges for workers on digital labour platforms, based on surveys conducted with some

12,000 respondents globally. It presents a first major overview of the worker experience on digital labour platforms in multiple sectors and countries, particularly in developing countries. Chapter 5 takes a broad approach to regulation to describe the forms of governance and initiatives undertaken by platforms, governments and social partners to address the emerging challenges. Chapter 6 suggests policies that may be required at the national, international and multilateral levels to ensure decent work for workers and fair competition for enterprises on digital labour platforms. Box 1.1 provides definitions of key terms and concepts used in this report.

#### ► Box 1.1 Terminology used in the report

**Information and communications technology (ICT)** covers a range of technological aspects and includes internet access, data, cloud computing, software, and hardware, among others. ICT is used in areas ranging from telecommunications, broadcast media and audio-visual processing to finance, medicine, social media, and digital labour platforms. ICT incorporates both the internet-enabled sphere as well as the mobile one powered by wireless networks, although it also includes older technologies, such as landline telephones, radio and broadcast television.

**Information technology (IT)** is a subset of ICT and is more specifically the use of computer systems, including all hardware and software, as well as peripheral equipment and infrastructure.

**Digital economy** “incorporates all economic activity reliant on, or significantly enhanced by the use of digital inputs, including digital technologies, digital infrastructure, digital services and data. It refers to all producers and consumers, including government, that are utilising these digital inputs in their economic activities” (OECD 2020b, 5).

**Digital platforms** are online entities providing digital services and products. These digital services facilitate “interactions between two or more distinct but interdependent sets of users (whether firms or individuals) who interact through the service via the Internet” (OECD 2019a, 21). These interactions can include exchange of labour, goods (e-commerce) or software.

**Digital labour platforms** facilitate work using “digital technologies to ‘intermediate’ between individual suppliers” (platform workers and other businesses) and clients (EU 2020, 1), or directly engage workers to provide labour services. The work undertaken on these platforms is also commonly referred to as “platform work” or “gig work”.

**Algorithmic management** refers to giving the responsibility of assigning tasks and making decisions to an algorithmic system of control, with limited human involvement. The algorithmic management system improves through self-learning algorithms based on data.

**Worker** is defined in accordance with the ILO’s international labour standards, which include both employees and the self-employed (or independent contractors). Workers on digital labour platforms are also called “gig workers”, “crowdworkers” or “platform workers” in the literature. A taxonomy of how these workers are described by different platforms in their terms of service agreements is presented in [Appendix 2](#), table A2.3.

**Client** refers to users of digital platforms, whether businesses, firms or consumers.

## 1.1 The rise of the digital economy

The rise of the digital economy is associated with the development of a number of software technologies, such as artificial intelligence (AI), cloud computing and blockchain, among others. In the past decade, cloud computing, high-speed connectivity and data storage capacities have expanded significantly, enabling economic transactions and the exchange of large amounts of data and information between individuals, businesses and devices. At the same time, innovations by technology companies, such as Google and Apple, along with the availability of software as an open source and as a service, have led to widespread use and adoption of smart mobile phones, computers and servers by both individuals and businesses (Evans and Schmalensee 2016). These platforms are driving innovations and have generated the development of a wide range of applications across many sectors of the economy, which has the potential to bring about industrial transformation. In the process platforms have also provided new entrepreneurial opportunities in the digital realm that are not only enabling the creation of new products, services and processes, but are also transforming erstwhile offline labour processes and business models. The rise of the digital economy can hence be situated at an intersection at which ICTs and their users, both people and businesses, increasingly rely on digital modes of exchange, both socially and economically.

The rise of the digital economy at the country level is contingent upon the availability of digital infrastructure, which remains uneven around the globe. Digital infrastructure in developing countries still lags behind that in developed countries. This is largely because “high costs of additional international bandwidth to access overseas servers and data centres still limit the uptake of cloud services” in many developing countries (UNCTAD 2019, 8). As a result, in 2019 most cloud traffic was generated in North America, followed by Asia and the Pacific and Western Europe, which together accounted for about 90 per cent of that traffic (UNCTAD 2019). The uneven growth of the digital economy perpetuates a digital divide and

risks exacerbating inequalities, particularly between countries. Addressing this divide requires concerted policy action. Even developing countries that have a stronghold in IT-enabled and software services, such as India, lag “behind in terms of internet bandwidth, connection speed and network readiness” (UNCTAD 2018, VIII).

Consequently, the growth of platform companies is concentrated in certain parts of the world, while developing countries have emerged predominantly as users of such platforms. Developing countries continue to face challenges, mostly due to the above-mentioned shortcomings in digital infrastructure, as well as inadequate financial infrastructure, human resources and institutional capacities. Examples include insufficient access to capital and unavailability of a technologically skilled labour force, as well as the lack of a favourable regulatory environment for technology entrepreneurship. In this context, it becomes imperative to probe some of the key features that have facilitated the rise of the digital economy, and to better understand the opportunities and challenges it has created for economic processes that are transforming today’s world of work.

### 1.1.1 Key features of the digital economy

An increasingly prominent aspect of the digital economy is its ability to provide access to a variety of solutions “as a service” due to the widespread availability of cloud infrastructure and cloud computing (see box 1.2). The availability of cloud infrastructure services has allowed the digital economy to evolve into a much more diverse environment, and these services are playing a critical role in shaping the global economy. Some of the key features of the digital economy are:

**Asset-lightness.** The availability of cloud service infrastructure allows firms to reduce costs related to leasing or renting hardware and downloading software and applications, and to manage on-demand



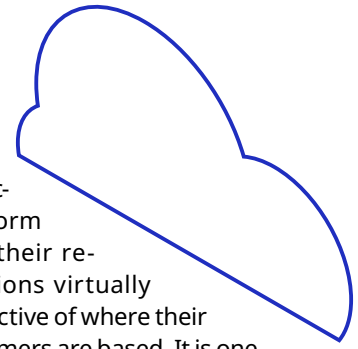
access to applications or storage through a cloud provider (see box 1.2). This makes businesses agile and allows them to focus on core services.

The availability of software application programs and “tools as a service” on platforms reduces duplication costs and improves productivity, as these programs can be used for similar tasks or be customized for new tasks, meaning that programming code does not have to be written from scratch (Boudreau, Jesuthasan and Creelman 2015; Lakhani, Garvin and Lonstein 2012). This reduces developers’ costs in terms of time and money and improves their productivity. Over time, with increased use of programming code, the number of applications and tools available to platform users increases. The availability of software application programs and tools as a service also offers an environment for rapid development and improved productivity.

**Network effects.** The success of a platform depends on its ability to attract a sufficient number of users from all sides of the market (clients and workers). Platforms adopt both pricing and non-pricing strategies – such as providing free access or rewards – to attract users from the different sides of the market. These strategies create more value for users and attract even more users in order to create a critical mass, thereby creating network effects (Evans and Schmalensee 2008). Platforms also attract and retain third-party developers to innovate and add value to the platform by providing them with access to applications and tools at low or zero cost (Boudreau and Jeppesen 2015). In these ways, platforms create network effects.

**Datafication.** The increase in computing power and the availability of cloud storage have enabled data collection, storage and analysis on a massive scale and at a far more rapid pace than ever before. Data has become integral to platform businesses, as it can be monetized, for example through targeted advertising. Data can be used for myriad purposes, such as predicting consumer behaviour, improving products and services, and managing workers via algorithms.

**Mobility.** Cloud infrastructure services allow platform businesses to conduct their regional or global operations virtually from any location, irrespective of where their clients, suppliers or consumers are based. It is one of the distinct features of platform businesses that they are able to leverage the intangibles – that is, software, applications and tools – that are at the core of their business (OECD 2014).



#### ► Box 1.2 Cloud infrastructure and computing services

There are three main cloud infrastructure and computing services:

**Infrastructure as a Service** consists of cloud computing infrastructure, such as hardware, virtual machines, servers, cloud storage and networks, that firms can rent or lease. The services are provided by platform companies such as Amazon Web Services (AWS), Microsoft Azure and Google Compute Engine, and are also available on open source platforms such as OpenStack, CloudStack and Nimbus.

**Platform as a Service** is a cloud computing service that provides components such as operating systems, programming language and development tools, database management and web servers. These services are offered by AWS Elastic Beanstalk, Microsoft Azure, Google App Engine, and other platform companies. They are also available on open source such as Dokku, Flynn and Apache Stratos.

**Software as a Service** offers users software or applications over the internet through a client interface. This includes various statistical programmes, software packages, Dropbox, Slack, and Google Apps, among others. They are also available on open source such as Apache Hadoop software library.

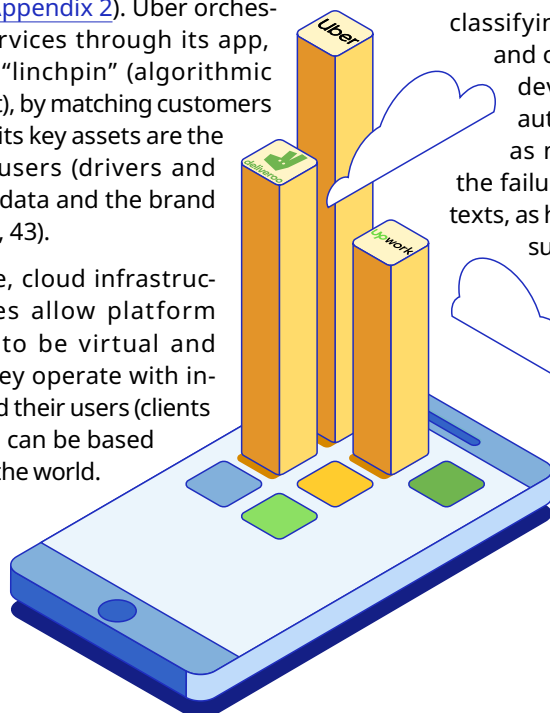
**Source:** Adapted from OECD (2014).

## 1.1.2 The rise of digital platforms

Digital platforms have been able to build on some of the distinct features of the digital economy, and have penetrated diverse sectors of the economy (see section 1.2). In addition, increasing reliance on ICTs, from smartphones to computers, has created multiple opportunities for platform businesses to emerge and thrive. Moreover, the nature and organization of the digital economy has further facilitated the rapid rise of platform businesses. For instance, the availability of cloud infrastructure services at reduced costs, along with the availability of venture capital funding, has reduced entry barriers and enabled the rapid growth of digital platforms over the past decade (Cusumano, Gawer and Yoffie 2019).

Cloud infrastructure has facilitated the growth of digital platforms in many countries and regions, as it makes them asset light. Investment by platforms in traditional capital assets, such as cars, hotels or warehouses, is often minimal; platforms tend to invest instead in digital infrastructure and are overwhelmingly dependent on data, skills, ideas and physical assets provided by their users (both clients and workers). For example, Uber does not heavily invest in cars, but it has been able to expand and scale in 69 countries at an unprecedented pace (within 11 years of its creation) (Uber 2020a). It has 26,900 employees and 5 million drivers, who either own or lease cars, with the majority of them being labelled as self-employed or “driver-partners” (Uber 2020a and 2020b; [Appendix 2](#)). Uber orchestrates its services through its app, which is its “linchpin” (algorithmic management), by matching customers with drivers: its key assets are the network of users (drivers and consumers), data and the brand (Teece 2018a, 43).

Furthermore, cloud infrastructure services allow platform businesses to be virtual and mobile as they operate with intangibles, and their users (clients and workers) can be based anywhere in the world.



## Cloud infrastructure has facilitated the growth of digital platforms.

This distinct feature also creates challenges from a regulatory point of view for two reasons. First, it is always possible for users to disguise their location using virtual personal networks (OECD 2014). Second, when users and platform companies are based in different countries the application of labour and tax laws becomes complicated, as such laws differ across jurisdictions (see sections 5.3.9 and 6.3).

Finally, the rise of digital platforms has created entrepreneurial opportunities for digital technology start-ups and third-party developers to innovate and develop new products, tools, application programs and services on platforms (Miric, Boudreau and Jeppesen 2019), which drives further digital transformation (see section 3.3.2).

Digitalization allows datafication through the collection of massive amounts of data. User data has emerged as one of the most valuable assets for platforms, as it provides a basis on which new products can be built and serves to improve efficiency and productivity. Earlier data-processing methods and software were not adequate to handle large amounts of data, and innovative methods were required for processing such data (Sheriff 2018). Some data-processing methods carried out by humans, such as tagging, classifying, categorizing, cleaning, structuring and organizing, remain relevant, as, despite developments in AI, they cannot be fully automated. Digital labour platforms, such as microtask platforms, emerged due to the failure of AI to classify images, sounds and texts, as human intelligence is required to process such data (Irani 2015). For instance, when Amazon was developing its product catalogues with a view to making it easy for buyers to access them through the search function (a process complicated in particular by duplicate product entries), the solution was to create an internal website that enabled

employees to go through catalogue entries and mark any duplicates when they had some time (Silberman 2015).

The availability of this innovative tool (the internal website) through which tasks could be performed in a quick and efficient manner led Amazon to start Amazon Mechanical Turk (AMT) in 2005, whereby a wide variety of simple data-processing tasks could be done by workers from around the globe in a cost-effective manner (Silberman 2015). For instance, data can be processed in two days by engaging 60,000 workers from the crowd on platforms, instead of hiring hundreds of workers to finish the task in few weeks (Irani 2015). Recognizing the power of the platform to complete tasks at such a rapid pace using a global pool of workers led to the rise in microtask platforms. Such platforms have been instrumental in the processing of data needed by many digital and non-digital companies (see sections 1.4 and 3.3.2).

The outsourcing of work through digital labour platforms has resulted in the creation of an invisible workforce tasked with cleaning, processing and organizing vast amounts of data, often in precarious working conditions (see Chapter 4) to meet the needs of a data-driven digital economy. This outsourcing has allowed firms to benefit from the double advantage of reducing costs and at the same time building data archives which can be used for machine learning and training algorithms for future automation (Rani and Singh 2019). Such invisible and – for all intents and purposes – unpaid work is even more prevalent on taxi platforms, where the drivers, apart from transporting people, are in the process also feeding data into the company database to be used in training algorithms, which then automate the management of the company's operations, such as dispatching drivers or surge pricing (Chen and Qiu 2019). The workers are often unaware that they are doing this “data work”, and they are not compensated for it.

### 1.1.3 Open source innovation

One major contributor to the rise of the digital economy has been the availability of open source platforms for software applications (such as Apache Hadoop, GitHub), which can be accessed by both digital and non-digital firms at zero cost. Open source software platforms are used by a number of digital labour platforms, including Uber and Upwork. For example, GitHub, an open source repository of software, application programs and tools, allows users (firms or developers) to access and customize these programs and tools without having to make any substantial investment of time and money. The availability of tools and programs through open source also provides many platforms with an opportunity to diversify across a range of services or sectors, depending on the demands of the users, in a short time span and with low investment.

Open source platforms and software are increasingly being recognized as working tools for innovation. This is partly because open source software is free to acquire and thus offers an alternative to the spread of software that has either a general-purpose or special licence. Platform companies and large firms work with open source platforms instead of competing with them, as this gives them access to a pool of diverse knowledge and capabilities, which in turn speeds up the innovation process at zero cost (see section 3.1.3; Gawer 2014). For instance, Google opened up its Android patents,<sup>1</sup> and Tesla opened up the company's patent portfolio to external developers for free so that they could innovate and develop tools, programs or software.<sup>2</sup> Open source collaboration is also gaining ground among public sector agencies that are opening up their patents to developers for free: the National Aeronautics and Space Administration of the United States of America, for example, has made hundreds of

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1 For more information, see: <http://techcrunch.com/2015/07/23/google-offers-to-sell-patents-to-startups-to-boost-its-wider-cross-licensing-initiative>.

2 For more information, see: <https://www.digitaltrends.com/cars/good-guy-elon-musk-opens-teslas-patents-gives-free-access-technology/>. This was later followed by other car manufacturers such as Ford, see: <http://www.digitaltrends.com/business/ford-to-open-electric-vehicle-patents-news-pictures/>.

patents available to developers.<sup>3</sup> The existence of open source platforms and software has also encouraged these agencies to facilitate innovation and development by offering open access to their intellectual property to external firms or third-party developers through their application programming interface.

### 1.1.4 Concentration of market power among a few platform companies

Cloud services and computing providers tend to be concentrated among a few large multinational enterprises such as Alibaba, Alphabet (includes Google), Amazon, Apple, Facebook, Microsoft and Tencent. While some of these companies also manufacture products, they are predominantly platform businesses which are able to employ some of the distinct features of the digital economy to create new and extremely efficient ways of facilitating the interaction of large numbers of users, applications and businesses or service providers. They are geographically concentrated in just two countries, China and the United States, and the estimated annual revenue of these seven companies combined for 2019 was about US\$1,010 billion (see figure 1.14 in section 1.5). The concentration of wealth among a few platform companies may in some instances allow them not only to coordinate, steer and manage innovation and development, but also to shape infrastructure development in the digital economy. Their dominant position allows them to determine the boundaries governing the digital

economy and who should participate in it. They use various mechanisms, such as licensing of their intellectual property rights, and technical frameworks,<sup>4</sup> to provide access to cloud services (Teece 2017; Parker, Van Alstyne and Choudary 2016). They also regulate access to the use of platform infrastructure by determining whether they will be more “open” or “closed” (to attract a select group of participants) (Zhao et al. 2019).

The concentration of power among platform companies raises challenges for countries as they shape their economies, particularly when governments and businesses are seeking to establish secure and decent employment for their workers, a situation which primarily affects developing countries. For example, online microtask platforms such as AMT outsource data-processing, clerical and low-end tasks, which are used for training AI, to workers dispersed around the world. Consequently, while these platforms create opportunities to earn an income, the quality of the work created raises some important considerations. The question of quality of work arises not only in terms of remuneration, regularity of work and social protection, but also in terms of the content of the work, as such tasks can be repetitive, low end and mind-numbing, and they are often performed by highly educated workers (see section 4.1.6). As a large proportion of workers in developing countries continue to work in the informal economy, this development trajectory of the digital economy might push highly educated and skilled workers in these countries to pursue work under precarious or informal working conditions and uncertain work arrangements (World Bank 2020), and therefore requires careful policy considerations.

<sup>3</sup> For more information, see: <http://www.nasa.gov/press-release/nasa-offers-licenses-of-patented-technologies-to-start-up-companies>.

<sup>4</sup> The term “technical framework” refers to defining the boundaries where innovation can take place.





## 1.2 Digital platforms: Pervading and penetrating different sectors of the economy

Digitalization is permeating different sectors of the economy, thereby improving efficiency and creating new sources of value. Figure 1.1 provides a landscape of digital platforms, showing that almost all major economic sectors are experiencing penetration. The use of digital platforms in the various sectors of the economy is quite diverse. Platforms can be classified into three broad categories: those that offer digital services or products to individual users, such as search engines or social media; those that facilitate and mediate between different users, such as business-to-business (B2B); and digital labour platforms. While most platforms can be allocated to one of these categories, some “hybrid” platforms provide services across multiple categories.

The penetration of digital platforms is having a profound impact on firms and sectors, as they reorganize markets and work arrangements, affecting competition and challenging regulatory models, thereby altering the rules of the game (Kenney and Zysman 2016). This section provides a glimpse into some of these impacts across the various sectors of the economy.

### 1.2.1 Digital platforms that offer services to individual users

Digital platforms are shaping social and economic exchanges, from social media platforms such as Facebook or TikTok that occupy an increasing role in the socio-economic lives of people around the world, to communication platforms such as Skype, WhatsApp, Viber or Zoom, which are playing a rapidly growing role in maintaining business continuity and remote working during the COVID-19 pandemic and also in people’s personal lives.

Some platforms, such as Google and Facebook, also offer search functions and advertising to users, which reduces their search costs.

In addition, social media platforms such as Facebook are disrupting the advertising sector as they draw on the large amounts of data relating to their 2.8 billion users<sup>5</sup> to enable clients to reach audiences across geographical locations (Fumagalli et al. 2018). The availability of cloud infrastructure is also dramatically transforming the news and media industry. Online news and media platforms are competing fiercely with traditional news outlets, with a significant impact on the latter’s businesses and workers.

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 Digitalization is permeating different sectors of the economy.

There are also some platforms that provide video streaming services to individuals and businesses, as well as serve as social media platforms, such as YouTube, which have not only created opportunities for content creators to earn incomes by posting videos, but are also disrupting the advertising industry. For instance, YouTube generated more than US\$34 billion in advertising revenue over three years (Alexander 2020). However, on social media platforms such as Facebook, YouTube and TikTok, the labour of users posting content who are often not paid or paid very little is vital for generating network effects and revenues. This report does not examine this type of labour.

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<sup>5</sup> As of December 2020, Facebook had 2.8 billion monthly active users. For details, see: <https://investor.fb.com/investor-news/press-release-details/2021/Facebook-Reports-Fourth-Quarter-and-Full-Year-2020-Results/default.aspx>.

► Figure 1.1 Landscape of digital platforms



Digital platforms have facilitated access to a number of products, such as software programs or streamed music, which can be delivered digitally and remotely to consumers and businesses. This has led to a shift from tangible to intangible products, and can potentially lead to unfair competition, as streaming music on Spotify, for example, might not be taxed while an imported CD would be taxed. This can have implications for revenue generated through customs and tariffs, especially for developing countries, as there is currently a moratorium on customs duties regarding electronic transfer of products and services. In this context, there is an ongoing discussion on the World Trade Organization (WTO) digital trade rules: there is no consensus among countries, including developing countries regarding the continuation of the moratorium, with some preferring to end it in order to access revenue that could be used to finance digital infrastructure or other public goods (Rani and Singh 2019; UNCTAD 2018). For instance, countries could use the funds to allocate resources for social protection expenditures which have been squeezed during the COVID-19 crisis, with major implications for the welfare of workers (see section 4.2.5; Behrendt, Nguyen and Rani 2019).

## 1.2.2 Digital platforms facilitating and mediating exchange between users

The availability of cloud infrastructure has led to a rise in B2B, business-to-consumers (B2C) and digital labour platform business models (see figure 1.1). The rise of such platforms is reshaping the business landscape and changing the boundaries of the firm, while also creating competition and opportunities for traditional businesses.

In the B2B and B2C domain, the online retail sector has seen a prominent rise, which has led to a disruption of the traditional retail sector with a significant impact on both retail stores and the workers they employ. Penetration of platforms into other sectors, such as manufacturing, agriculture and finance, is at a comparatively early stage and the implications of these platforms

for both businesses and workers are not yet as profound as in the retail sector. The past few years have also observed a rise in hybrid platforms which offer both labour and other services such as e-commerce and payments.

**Retail platforms.** The most successful B2B and B2C models are in the online retail sector. The most successful examples of these models include Alibaba, Amazon and Flipkart. The global retail e-commerce market size in 2019 was valued at US\$4.25 trillion (Grand View Research 2020). The e-commerce platforms compete with small retail stores and offer better pricing, as they are able to reduce transaction costs and costs related to renting stores and hiring retail personnel. The decline in retail businesses, exacerbated by the shutdown associated with the COVID-19 pandemic, has the potential to displace thousands of jobs in physical retail stores. A study conducted in Nordic countries shows that e-commerce revenues tripled over the period 2008 to 2018, and there was a 27 per cent increase in revenue in the first quarter of 2020 (Rolandsson 2020).

The rise of these platforms and new digital technologies is also affecting retail employment; in Nordic countries its share in total employment declined between 2009 and 2019 (Rolandsson 2020). It has also created challenges regarding the quality of the new jobs that have been generated, particularly those associated with logistics (such as warehouse and delivery workers for Amazon), where much of the employment growth has been in last-mile delivery and as low-paid jobs in warehouses (MIT 2020). Many of the delivery workers are being classified as independent contractors and as such find themselves outside the scope of employment protection, with irregular and low pay, and no protection in case of accidents at work (De Stefano 2019).

Several retail platforms have enabled SMEs and individual entrepreneurs to access a larger customer base by selling their products through the platforms. For example, 60 per cent of the products sold on Amazon are from third-party sellers (1.7 million SMEs) (Bezos 2020). While enabling access to a larger customer base, retail platforms also tend to charge different types of

fees to third-party sellers for every unit sold. In 2018, it was estimated that third-party sellers paid Amazon US\$39.7 billion in fees;<sup>6</sup> its referral fee ranges from 6 per cent (personal computers) to 45 per cent (Amazon device accessories).<sup>7</sup> The high fees charged by the platform have had a major impact on the earnings of these small businesses during the COVID-19 pandemic, many of which had already been struggling due to the slowdown of the economy.

Many platforms have their own range of products, which compete with those from third-party sellers. However, the scale of the data that platforms are able to gather and analyse in making decisions about products to be sold, or their price, or about attracting users or customers, has allowed them to consolidate their position in the market. The pricing decisions based on such data can therefore have a large impact on third-party sellers on the platform as well as traditional retail stores, due to information asymmetry. The competition faced by enterprises, particularly SMEs, from platforms both within and outside the platform marketplace, has started to come under scrutiny (see section 3.4).

**Manufacturing platforms.** The manufacturing sector is progressively undergoing a digital transformation, whereby the supplier relationship is mediated through digital business platforms such as Laserhub, Tao-factory or Xometry. Some platforms, such as Tao-factory, which operates largely in garment and light industries, connect enterprises with consumers or customers on e-commerce platforms, such as Taobao. Once a buyer on the e-commerce platform places the order, the value chain is set in motion, and the order is manufactured and delivered within seven to nine days (Butollo 2020). Other platforms, such as Laserhub and Xometry, connect suppliers with material processing industries (Butollo and Schneidmesser, forthcoming). The platform networks are based on geographical proximity, and such developments can compete with traditional business and supply chains as they can respond to

individual customer needs in a more flexible and timely manner, and also provide factory-related analytics rapidly for improved efficiency. This might also have implications for working conditions as workers may have to work longer hours to meet the delivery deadlines.

**Agriculture platforms.** The agricultural sector has seen a rise in the number of farm management software tools and technologies, such as Agricolus, for providing market solutions and improving productivity. Use of the Internet of Things with sensors to collect real-time data and integrated monitoring systems to create optimal conditions for sowing, watering, fertilizing and harvesting is becoming increasingly widespread (Jayne, Yeboah and Henry 2017). These tools, along with big data analytics, help in optimizing agricultural operations through precision farming, or in improving crop yields and environmental management, among other applications. Other digital platforms, such as Agri Marketplace, are connecting farmers with markets. Although the opportunities and challenges arising from the use of these digital tools and platforms in the agricultural sector are not yet well understood, they are considered to have the potential to bring benefits to smallholders, particularly as a result of improved planting and crop rotation and through access to wider markets in the years to come.

**Financial platforms.** Another sector where significant transformations are taking place is the financial sector, which has become increasingly diverse and is competing with the traditional banking sector. For instance, the entry of companies such as Apple, Alphabet (includes Google) and Ant Group into the financial services sector, and the rise of payment platforms such as PayPal, Paytm, Venmo or TransferWise, are having a notable impact on the traditional banking sector (N.L. Johnson 2020). Many of the large companies in particular are able to leverage their existing relationship with customers and their data and to cross-subsidize their new offerings. Further innovation and expansion in new financial services

6 For more information, see: <https://www.marketplacepulse.com/marketplaces-year-in-review-2019#google>.

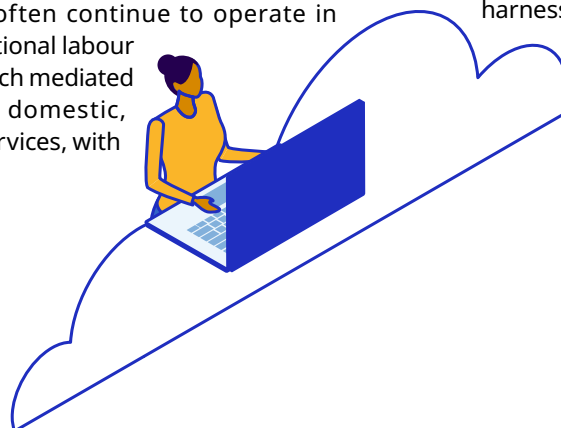
7 For more information, see: <https://sell.amazon.com/pricing.html#referral-fees>.

have the potential for financial inclusion of those engaged in the informal economy in developing countries. This trend could result in innovations in traditional banking operations in response to the competition due to digital transformation, and could lead to scaling down of employment.

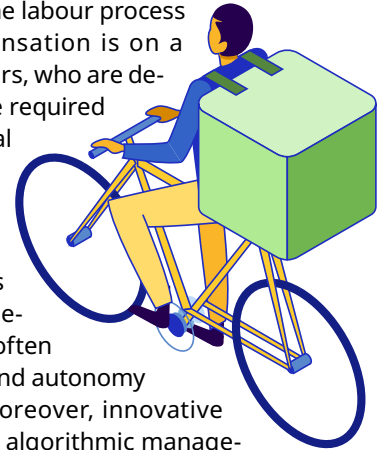
### 1.2.3 Digital labour platforms mediating work

Digital labour platforms are the predominant form of platform connecting workers with businesses and clients, and have significant implications for the world of work. It is these platforms that are the main focus of this report. Currently, there are two main types of digital labour platform: *online web-based platforms*, where tasks are performed online and remotely by workers; and *location-based platforms*, where tasks are performed at a specified physical location by individuals (see figure 1.1). Online web-based platforms include microtask, freelance, contest-based, competitive programming and medical consultation platforms, while location-based platforms include those offering taxi, delivery, domestic, care and home services. Much attention has been given in recent years to location-based platforms such as Deliveroo, Glovo and Uber, especially in developed countries. Online web-based platforms are also gaining popularity among businesses. Many freelance and competitive programming platforms, such as Upwork and Topcoder, though less well-known, have been operating for over two decades.

*Online web-based labour platforms* offer varied services to both individual customers and business clients. For instance, freelance and contest-based platforms enable workers to connect with clients for specific tasks ranging from translation to graphic design, while medical consultation platforms allow individuals to access medical advice from doctors online. Through the use of technology, *location-based platforms* mediate various services, such as taxi and delivery services, which often continue to operate in parallel with traditional labour markets. Other such mediated services include domestic, care and home services, with



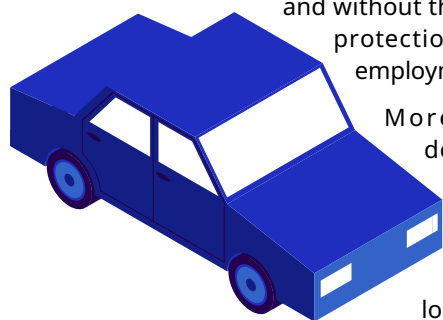
individual workers providing labour services at the homes of individual customers. Digital labour platforms are enabling the reorganization of activities that have conventionally relied on traditional employment relationships into work performed by independent contractors or the self-employed. Work is often performed on an on-demand basis, wherein the logic of the “just-in-time” inventory system is applied to the labour process (Vallas 2018, 49). Compensation is on a piece-rate basis, and workers, who are defined as self-employed, are required to provide their own capital equipment (Stanford 2017; Drahokoupil and Fabo 2016).



Although platform workers are usually classified as independent contractors, they often do not have the freedom and autonomy to organize their work. Moreover, innovative platform practices such as algorithmic management are used to allocate work and manage, supervise and reward workers (see section 4.3.1). Digital labour platforms have tremendous control over the organization of work and workers’ compensation, while “still claiming to be only an intermediary” (Kenney and Zysman 2016, 62). Such outcomes of technological advances represent a return to the past as the workers are engaged as casual labour and paid on a piece-rate basis, which adds to the growing informal or non-standard workforce in developing and developed countries alike. This situation presents new challenges to traditional work arrangements and the standard employment relationship (see section 5.3.10), as well as exacerbating existing challenges, notably the use of non-standard forms of work.

A number of digital labour platforms compete with businesses in traditional sectors, relying on data and competitive pricing. Location-based platforms, such as taxi platforms, have disrupted established transportation business models by harnessing data and algorithms to match passengers with drivers in real time (Clewlow and Mishra 2017). Uber, for example, entered a tightly regulated taxi market in

the United States and challenged traditional taxi drivers by offering low-cost subsidized fares and allowing individuals who were not licensed taxi drivers to offer rides (Horan 2019). Furthermore, Uber's entry into and surge in the market have been funded extensively by venture capital funds despite the losses incurred since Uber's inception (see section 1.5). Similarly, freelance platforms, such as Freelancer or Zhubajie (ZBJ), are competing with traditional employment agencies by matching tasks with workers for businesses at a lower cost and without the need to abide by the protections associated with an employment relationship.



Moreover, a trend has developed towards outsourcing work, both low-skilled and high-skilled, especially as traditional businesses look to digital labour platforms and digital tools to meet their needs for human resources. These platforms host workers from around the world, enabling businesses to complete their tasks at a faster pace and lower price than if the tasks were performed on site. In many instances, the work is outsourced on these platforms by businesses in the global North, and performed by workers in the global South. This is illustrated by data from 200,000 projects collected on a major freelance platform for the period January to December 2019.<sup>8</sup> Figure 1.2 displays whether the demand for work comes from within the country or from abroad, and the size of the bubble shows the inflow of trade (volume of work) in millions of US dollars coming into the country. The data collected shows that the demand for work largely originates from Australia, Canada, Germany, New Zealand, the United Kingdom of Great Britain and Northern Ireland, and the United States. A large proportion of this work is performed by workers in developing countries, particularly in India (US\$26 million), which accounts for almost 20 per cent of the total

## Work is outsourced on these platforms by businesses in the global North, and performed by workers in the global South.

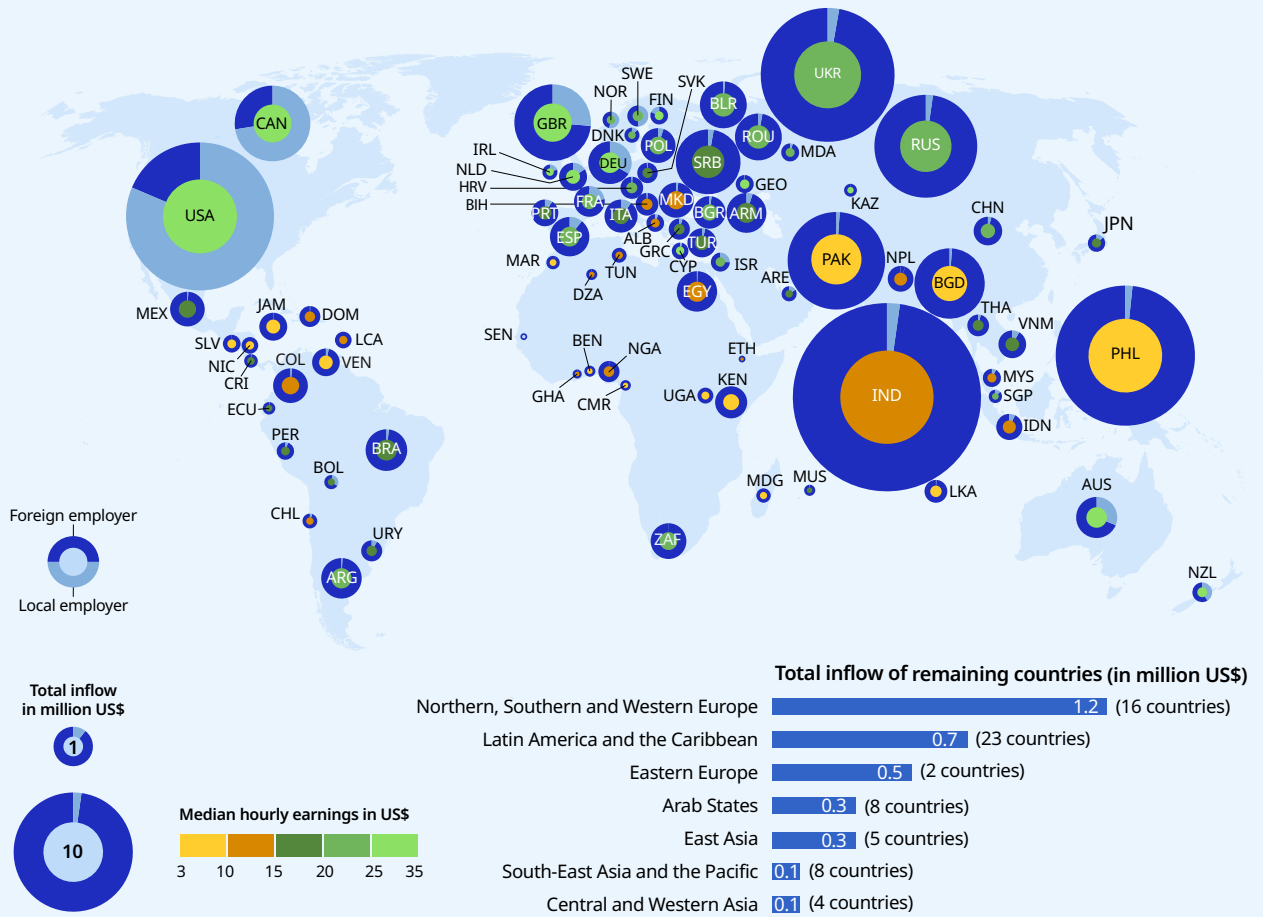
market, followed by the Philippines (US\$16 million) and Ukraine (US\$13 million). Overall, the picture of outsourcing work through digital platforms has not changed compared to 2013 (Graham et al. 2017), while the volume of transactions has increased and almost all countries now have a higher share of domestic employers outsourcing tasks on these platforms. Hence, online labour markets are more diffused around the globe.

By engaging with platform workers in locations with lower price and wage levels, businesses can further reduce their costs, while providing employment opportunities. The median hourly wages on the platform, which is the inner circle illustrated in figure 1.2, are clearly higher in developed countries than in developing countries. However, the geographical location where the tasks are completed is related not only to the price level but also to skill requirements, both technical and language, as well as the availability of IT infrastructure. For instance, among developing countries a much larger share of tasks is completed by workers in South Asia and East Asia compared to Central Asia and sub-Saharan Africa. This is despite low wage levels in the latter regions and can be attributed to the availability of the requisite IT and other skills and infrastructure in the former regions. As a result, a number of developing countries are investing in the development of IT infrastructure in order to be able to benefit from this outsourcing model. In such a context, it is of critical importance to analyse the opportunities and challenges arising from digital labour platforms.

This report focuses on the rise of digital labour platforms to gain a more nuanced and comprehensive

<sup>8</sup> In order to map the countries where online work is performed, transaction data for 2019 was obtained from one of the largest online freelance platforms. This platform offers services across a range of occupations. The anonymized transaction data was obtained for the period January to December 2019 using the application programming interface; this is a sample of all projects on the platform, with a total volume of US\$135 million.

► Figure 1.2 Outsourcing of tasks on a freelance platform across countries, inflow of work and earnings, 2019



**Note:** For country codes see [Appendix 1](#).

**Source:** Data collected by Fabian Braesemann, Oxford Internet Institute, iLabour Project.

understanding of the implications of their rapid growth for both businesses and the workers whose work is mediated through such platforms. The various types of digital labour platforms examined in this report include: freelance, contest-based, competitive programming and microtask platforms, which are among the leading online web-based platforms facilitating labour exchanges between workers and clients (including businesses), covering multiple forms of activities, skills and tasks. Location-based platforms include

taxi and delivery services, which not only comprise some of the largest and most well-funded labour platform companies globally, but also mediate work for a large number of workers. Some of these platforms have had a far-reaching social and economic impact in many countries, at times severely disrupting long-standing traditional sectors. The report makes an attempt to understand the nuances of these diverse types of digital labour platform, and the emerging opportunities and challenges for the world of work today.



## 1.3 Digital labour platforms: Estimates of the number of platforms and workers


The traditional statistical methods used in enterprise and worker surveys do not fully capture these types of digital labour platforms or the number of people whose work is mediated by them and their working conditions. This raises a huge challenge with regard to estimating the number of workers involved and the number of digital platforms in operation as well as the extent of their penetration. This section presents some estimates of and trends in relation to the number of active digital labour platforms, using new online databases, and some estimates of the numbers of workers engaged or mediated through these platforms, using various sources. Finally, based on data from major English-speaking online web-based platforms, certain trends in demand for work and the supply of labour are also presented.

### 1.3.1 Number of digital labour platforms

The number of digital labour platforms, both online web-based and location-based, has grown rapidly over the past decade. Focusing on online web-based platforms (microtask, freelance and competitive programming) and location-based platforms in the taxi and delivery sector, globally, there were at least 777 active platforms<sup>9</sup> operating in January 2021 (based on data from the Crunchbase database;<sup>10</sup> see figure 1.3). The number of platforms in the delivery sector is the highest (383), followed by online web-based platforms (283), taxi sector (106) and there are five hybrid platforms which provide varied types of services such as taxi, delivery and e-commerce

services. Among the online web-based platforms, the majority are freelance platforms (181), with a lower number of microtask (46), contest-based (37) and competitive programming (19) platforms.

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 The number of digital labour platforms has grown rapidly over the past decade.

Online web-based platforms, such as Elance (today Upwork, after its merger with oDesk) (1999) and Topcoder (2001), were pioneers in setting up crowd-based digital labour platforms as a business model. Whereas Elance tried to build a global marketplace to connect freelancers with employers, Topcoder tried to build a “community of programmers” who could re-use basic computer program components and find innovative solutions to software problems, thus saving clients time and money (Lakhani, Garvin and Lonstein 2012, 2). The notion of using “crowdworkers”, which gained momentum from the beginning of the 2000s, led to the growth of online web-based platforms. The global recession of 2008–09 fostered the development of online labour platforms across different regions, as businesses came to rely on them for outsourcing various tasks (see figure 1.3).

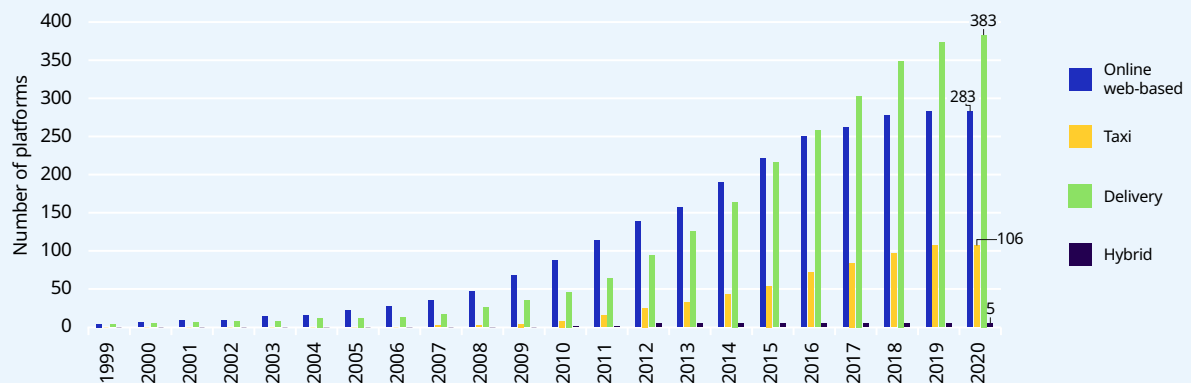
The global recession of 2008–09 also saw the rise of taxi and delivery platforms as an alternative

<sup>9</sup> This figure would be much higher if all types of digital labour platforms were included, as in figure 1.1.

<sup>10</sup> Crunchbase is a database that contains business information about private and public companies and start-ups. It obtains its data in four ways: the venture program, machine learning, an in-house data team, and the Crunchbase community. The venture program allows investors to keep their firm's Crunchbase profile up to date and provides members with free access to company data on Crunchbase and other discounts. Members of the public can submit information to the Crunchbase database. The list of companies and start-ups in the database provides data on their location, funding history, investment activities, acquisition trends and number of employees. It covers platforms from 98 countries around the globe. As it is self-reporting, it is likely that some active platforms, especially from developing countries, are not listed in the database.



► **Figure 1.3** Number of active digital labour platforms globally, selected categories



**Note:** Only currently active platforms are included.

**Source:** Crunchbase database.

to traditional taxi and delivery services: by using technology, clients could access these services at a competitive price, with the platforms also providing work opportunities. These platforms gained popularity among many different users and grew rapidly between 2012 and 2018 (see figure 1.3). During this period, activities on delivery platforms expanded from food delivery services to grocery, courier services and more. The past five years have seen a growth in hybrid platforms such as Grab and Jumia which offer a wide range of labour and other services, and some of the taxi and delivery platforms are also shifting towards a hybrid model.

### 1.3.2 Number of workers engaged on digital labour platforms

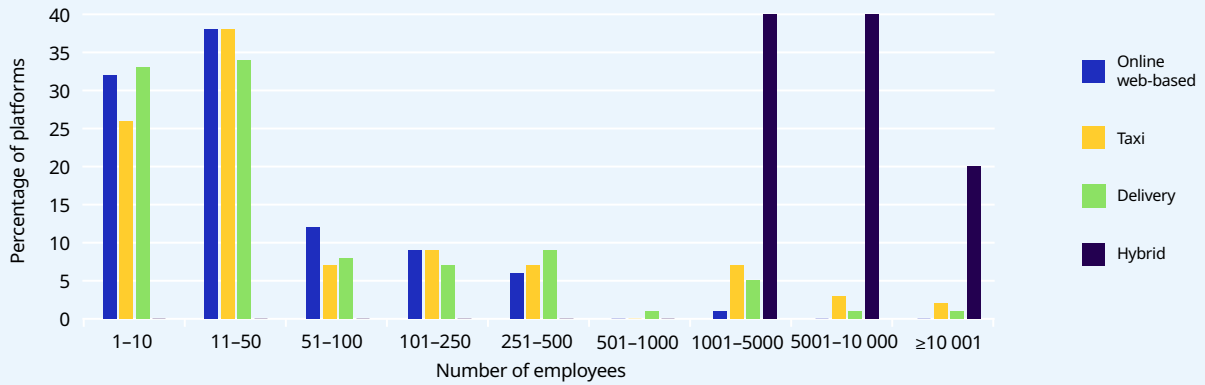
Digital labour platforms offer two types of work relationships: workers who are directly hired by the platforms (internal employment), and workers whose engagement and work are mediated through the platforms (external employment) (ILO, EU and OECD, forthcoming). Numbers in the latter category are particularly challenging to estimate due to the paucity of data, as most platforms do not disclose the number of active

workers who undertake platform work. Despite the absence of such transparency, an attempt is made here to provide estimates based on surveys conducted by researchers and statistical offices. This section also examines the issue of excess supply of labour on online web-based platforms.

#### Workers directly hired by digital labour platforms

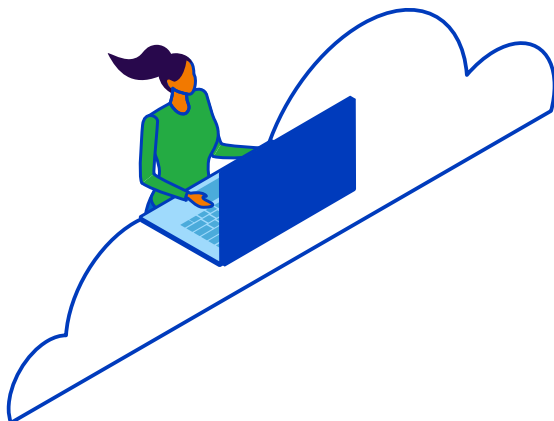
Data on the number of employees directly hired by digital labour platforms is available for 749 platforms (96 per cent) of the 777 platforms, either from annual reports or databases (Crunchbase and Owler). These employees perform tasks related to the creation, maintenance and overall functioning of the platform, and are hired on a full-time or part-time basis, or on a fixed-term basis (Kenney and Zysman 2018a). Platforms also hire freelancers for the development and maintenance of the platform. For example, Upwork, apart from employing 570 employees globally, also “engaged over 1,200 freelancers to provide services ... on a variety of internal projects” in 2019 (Upwork 2019, 4). Information on the engagement of freelancers by platforms is difficult to capture unless platform companies declare it in their annual reports.

► **Figure 1.4 Global share of digital labour platforms, by number of employees, January 2021**



Source: Crunchbase database.

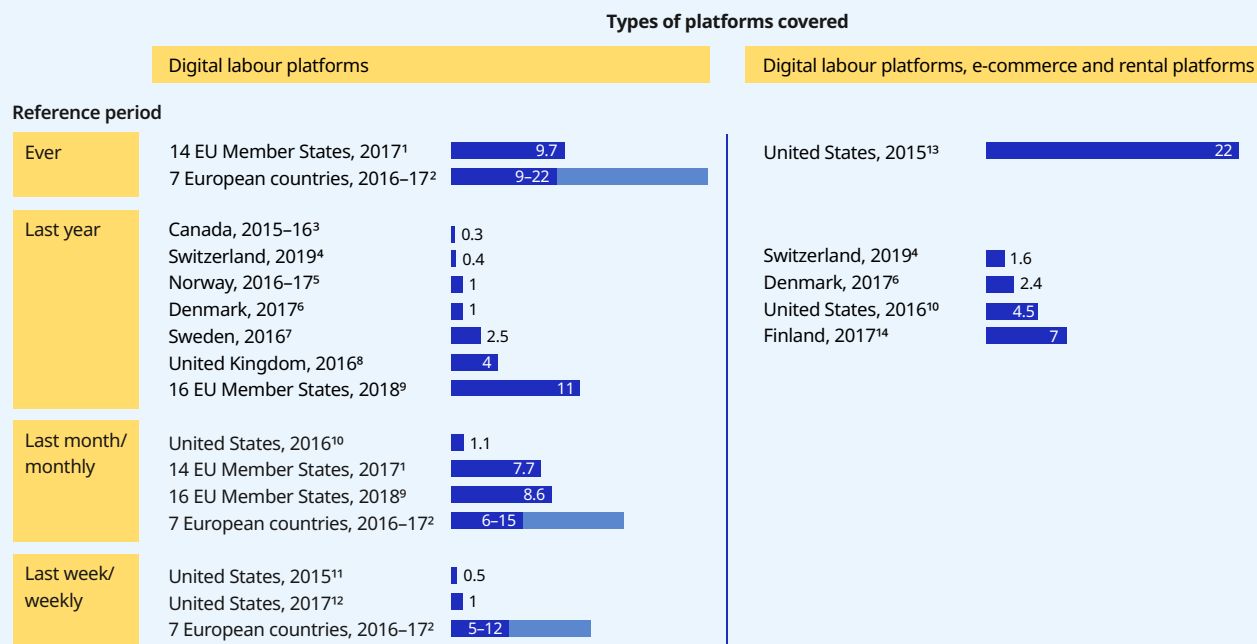
The analysis of the available data shows that in terms of employment, many online web-based and location-based platforms are micro and small enterprises, directly employing either fewer than 10 employees or 11–50 employees (see figure 1.4). Only a few delivery and taxi platforms have more than 1,000 employees. Uber is the largest employer among taxi platforms (26,900 employees; mainly highly skilled professionals such as lawyers, marketing experts, software engineers and other professionals) (Uber 2020a). It also has taxi drivers who are full-time employees (Kenney and Zysman 2018a). In the delivery sector, a number of platforms, including Meituan, Delivery Hero, Swiggy and Ele.me, have more than 10,000 employees. These large entities, apart from hiring employees for managing and running the platforms, also hire delivery workers on a full-time or part-time basis. This strategy allows them to ensure a reliable service as they capture market share, and they change their labour practices once they achieve their objective (see section 2.3.1).



### Workers whose engagement and work are mediated through digital labour platforms: Estimates based on surveys

The lack of transparency on the part of platforms in sharing data has led researchers and statistical offices to use surveys to estimate the number of workers whose work is mediated by the platforms. The research shows large variations in the estimates due to definitional and methodological differences. On the definitional differences, surveys have used broad or narrow definitions of the types of platform covered and the reference period in question. In terms of types of platform, the broad definitions used cover digital labour platforms, e-commerce, rental and payment platforms, while narrower definitions are restricted to digital labour platforms (both online web-based and location-based). Concerning the reference period, broad definitions include individuals who have performed tasks or have ever worked or earned money on a platform, or did so during the previous year, while narrow definitions are restricted to whether they have worked on a platform in the previous month or week, or do so on a monthly or weekly basis. On

► **Figure 1.5 Estimates of workers engaged on digital platforms based on surveys (percentage of adult population)**



<sup>1</sup> Pesole et al. (2018); <sup>2</sup> Huws et al. (2017); <sup>3</sup> Canada, Statcan (2017); <sup>4</sup> Switzerland FSO (2020); <sup>5</sup> Alsos et al. (2017); <sup>6</sup> Ilsøe and Madsen (2017); <sup>7</sup> Sweden SOU (2017); <sup>8</sup> CIPD (2017); <sup>9</sup> Urzi Brancati, Pesole and Fernández Macías (2020); <sup>10</sup> Farrell, Greig and Hamoudi (2018); <sup>11</sup> Katz and Krueger (2016); <sup>12</sup> United States BLS (2018); <sup>13</sup> Burson-Marsteller, Aspen Institute and *Time* (2016); <sup>14</sup> Statistics Finland (SF) (2018).

**Source:** ILO compilation based on the above sources.

the methodological differences, the surveys follow either an income-based or a job-based approach. An additional definitional difficulty relates to having a clear understanding of the definition of “platform” among the respondents.

Using a very broad definition, estimates indicate that 22 per cent of the working-age population in the United States have offered some kind of good or service using a digital platform, and about one third of them also reported earning at least 40 per cent of their monthly income from platform work (see figure 1.5; see also [Appendix 1](#), table A1.2). However, the estimates in other countries range between 1.6 per cent (Switzerland) and 7 per cent (Finland) if the past year is used as the reference period. Focusing more narrowly on having ever worked or earned income only on digital labour platforms, the estimates vary between 9 and 22 per cent for selected European countries. If the time period is narrowed down to the past year, estimates range between 0.3 per cent (Canada) and 11 per cent (16 European Union (EU) Member

States). When the time period is further narrowed down to the past month, then the estimate of workers engaged on digital labour platforms in these 16 EU Member States declines to 8.6 per cent of the adult population. Narrowing down to the previous week, the estimates show that the proportion of workers who are engaged on digital labour platforms varies between 0.5 per cent in the United States and 12 per cent in selected European countries.

Some surveys have also captured the proportion of the population that uses digital services, covering digital labour, e-commerce and rental platforms in Canada and the United States (see [Appendix 1](#), table A1.2). The findings in the United States show that about 42 per cent of the adult population has purchased or used one of the services (Burson-Marsteller, Aspen Institute and *Time* 2016). The Canadian labour force survey also captured the proportion of the adult population that has used taxi or accommodation services, which amounted to 9.5 per cent (Canada, Statcan 2017).

## Workers whose work is mediated through online web-based platforms: Estimates based on data available on platforms

Information on the number of workers registered on various platforms can be found on the websites of the platforms themselves (see table 1.1). Not all registered workers are active and able to access tasks and work on a regular basis, however, which results in an overestimation of those numbers. Workers may also be registered on multiple platforms and thus possibly be counted twice, which makes it difficult to estimate the number of workers who depend on platforms to earn a living.

A recent study has attempted to collect and annotate publicly accessible data on freelance and contest-based platforms (Pesole and Rani, forthcoming). Data was retrieved, whenever technically feasible, from the online interface (website or application) of five freelance and contest-based platforms (see table 1.1). The data obtained relates to September 2020 and shows that Guru has about 1 million registered workers, while on the other four platforms the number ranges between 42,000 and 126,000 workers.

The proportion of active workers on these platforms is measured either by the number of projects completed or by the income earned since their registration on the platform, as a proxy. About one third of registered workers have completed at least one project successfully on these platforms (PeoplePerHour, 99designs and Workana). If the threshold is increased to ten projects, considering workers having earned a reasonable amount of income from the platform, then the share of active workers drops to 10 per cent or less.

On Freelancer and Guru, the number of active workers was captured using incomes earned from these platforms. According to data retrieved on Freelancer, 95,813 workers were registered on the platform, and while a large proportion of them (73 per cent) had earned some income, only 27 per cent had earned more than US\$1,000 (see table 1.1). On Guru, meanwhile, out of 1.05 million registered workers, only 0.5 per cent had earned any income and 0.1 per cent had earned more than US\$1,000. The large differences in the proportion of active users on various platforms could be partly due to some platforms, for instance Freelancer, charging workers a fee for maintaining their inactive account (see table 2.1), while platforms such

► **Table 1.1** Number of registered and active workers on selected digital labour platforms, September 2020

	Number of registered workers	Active or successful workers		Oversupply of workers (%)
		At least one project/ more than US\$1	More than 10 projects/ more than US\$1000	
PeoplePerHour*	126475	29143 (23%)	10798 (9%)	91.0
99designs*	42781	15794 (37%)	4271 (10%)	90.0
Workana*	95600	26312 (28%)	4820 (5%)	95.0
Freelancer**	95813	69993 (73%)	26195 (27%)	73.0
Guru**	1048575	4862 (0.5%)	1385 (0.1%)	99.9

\* Refers to active workers based on completed projects. \*\*Refers to active workers based on income earned.

**Note:** "Oversupply" is defined as the difference between registered and active workers (more than 10 projects/more than US\$1000 earned) on the platform. Figures in parentheses are percentages of total registered workers.

**Source:** Pesole and Rani (forthcoming).

as Guru do not charge membership or basic fees and may allow workers to have accounts even if they are inactive. The different approaches and strategies used by the platforms make it difficult to provide any reliable estimates of workers whose work is mediated through these platforms on the sole basis of information available on registered workers.

Overall, the lack of common definition and methodological approaches, as well as lack of transparency on the part of the platforms are an obstacle to estimating the number of workers whose work is mediated through digital labour platforms. This calls for digital labour platforms to be transparent and disclose the number of active workers whose work is mediated through them.

### 1.3.3 Trends in labour demand and supply on selected online web-based platforms

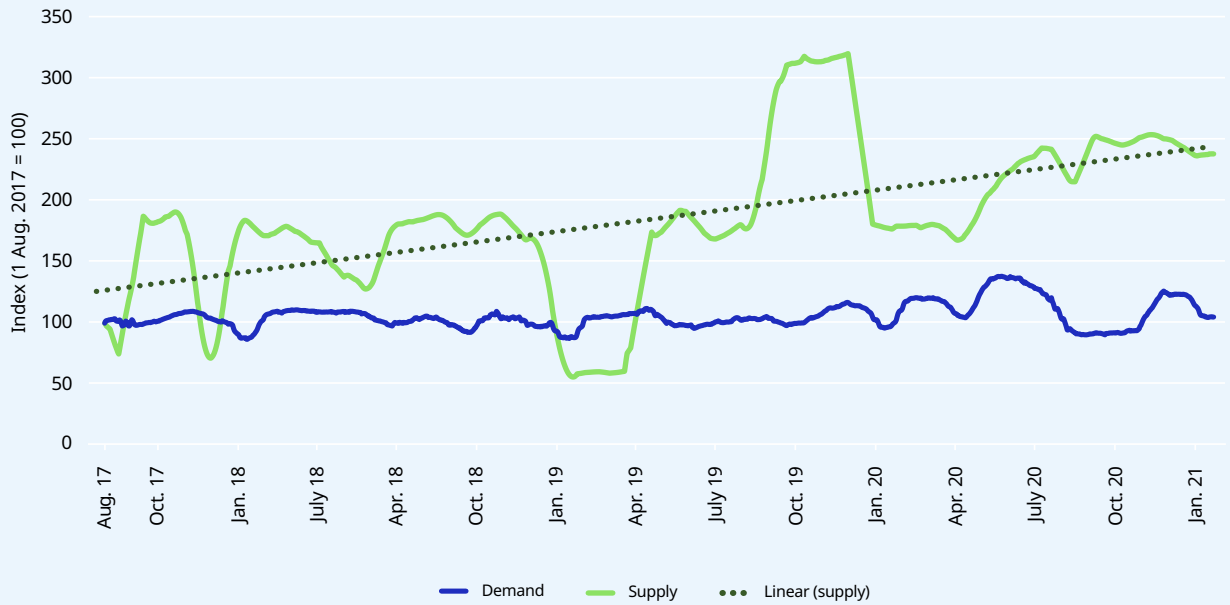
Data tracked on the four largest English-language online web-based platforms shows that the number of registered workers on these platforms has been increasing since 2017 (see figure 1.6). This data has been collected by researchers at the Oxford Internet Institute since 2016 and represents at least 70 per cent of the market traffic for work mediated through online web-based platforms and involving workers and requesters from 105 countries (Kässi and Lehdonvirta 2018). The data on *labour supply* captures the number of workers registered on these platforms (though not necessarily active), and *labour demand* captures the number of public projects and tasks that are posted by clients. This data has been used to construct the Online Labour Index (OLI), which measures the use of online labour platforms “over time and across countries and occupations” (Kässi and Lehdonvirta 2018, 241).<sup>11</sup>

There has been an increase in both labour demand and supply for such work on online web-based platforms between 2017 and 2020. The onset of the COVID-19 pandemic and the resultant switch to remote work and teleworking have led to an increase in demand for such work from mid-April to June 2020, unlike previous years. The data shows that supply has been rising faster than demand, including during the COVID-19 crisis (see figure 1.6). This indicates that while it may be easy to register as a worker on a platform, being able to receive work and earn a substantial amount of income can be quite difficult, especially since workers have to compete with one another globally to obtain the tasks posted on platforms. The excess supply of labour on platforms can also be deduced from table 1.1, which shows that more than 90 per cent of the workers on some platforms are unable to find projects to work on or earn an income. This is not specific to freelance and contest-based platforms; it can also be observed on microtask platforms where the number of registered users is far higher than the number of tasks posted, which results in competition for tasks even when the remuneration for performing the tasks is low (Dube et al. 2020).

Some researchers have analysed AMT, a microtask platform, to show that the excess supply of labour and the monopsony among platforms do not encourage businesses to price their tasks at a higher rate and allow them to fix rates convenient to them (Dube et al. 2020; Kingsley, Gray and Suri 2015). In fact, this trend impacts on the distributional gains on these platforms since it has a considerable effect on wages, “with workers paid less than 13 per cent of their productivity” (Dube et al. 2020, 44). Some platforms have recently changed their strategies to address the excess supply of labour by offering membership or subscription plans and charging additional fees so that workers have better opportunities to access tasks on the platform (see section 2.2 for details).

<sup>11</sup> The index is based on tracking all projects and tasks posted on five platforms (Freelancer, Guru, AMT, PeoplePerHour and Upwork). For details about the methodology used to construct the index, see Kässi and Lehdonvirta (2018).

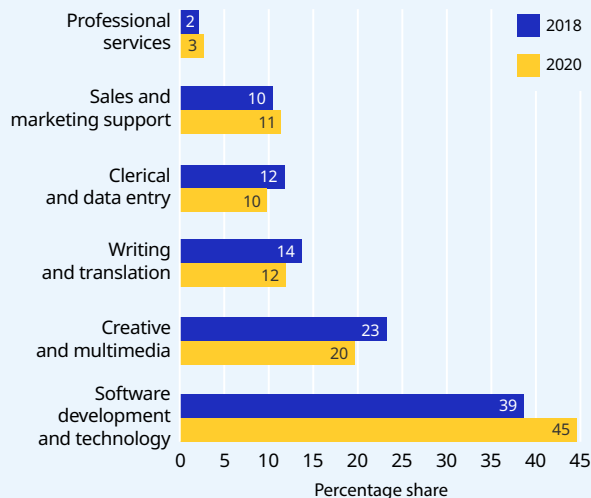
► **Figure 1.6 Online global labour supply and demand on major online web-based platforms, 2017-21**



**Note:** Labour supply is captured from four platforms (Fiverr, Freelancer, Guru and PeoplePerHour). Labour demand is captured from five platforms (Freelancer, Guru, AMT, PeoplePerHour and Upwork). The data is retrieved every 24 hours from each platform.

**Source:** Online Labour Observatory (iLabour Project, Oxford Internet Institute and ILO).

► **Figure 1.7 Global demand for labour across occupational categories on five major online web-based platforms, 2018 and 2020**



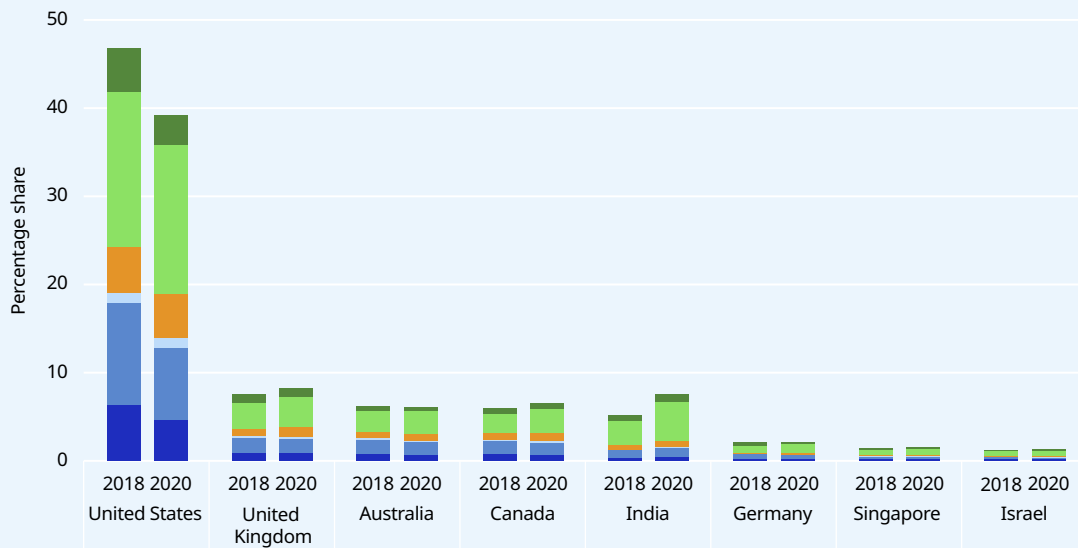
**Source:** As for figure 1.6.

### Demand for and supply of labour across occupations

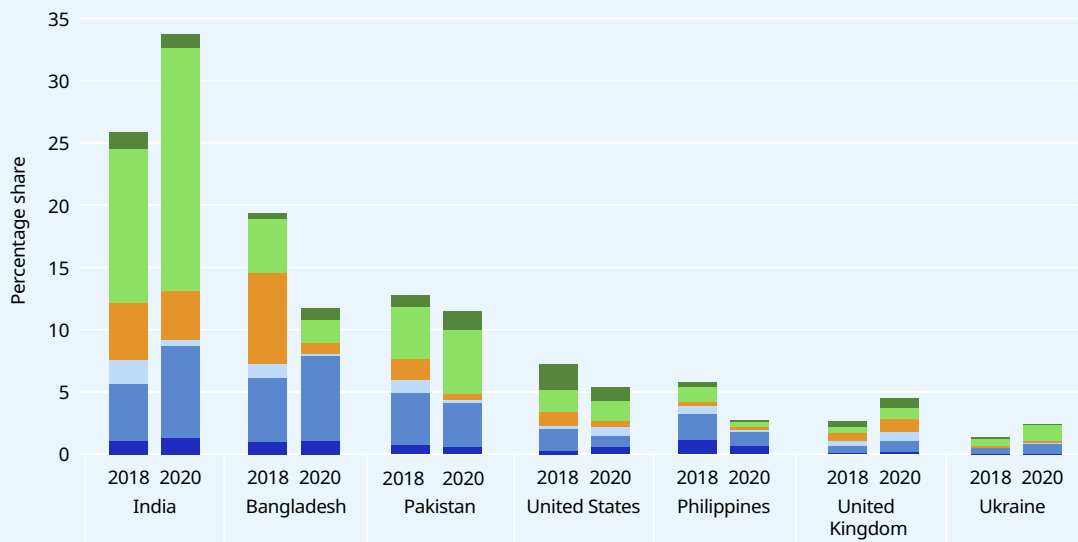
The tasks performed on these platforms can be classified into the following occupational categories: software development and technology; creative and multimedia; writing and translation; clerical and data entry; sales and marketing support; and professional services. Globally, a large proportion of tasks are completed in the field of software development and technology, whose share increased from 39 per cent to 45 per cent between 2018 and 2020 (see figure 1.7). Professional, and sales and marketing services also gained in importance, whereas occupations such as creative and multimedia, writing and translation, and clerical and data entry declined between 2018 and 2020.

► **Figure 1.8 Distribution of global labour supply and demand on major online web-based platforms, by country and occupational category, 2018 and 2020**

(a) Online labour demand



(b) Online labour supply



Clerical and data entry
  Professional services
  Software development and technology

Creative and multimedia
  Sales and marketing support
  Writing and translation

Source: As for figure 1.6.

The clients who demand such work are largely based in developed countries, with four of the top five countries belonging to this group (see figure 1.8a). Globally, in 2020 about 40 per cent of the demand for such work was from clients based in the United States. Compared to 2018, however, the share of demand from the United States for such work has declined while that from Australia, Canada, Germany, India and the United Kingdom has increased. The share of tasks or projects posted by clients in these countries remains comparatively small. The demand for such work from clients in Europe, excluding the United Kingdom, represents only about 16 per cent of the total. Among the countries in Asia, about 8 per cent of the global demand for such work comes from clients based in India, while the share of other Asian countries is very small (1–2 per cent). The presence of clients from Africa and the Middle East on these platforms is even smaller.

The disaggregation of demand for work by occupation and by country shows that software development and technology are the most sought-after occupations on these platforms across countries (see figure 1.8a). The share of demand in this field has increased worldwide between 2018 and 2020, with higher demand from clients in India compared to other countries. The share of demand for creative and multimedia, clerical and data entry, and writing and translation has declined in most countries, the largest decline being observed in the United States. As these recent trends relate to the period when the global economy is experiencing the effects of the COVID-19 crisis, the decline in the demand for such tasks may be due to the uncertainty caused by the pandemic.

In contrast to the demand for work, the supply of labour on these platforms originates mainly from a number of developing countries, in particular Bangladesh, India, Pakistan, the Philippines and Ukraine, apart from the United Kingdom and the United States (see figure 1.8b). Workers from India are the largest suppliers of global labour; India's share of total supply rose by about 8 percentage points between 2018 and 2020, while it declined in other developing countries, except Ukraine. Meanwhile, the share of the supply of labour

from the United States has declined over the same period, while that from the United Kingdom has increased.

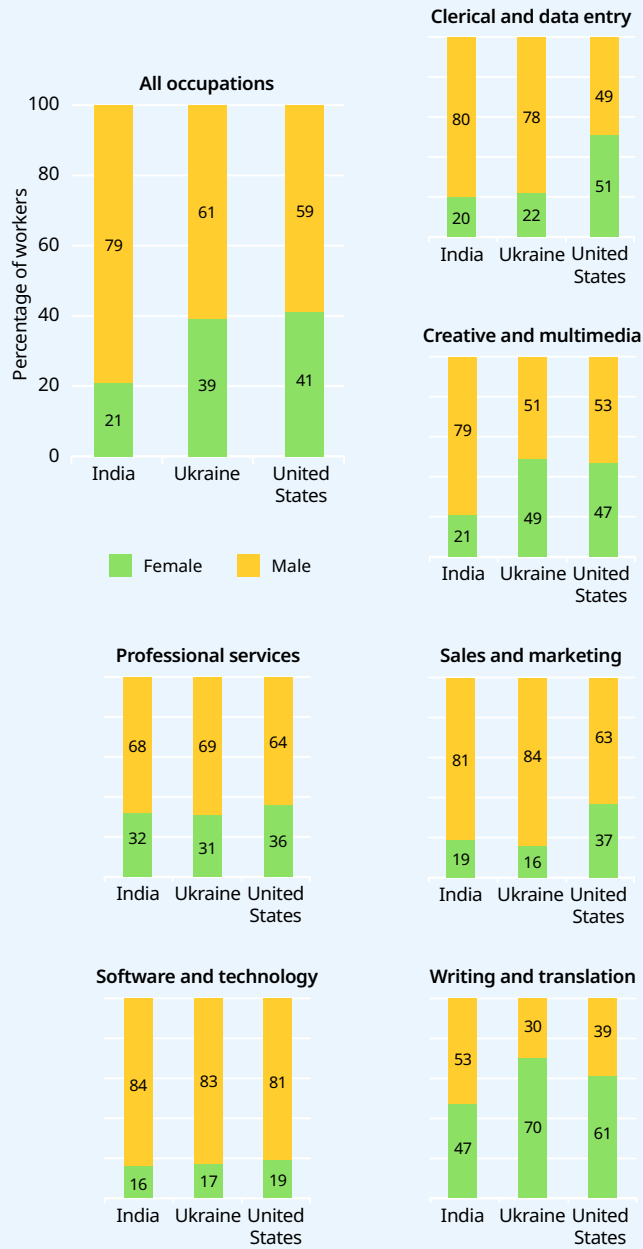
Given the large, highly educated English-speaking workforce in India, it is not surprising that the share of platform work completed by workers from that country is quite substantial. The high global demand for software development and technology has also led to an increase in the supply of labour for these tasks. The rise in the share of total supply coming from India was driven by an increase in the share of labour supply in software-related tasks, which is consistent with the extensive offshoring of IT, BPO and software services to India (see box 1.3 for more details). The other occupational category where the share of labour supply from India increased was that of creative and multimedia services (3 percentage points).

Online web-based platforms often do not provide information on gender, and it is therefore difficult to disaggregate the distribution of workers by sex. To resolve this issue, researchers have used an algorithm that allows them to infer the sex of the worker from first names, country of origin and date of birth (as certain names were quite popular at a certain point in time), using historical data (Blevins and Mullen 2015). Based on this algorithm, a small random sample of workers from the Online Labour Observatory were disaggregated by sex across different occupations for India, Ukraine and the United States (see figure 1.9).

The distribution shows that the participation of women on online web-based platforms is lowest in India (21 per cent), while it is higher in Ukraine (39 per cent) and the United States (41 per cent). The distributions by sex at the country level are very similar to the findings from the online surveys conducted by the ILO (Berg et al. 2018; see section 4.1.2). Across occupations, in all three countries the proportion of women is quite high in writing and translation. A higher share of women in the United States is engaged in clerical and data entry, creative and multimedia, and sales and marketing compared to other countries. In India, the share of women across all occupations is lower than in other countries, even in occupations such as writing and translation, which are female-dominated in the other two countries.



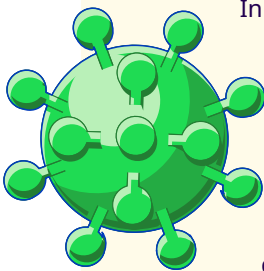
► **Figure 1.9 Gender distribution of labour supply on online web-based platforms, by occupation, selected countries, October 2020 to January 2021**



Source: As for figure 1.6.

► **Box 1.3 COVID-19 impact on online web-based platforms**

After the widespread outbreak of COVID-19, there was a decline in both the demand for work and the supply of labour in March 2020, after which activity picked up gradually from early April 2020 (see figure 1.6). On the demand side, there was a rise between April and May, after which demand declined gradually and then stagnated until October, when it picked up again. The impact of COVID-19 seems to affect clients and workers differently across countries. To understand these impacts, two countries are analysed: the United States and India. These countries have the largest presence in both posting of tasks and projects (labour demand) and registered workers (labour supply) on platforms.

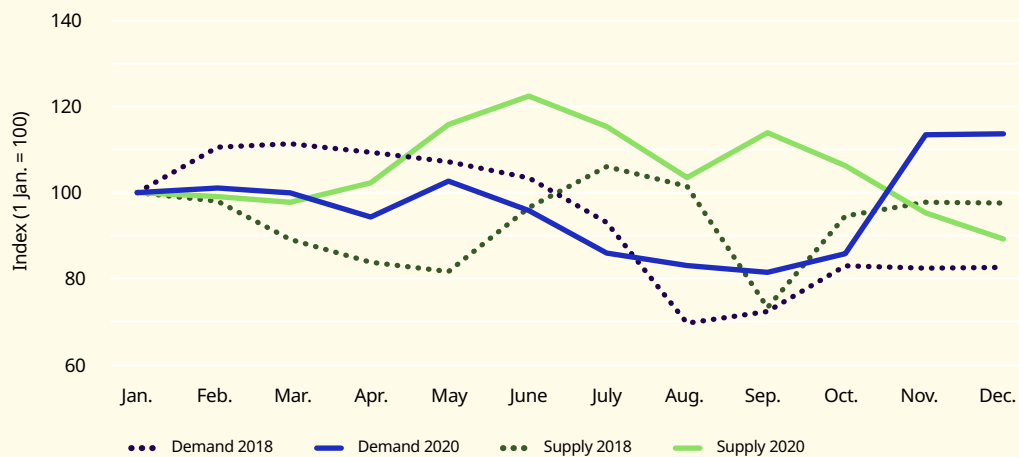


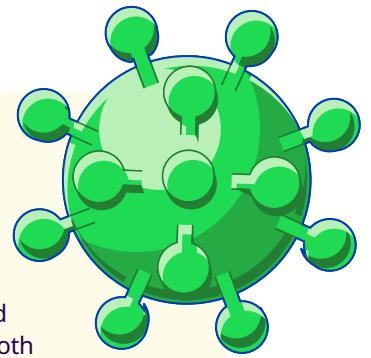
In the United States, the demand for labour declined soon after the outbreak of the pandemic in mid-March (see figure 1.10a), and it picked up in April and continued to rise until May. This decline was observed across all occupational categories until late October. The declining trend could be due to firms or clients being cautious and reducing their expenditures, including by outsourcing non-essential tasks as a result of a fall in their revenues, and postponing expenditures for the future (Stephany et al. 2020). In October 2020 there was an increase in demand across all occupational categories, with the largest increase in tasks related to clerical and data entry and professional services, and the levels were higher than those observed in February 2020.

The labour supply has increased substantially compared to labour demand (see figure 1.10a). There was a steep increase in the number of registered users on these platforms originating from the United States in April and May 2020, particularly in software development and technology, and in creative and multimedia services, followed by a small decline during the next few months. The increase observed in these two categories may have been prompted by the expectation of higher demand for such tasks.

► **Figure 1.10 Online labour demand and supply, the United States and India, 2018 and 2020**

(a) United States



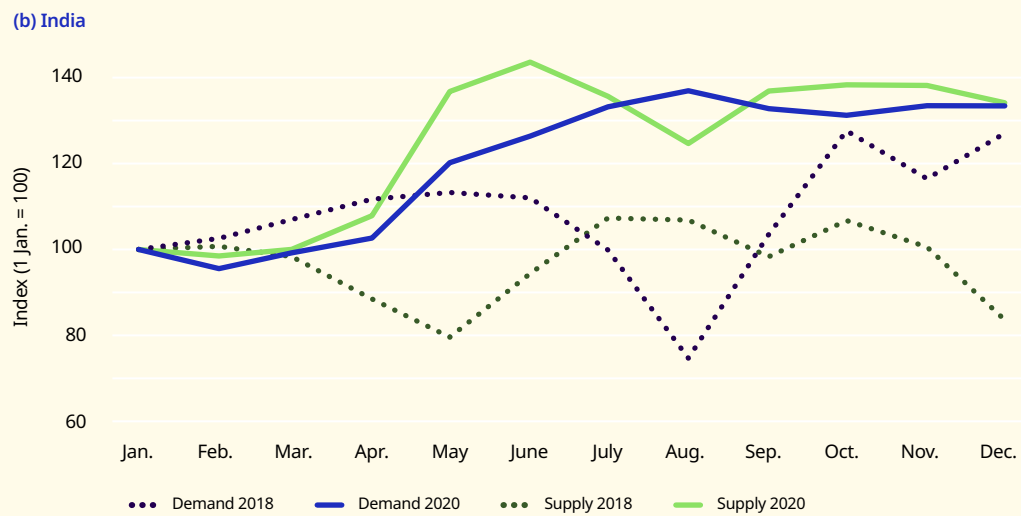


► **Box 1.3 (cont'd)**

In India, by contrast, both labour demand and labour supply increased from mid-March 2020 onwards (see figure 1.10b). The increase in demand was largely driven by clerical and data entry, professional services, and software development and technology, and demand was 50 per cent higher than at the beginning of 2020. The increased demand for software development and technology could be due to the need for software solutions that enable a smooth functioning of a remote working environment. The increase in demand for work across other occupations could be attributed to the declining revenues of companies, and it is possible that many firms or clients were considering these platforms as a substitute for on-site work (Stephany et al. 2020).

At the same time, there was also a steep increase in the number of registered workers across all occupations, except for professional services. The general increase in labour supply was unaffected by the seasonal patterns, in contrast to what was observed in the global trends, indicating a steady demand of such work locally and regionally.

► **Figure 1.10 (cont'd)**



Source: As for figure 1.6.



## 1.4 The data-driven economy and the rise of machine-learning algorithms

With the growth of digital platforms, data has become a valuable strategic economic resource across various sectors of the economy. The importance of data has been gaining momentum since the beginning of the 2000s, and digitalization has facilitated the collection, processing, storage, use and transfer of data for different purposes (Rani and Singh 2019). The advances in cloud infrastructure such as cloud storage and cloud computing have enabled businesses to not only collect data at a speed and scale that was not possible at the end of the twentieth century, but also to store, structure and analyse data (Sheriff 2018). This section focuses on some of the concerns related to how data is being used, who owns data and how it impacts different users.


Data can be collected from a vast array of sources (websites, internet-based devices such as mobile phones, and so on), and digital platforms have emerged as spaces where data, such as driver and customer data on Uber, or worker or client data on Upwork, can be gathered using trackers and other digital tools. The data collected can be either structured, semi-structured or unstructured. Unstructured data is estimated to account for more than 90 per cent of the data available to organizations globally (Sheriff 2018). This unstructured data contains a bundle of information which, when structured, can be aggregated to analyse important trends and relationships.

### 1.4.1 Potential use of data

Structured data, both aggregated and personal, is valuable and can be used by multiple stakeholders such as workers, businesses, communities and governments for various purposes. Data collected at the workplace can potentially be used by companies to plan, to enhance operations, to accelerate decision-making or to maximize performance with a view to improving organizational goals (Sheriff 2018). Such data can also be used to monitor worker performance, which may affect workers negatively (Ball 2010).

While personal data can be sensitive, aggregated data can be used for a number of purposes by multiple stakeholders. The use of structured data can lead to significant changes in the value chain of almost every economic sector, from retail to healthcare, insurance or agriculture, as the economy moves towards access-based services. For instance, data collected by e-commerce platforms on consumer preferences – their consumption patterns and tastes, and so on – provides rich insights that can serve businesses in making economic decisions about product listing, designs, prices, inventory and logistics (Rani and Singh 2019). Such insights can also be sold to other companies for advertising purposes or used for developing new products and services, which in turn can help platforms generate considerable revenue. This not only gives them a competitive edge over traditional businesses (such as small retail stores) but could also lead to unfair competition where companies such as Amazon or Google use the data they collect to promote their own products and services in search listings (see section 3.4).

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 With the growth of digital platforms, data has become a valuable strategic economic resource.

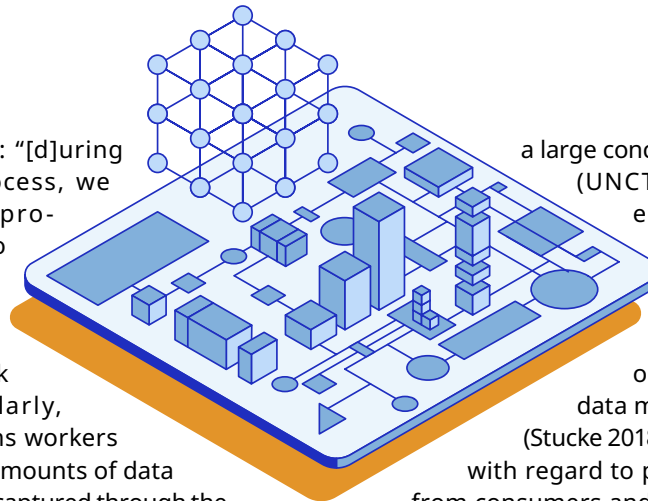
On digital labour platforms, the vast amounts of data gathered from users are used for business purposes, including to improve work organization, to match users, for machine learning and training algorithms, and to improve automated decision-making processes (Choudary 2018; see also Chapter 2). For instance, Upwork's annual report

for 2019 states: “[d]uring the search process, we leverage our proprietary data to help freelancers and clients efficiently connect” (Upwork 2019, 6). Similarly, on taxi platforms workers generate large amounts of data which are partly captured through the navigation technologies (GPS) that these platforms invariably deploy. The data is then used by the platforms’ matching and pricing algorithms for various purposes, including to propose to the driver the best route to reach a given destination (Choudary 2018).

Although most of the data generated on digital labour platforms is used by the platforms themselves for internal business purposes, if such data is shared locally and globally, and used judiciously, it can benefit society as a whole. Aggregated data in the fields of health, agriculture or environment, among others, could also be useful for policy-makers to progress towards achieving the SDGs (UN 2019). Similarly, real-time traffic information collected through app companies such as DiDi, Ola or Uber could be used to relieve traffic congestion and redirect traffic, especially in developing countries where there are challenges in relation to infrastructure (Rani and Singh 2019).

### 1.4.2 Issues related to user rights over data

Although there has been considerable emphasis on data as a new form of capital that can be leveraged and monetized to create revenue (Sadowski 2016), issues around its value and user rights have only recently gained attention. While it can be used to serve individual, economic and societal interests, the data collected tends to be owned by a few companies or digital platforms that have



a large concentration of market power (UNCTAD 2019). The network effects, along with data lock-in and aggregation (more data leads to exponential increase in its value), allow companies or platforms to become data monopolies (“data-opolies”) (Stucke 2018), thereby raising concerns with regard to privacy, transfer of wealth from consumers and workers to companies or platforms, and disruption to markets.

The accumulation of data among a few players can lead to excessive market power and competition issues. For instance, Uber<sup>12</sup> (including Uber Eats) have acquired a number of their competitors, such as Careem, Cornershop and Postmates, and one of the assets shared or acquired as part of these transactions, is data. This often allows platforms to amass an extensive amount of data, which is also observed in other sectors such as delivery, e-commerce and social media and gives them a competitive advantage over other players in the market (Cusumano, Gawer and Yoffie 2019).

Although data is generated by users (workers, businesses or consumers) on digital labour platforms, in practice it is considered to be the property of platforms. As a result, in recent years, various initiatives have been put forward to address this misappropriation of data and ensure more equitable forms of user rights over data. For example, data protection frameworks such as the EU’s General Data Protection Regulation (GDPR), provide data subjects (including workers on digital labour platforms) with a range of rights over their data that allow them to exercise considerable control over it (rights of access, rectification, portability and more) (see section 5.3.8). Such rights could empower workers (including those on platforms) and ensure greater transparency, so as to enable them to effectively engage in collective bargaining with platforms to improve their working conditions (Rani and Singh 2019).

<sup>12</sup> Uber’s privacy policy states that Uber may share “personal data with others in connection with, or during negotiations of, any merger, sale of company assets, consolidation or restructuring, financing, or acquisition of all or a portion of our business by or into another company”.

Moreover, the accumulation of data by platforms has led some to consider whether data could be treated as “labour” instead of “capital”. This notion would allow data to be perceived and treated as the property of those who generate it and not as an end product of consumption that is collected by the company or platform. Workers could then collectively organize as a “data labour union” and bargain for fees for their data (Arrieta-Ibarra et al. 2018).

While there is much to be gained by treating data as labour, practical questions arise about how to assess its value and what criteria ought to determine data fees. A related question is whether such fees will constitute one-off payments or be charged on a recurring basis. Moreover, monetizing data might even be counterproductive, because in the digital economy “the marginal value of any one person’s data contribution is very low”, since aggregated or grouped data has more value than individual personal data (P.J. Singh 2020, 8).

As data is generated by different users and is useful for economic decision-making and societal development, it could be a primarily common or public asset, that is, there could be collective user rights over community data (P.J. Singh 2020; Rani and Singh 2019). A framework regulating collective user rights over data could require platforms and companies to share community data and be subject to a licence for using it (P.J. Singh 2020; see box 1.4). This type of user right would allow countries to exercise legal and regulatory power over platforms and companies to ensure fairness vis-à-vis all economic actors, including platform workers. It could also help traditional companies to compete on a more level playing field and strengthen national digital industries. This could potentially lead to the development of appropriate public data infrastructures, especially in developing countries, which would in turn contribute to empowering platform workers and improving their lives, and to meeting the SDGs (Rani and Singh 2019).

#### ► Box 1.4 Collective user rights over community data

What does the concept of collective user rights over community data mean? It represents the idea that communities should have economic rights over the data they generate. In the case of workers, such rights could take the form of a collective stake in the company, for instance, in the form of co-determination rights in the business. In the context of “data as labour” and the monetization of data more generally, economic rights to data can be complicated when employment relationships are taken into consideration, as any remuneration of data could be considered to be already included in the remuneration, as part of the overall work. Therefore, workers’ data needs to be distinguished from their labour. In addition, data should be viewed as having a permanent value, as it can be used in multiple contexts. In light of this, collective economic rights over community data cannot and should not translate into a monetary sum; rather, the data should amount to a collective stake in the resulting products or services of a company, or, at the very least, the resulting products or services should not be used in a way that is harmful to platform workers.

In India, the Committee of Experts on Non-Personal Data Governance Framework has adopted a similar approach whereby “the rights over community Non-Personal Data collected in India should vest with the trustee of that community, with the community being the beneficial owner, and such data should be utilized in the best interest of that community” (2020, 23). The rationale behind this approach has been to maximize welfare, as India has a large consumer market, and the entry of data monopolies might lead to imbalances in the bargaining power of the various stakeholders, with just a few companies having access to large data sets that are accumulated in a predominantly unregulated environment, and with consequences for citizens, workers, businesses including start-ups, SMEs and the Government.


**Source:** P.J. Singh (2020); India, Ministry of Electronics & Information Technology (2020).

The excessive power and control over data by a few companies needs to be counterbalanced by policies preventing anticompetitive behaviour and misuse of data; in other words, effective competition and antitrust policies must be developed to prevent such firms from abusing their dominance by leveraging the data they accumulate. Given the asymmetries of economic power within the digital economy, for developing countries to benefit from the digital revolution they must build their digital infrastructure (broadband, cloud computing and data infrastructure) and digital policies in order to “ensure equitable distribution of gains arising from data which are generated within national boundaries” (UNCTAD 2018, VII).

### 1.4.3 The rise of machine-learning algorithms

The availability of data on a massive and unprecedented scale, coupled with enhanced computing capacities, has led to major breakthroughs in AI technologies. These are already being used extensively in a number of fields, such as search and product recommendation engines, speech recognition, fraud detection, image understanding, robotics and natural language processing. AI also facilitates new human resource practices, such as management by algorithms, which are not restricted to digital labour platforms but are also increasingly used in traditional sectors such as retail warehouses or white-collar occupations to assess worker productivity and their capacity to perform certain tasks (Akhtar, Moore and Upchurch 2018).

Digital labour platforms continuously use the vast amount of data collected for improving their machine-learning algorithms in order to match workers with clients or customers, allocate tasks, set prices, monitor and evaluate tasks, and award payments and rankings. The algorithms are designed to measure workers’ speed and attentiveness in completing the assigned task, apart from taking into consideration their ratings and

 Digital labour platforms continuously use the vast amount of data collected for improving their machine-learning algorithms.

reputation (De Stefano 2019; see section 2.4). If platform workers do not perform well or if the quality of their work falls short of the standards set by the algorithm, this can result in their not receiving any tasks or at times even being dismissed (deactivation of their account) from the respective platform (see sections 2.5 and 4.3.2).

Furthermore, the use of algorithms may in some cases exacerbate or amplify pre-existing biases or create new ones. The algorithms are coded by human programmers based on a set of norms and instructions; if bias is fed into the system, it can result in discriminatory practices. In addition, it is important to note that the algorithms are only as good as the data that is fed into them; if there are gaps or errors in the data then the algorithms might automate existing patterns of discrimination (UN 2019). The use of AI-enabled algorithms can hence disrupt many existing regulatory approaches, leading to potential gaps in terms of liability, consumer protection and the protection of fundamental rights (see Chapters 5 and 6).

Alongside the increasing use of machine-learning algorithms in both the digital and non-digital sphere, there is as yet no transparency with regard to the source code<sup>13</sup> of algorithms, which is not at all accessible to the platform workers. If a worker’s task is rejected or their account deactivated, or if they receive a low rating by the algorithm, they are often unable to find out the reason(s) for said actions or sanction nor how they can improve their performance. Accessing the underlying source code of an algorithm is the only way to inspect whether such an algorithm is producing anticompetitive or discriminatory outcomes. However, it is difficult to access the source code of an algorithm,

<sup>13</sup> Source code refers to “a collection of computer instructions which are processed and executed, and whose human-readable version (called source code) is usually protected by copyright and often kept confidential to protect proprietary information” (UNCTAD 2018, 91).

as it is protected by trade secrecy laws and by intellectual property rules at the WTO level (Smith 2017).<sup>14</sup> There have been instances, however, where access to the source code has been granted; for example, the US District Court for the Northern District of California granted access to Uber's source code to Waymo's<sup>15</sup> counsel and an expert to ascertain whether there had been a case of trade secret misappropriation.<sup>16</sup> Uber committed to not using any of Waymo's intellectual property (whether hardware or software) in its self-driving technology and paid Waymo 0.34 per cent of its equity as part of the settlement.<sup>17</sup>

To ensure fairness for workers and businesses on digital platforms, both labour and e-commerce, it is crucial for governments to have access to the source codes of the algorithms in appropriate circumstances and under appropriate conditions. For instance, without accessing Google's, Amazon's or Uber's source code, it is impossible to inspect whether a company's ranking or pricing algorithm produces anticompetitive outcomes, or whether its rating algorithms lead to account deactivation that amounts to unfair dismissal. In this regard, the proposals on e-commerce rules agreed by WTO member countries at the WTO level that prohibit the transfer of or access to source code could pose a major threat to ensuring decent work and fair competition on digital platforms (Smith 2017).<sup>18</sup>

These restrictions could further deepen global North–South inequalities by aggravating the dependence of developing countries on software monopolies which are usually concentrated in developed countries, and by depriving them of the opportunity to adapt software to their own reality and use it for local development (Neeraj 2017).

The rise of data as capital and an asset, and its relevance to AI, has also led venture capitalists and private investors to invest in digital platforms (see section 1.5) and digital technology start-ups (see section 3.3.2). For instance, the recommendation engine of Netflix reportedly saves US\$1 billion every year for the company as it reduces the subscriber monthly churn and is able to recommend based on previous choices (Gomez-Urbe and Hunt 2015). The potential of machine-learning algorithms to raise such revenues has also led venture capitalists to invest in AI start-ups, which raised a record US\$26.6 billion in 2019 (compared to US\$16.8 billion in 2017) (K. Johnson 2020). Given the rise of business models supported by data and AI, and the potential for enhanced profitability, venture capital investments are further supporting the growth of digital platforms, which are seen as fundamental to taking forward such a profound data-based transformation in the economy.

<sup>14</sup> See Article 39 of the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights: [https://www.wto.org/english/docs\\_e/legal\\_e/27-trips.pdf](https://www.wto.org/english/docs_e/legal_e/27-trips.pdf).

<sup>15</sup> Waymo is an autonomous driving technology development company, subsidiary of Alphabet (includes Google).

<sup>16</sup> For more information, see: [https://cdn.arstechnica.net/wp-content/uploads/2017/05/Uber.Waymo\\_Order\\_.pdf](https://cdn.arstechnica.net/wp-content/uploads/2017/05/Uber.Waymo_Order_.pdf).

<sup>17</sup> For more information, see: <https://www.wired.com/story/uber-waymo-lawsuit-settlement/>.

<sup>18</sup> See, for example, the following WTO documents: JOB/GC/94; JOB/GC/100; INF/ECOM/22.





## 1.5 Financing the rise of digital labour platforms

Venture capital has played a key role in the rise of digital platforms (including digital labour platforms) over the past decade. The stock market value of the major technology companies or “superstar firms”, and of digital labour platforms, has also continued to rise. These companies attract investment even though some of them continue to have operating losses (Kenney and Zysman 2019). This section looks at the rise of venture capital investment in digital labour platforms, and their concentration in particular sectors and geographical regions. It also considers the concentration of market power in the hands of a few platform companies and digital labour platforms, and their implications for businesses and platform workers.

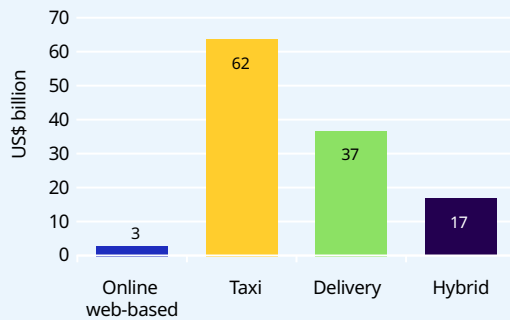
The rise of venture capital investment in digital platforms is rooted in the belief that start-ups offer large capital gains, given that many sectors and industries can be disrupted with the advances in ICT, ranging from smartphones and big data to machine learning and the Internet of Things (Kenney and Zysman 2019). Globally, venture capital investments in digital start-ups have grown sixfold between 2010 (US\$52 billion) and 2019 (US\$295 billion) (Rowley 2020; Florida and Hathaway 2018). A significant proportion of these investments were made in companies based in the United States (US\$136.5 billion), followed by companies in China (US\$36.5 billion for January to mid-November 2019, which was a major drop from US\$93.4 billion in 2018), Europe (US\$36 billion) and India (US\$14.5 billion) (PitchBook 2020; Teare and Kunthara 2020; Kunthara 2019; M. Singh 2019). In comparison, investments in Latin America (US\$4.6 billion) and Africa (US\$1.3 billion) were relatively low (Azevedo 2020; WeeTracker 2020).

Data on funding or investment and revenue of digital platforms is not easily available, particularly for platform companies that are yet to release an Initial Public Offering (IPO). In this regard, research on the flow of investment in and revenue

of digital labour platforms has been limited, and fraught with data limitations. This report takes recourse to databases such as Crunchbase and Owler to extract available information on these aspects, while also drawing on the annual reports or filings by platform companies to the Securities and Exchange Commission of the United States where information is available. For funding, the report uses data only from Crunchbase, and this data is available for only 47 per cent (367 platforms) of the 777 digital labour platforms listed on the Crunchbase database. These platforms have together received a total funding of US\$119 billion (as of 30 January 2021). There are substantial differences in investment between platforms offering taxi or delivery services and those providing online web-based services. The highest investments are in taxi service platforms, with 61 platforms having received US\$62 billion between 2007 and 2020. This is followed by delivery platforms where US\$37 billion has been invested in 164 platforms, while investments in online web-based platforms are the lowest, at about US\$3 billion for 142 platforms (see figure 1.11). Five hybrid platforms were identified which provide a range of services from payment to taxi or delivery services and e-commerce; these platforms have received US\$17 billion between 2010 and 2020.

Based on the funding information available on platform companies, the distribution of funding is considerably skewed among taxi platforms, with 75 per cent concentrated in just two companies (Uber and DiDi), while the remaining 25 per cent went to 59 companies. The distribution of funding is slightly less skewed for delivery platforms, with the top five platforms (DoorDash, Delivery Hero, Ele.me, Lalamove and Instacart) accounting for 49 per cent. In the case of online web-based platforms, about 33 per cent of funding is concentrated among the top three platforms (ZBJ, Scale AI and Upwork).

► **Figure 1.11 Total investments from venture capital and other investors, by platform category, 1998–2020**



**Note:** Number of platforms and period for which data on total funding was available: online web-based: 142 (1998–2020); taxi: 61 (2007–20); delivery: 164 (1999–2020); and hybrid: 5 (2010–20).

**Source:** Crunchbase database.

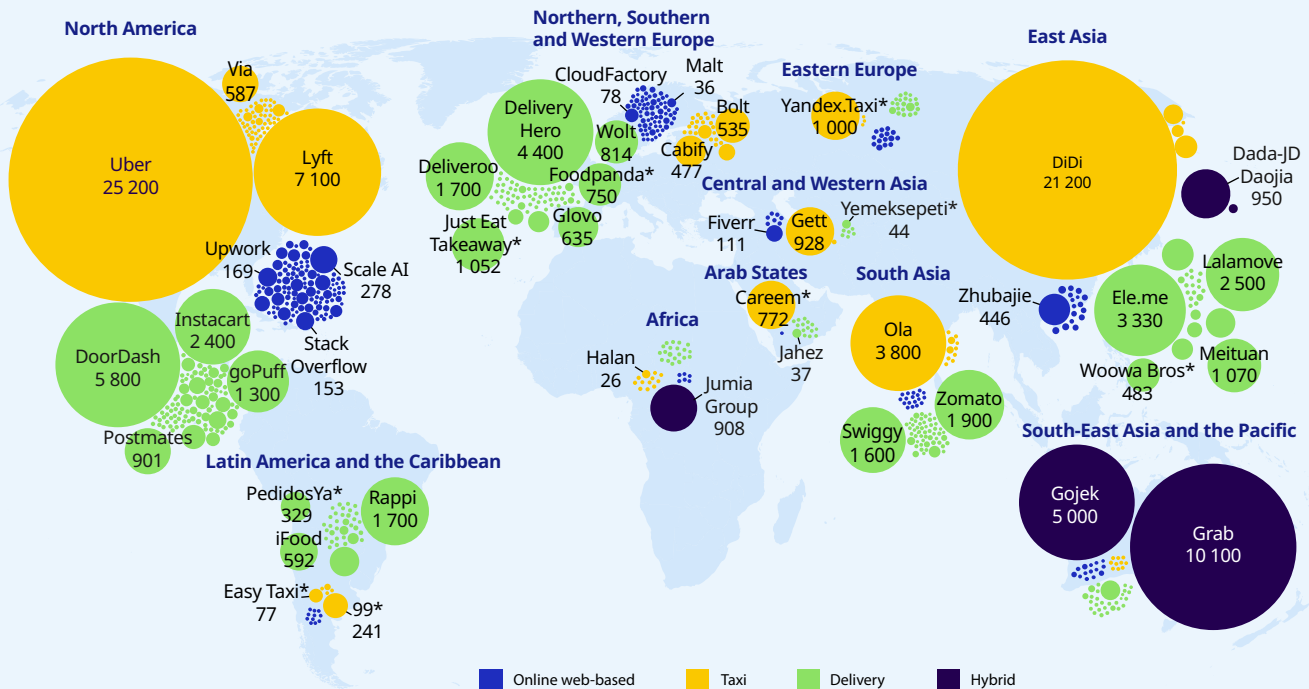
The concentration of funding on just few companies by many venture capitalists, who are betting on these platforms to dominate the market, is based on the high rate of return from their network effects or “winner-take-all” effects (Kenney and Zysman 2018b, 6). The access to venture capital funding has also allowed many platforms to operate at a loss for particularly long periods of time, which has exacerbated their disruptive effects on the traditional sectors. For instance, both Uber (US\$25.2 billion in 28 rounds) and Grab (US\$10.1 billion in 31 rounds and an additional US\$2 billion in 2021) have continued to receive funding despite incurring substantial losses. Grab, which is valued at US\$14 billion, continues to remain private (as of 2019), while hoping to make profits so that it can go public (Soon and Choudhury 2019). By contrast, Uber, which has incurred “significant losses since its inception” and has an accumulated deficit of US\$16.4 billion, was able to go public in 2019 when it was valued at US\$82.4 billion (Uber 2020a, 12; de la Merced and Conger 2019). Despite its continuous losses, the company is able to attract investment from

other major platform companies such as Alphabet (includes Google) and DiDi, and other investors like SoftBank (one of Uber’s largest shareholders) (Uber 2020a, 12). The rapid growth in revenues and the valuation of Uber is explained by these venture capital investments, which have served to heavily subsidize consumers and drivers through various incentives, and what some have argued to allow for “artificial market power to subvert normal market dynamics” (Horan 2019). This situation has led to a disruption of the traditional taxi industry in that it has allowed platforms, irrespective of their revenues, both to establish their market power and to gain a dominant market position.

► The access to venture capital funding has allowed many platforms to operate at a loss for long periods of time.

Given the availability of venture capital funding, many platform companies tend to remain private for long periods of time, as opposed to making an IPO; this situation has led to the growth of so-called unicorns, which are privately held start-up companies valued at over US\$1 billion (Kenney and Zysman 2018b). These companies can continue to function for long periods even when incurring losses by raising private funds and avoiding the scrutiny of public markets or traditional investors (Kenney and Zysman 2019; Schleifer 2019). The trend of large valuations despite unprofitability is not unique to companies that are not publicly traded; it is estimated that 64 per cent of platform companies valued at more than US\$1 billion that have completed a venture capital-backed IPO since 2010 were unprofitable (Clark 2019). While several platforms are profitable, the fact that many continue to operate and receive funding from venture capitalists despite losses over long periods raises questions about both their economic and social impact as well as the welfare-generating aspects of this innovative business model (Kenney and Zysman 2019).

► **Figure 1.12 Total funding from venture capital and other investors, selected categories of digital labour platforms, by region, 1998–2020 (US\$ million)**



\* Platform has been acquired or merged, see [Appendix 1](#).

**Note:** Number of platforms and period for which data on total funding was available: online web-based: 142 (1998–2020); taxi: 61 (2007–20); delivery: 164 (1999–2020); and hybrid: 5 (2010–20).

**Source:** Crunchbase database.

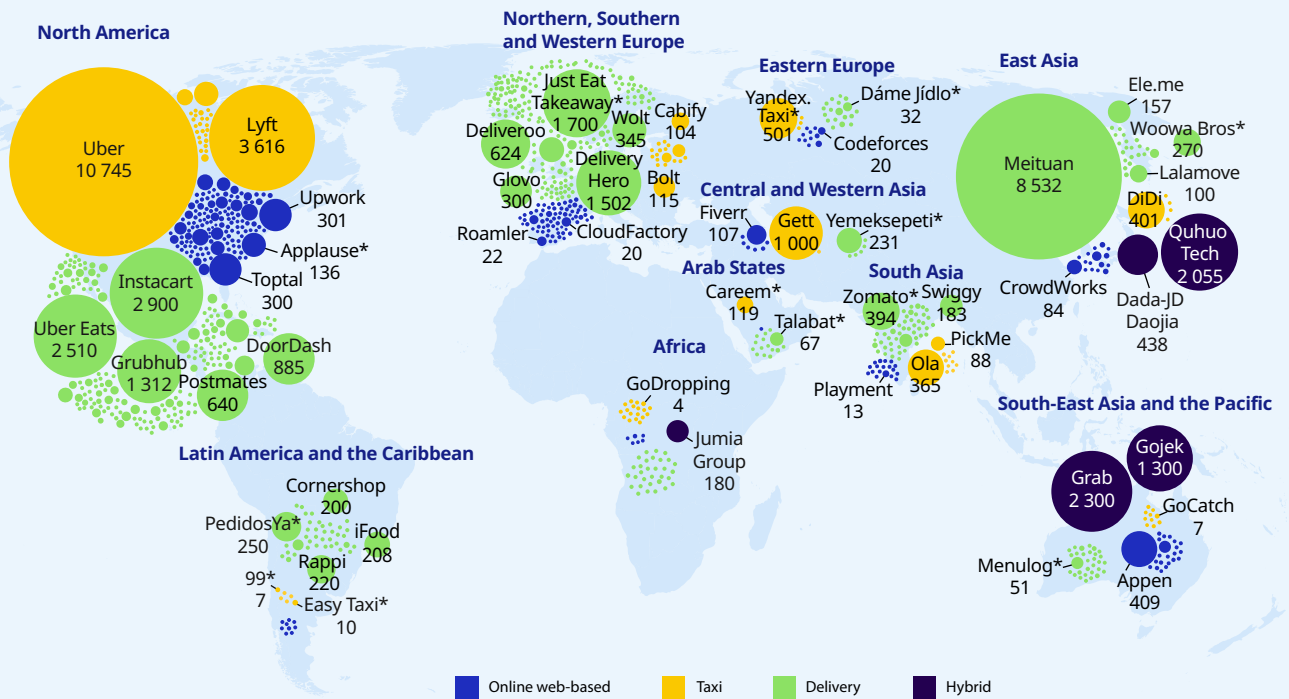
### 1.5.1 Geography of digital labour platforms: funding and revenue

The global distribution of investment in digital labour platforms is quite skewed, with the triad composed of Asia (US\$57 billion), North America (US\$46 billion) and Europe (US\$12 billion) benefiting from 96 per cent of investments compared to 4 per cent going to Latin America, Africa and the Arab States, indicating a digital divide. Although some important players are emerging in these regions, such as Gett and Fiverr (Israel), Jumia Group (Nigeria) and Rappi (Colombia), the most well-funded platforms in the taxi (Uber and DiDi) and delivery (DoorDash, Delivery Hero and Ele.me)

sectors, as well as online web-based platforms (Upwork and ZBJ), are located in the United States, China or Europe. In terms of funding, taxi platforms have received a significantly larger share of venture capital financing than online web-based platforms (see figure 1.12). Uber's total funding (US\$25.2 billion) is *nine times* greater than that of all the online web-based platforms analysed put together (US\$2.6 billion for 142 online web-based platforms).

► The global distribution of investment in digital labour platforms is quite skewed.

► **Figure 1.13 Estimated annual revenue of digital labour platforms, selected categories, by region, 2019 (US\$ million)**



\* Platform has been acquired or merged, see [Appendix 1](#).

**Note:** Number of platforms for which data on revenue was available: online web-based: 106; taxi: 31; delivery: 101; and hybrid: 5.

**Source:** Owler database, annual reports and filings by platform companies to the Securities and Exchange Commission of the United States.

With regard to revenue, this report relies on data collected from the Owler database, annual reports and filings by platform companies to the Securities and Exchange Commission of the United States. The data on revenue is available for only about 31 per cent (243) of the platform companies. The revenue generated through digital platforms is further evidence of the geographical concentration of wealth, as about 70 per cent of global revenues are concentrated in just two countries, the United States (49 per cent) and China (23 per cent).<sup>19</sup> About 11 per cent of global revenue is concentrated in Europe, while all the other regions

together account for 17 per cent of the revenue. Uber, located in the United States, has the highest revenue (US\$10.7 billion) among taxi platforms, while Meituan, located in China, has the highest revenue (US\$8.5 billion) among delivery platforms (see figure 1.13).

Among online web-based platforms, Appen, Upwork, Toptal and Fiverr, which are based in Australia, Israel and the United States, respectively, generate the highest revenues. The revenue generated by online web-based platforms is smaller than that of location-based platforms.

<sup>19</sup> It is possible that if the information on revenues was available for a larger number of platforms, then the concentration of revenue might be less skewed.

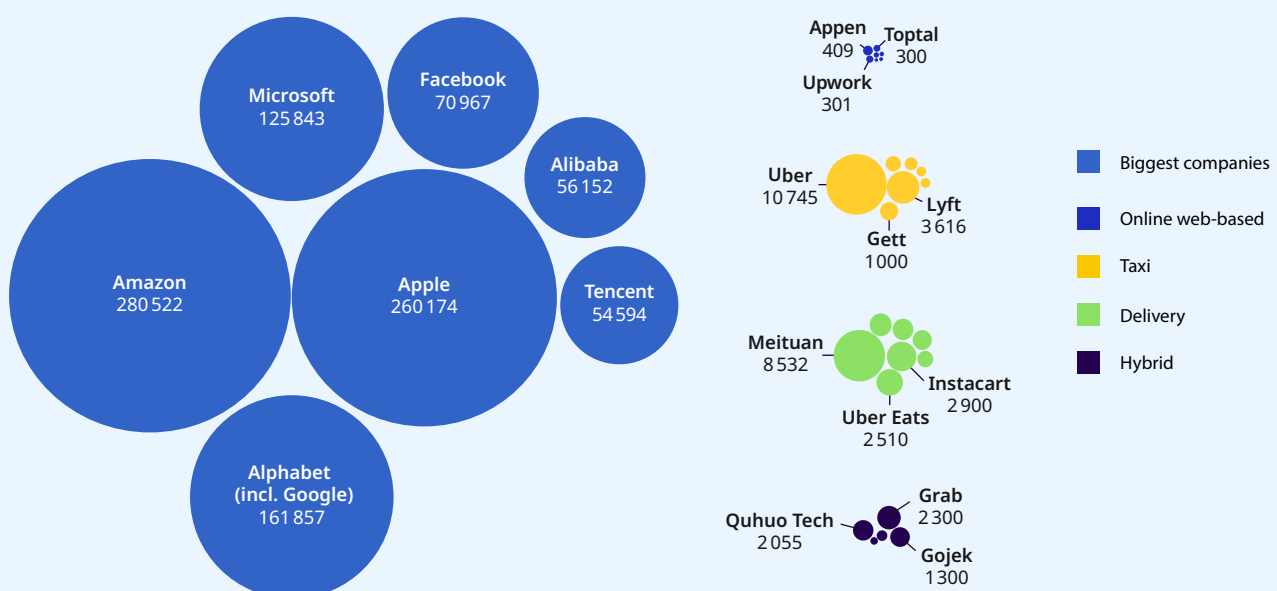
For example, in 2019, Uber generated a revenue of US\$10.7 billion, which is about 36 times that generated by Upwork (US\$301 million). Uber received funding of US\$25.2 billion, compared to US\$169 million received by Upwork, which is about 150 times more. Furthermore, the valuation of Uber at the IPO was US\$82.4 billion, while that of Upwork was US\$1.5 billion (de la Merced and Conger 2019; Belvedere 2018). The key element in this difference could be that the taxi sector allows these companies to gather vast amounts of data on users (workers, clients and customers), which has intrinsic commercial value as it is linked to specific localities and infrastructure, and it also allows these companies to expand their services. This, in addition to using such data to train algorithms for pricing, allocating tasks, or for predicting and mitigating traffic congestion (Chen and Qiu 2019), could be potential reasons for such a high valuation.

While digital labour platforms are disrupting both traditional business models and employment relationships, they are small compared to the platform

companies that are dominating the global digital economy. The estimated market value of the digital economy was US\$7 trillion in 2017, based on the top 242 companies. However, seven “super platforms” based in China and the United States represented 69 per cent of the total market value of the digital economy (KPMG 2018, 9). The seven largest technology companies (Amazon, Apple, Alphabet (includes Google), Microsoft, Alibaba, Facebook and Tencent) based in the United States or China had a cumulative revenue of US\$1,010 billion in 2019 (see figure 1.14).

In comparison to these major technology companies, the largest digital labour platforms (both location-based and online web-based) are small in terms of revenue generation (see figure 1.14). Amazon and Apple generated over US\$280 billion and US\$260 billion in revenue in 2019 respectively, while some of the largest location-based and online-web based platforms such as Uber, Meituan, Instacart, Appen, and Upwork generated a combined revenue of only about US\$31.2 billion in 2019. Moreover, some of the major technology

► **Figure 1.14 Estimated annual revenue of large platforms and selected digital labour platforms, 2019 (US\$ million)**



**Note:** For each of the digital labour platform categories only the seven companies with the highest revenue are included. For the taxi sector, these are Uber, Lyft, Gett, Careem, Yandex.Taxi, DiDi and Ola; for the delivery sector Meituan, Instacart, Uber Eats, Just Eat Takeaway, Delivery Hero, GrubHub and DoorDash; for online web-based platforms Appen, Upwork, Toptal, Fiverr, Applause, Guru and Justanswer; and the hybrid platforms Grab, Quhuo Tech, Gojek, Dada-JD Daojia and Jumia Group.

**Sources:** Owler database, annual reports and filings by platform companies to the Securities and Exchange Commission of the United States.

companies are also investing in digital labour platforms. Google Ventures (now Alphabet) invested in Uber in 2013 and owned a 5.2 per cent stake in the company in 2019 (Levy 2019); Facebook, Alphabet (includes Google) and Tencent have invested in Gojek (Gupta 2020); and Apple, Alibaba, Booking, Softbank and Tencent have invested in DiDi (Chen and Qiu 2019).

The rise of such large technology companies has also resulted in a concentration of market power, as these companies are diversifying and offering an increasing range of services, often through acquisitions or mergers with other platforms. Amazon is a case in point as it offers a wide range of services including online retail, delivery, cloud computing, a crowdsourcing marketplace, and entertainment. The greater market concentration could help companies achieve monopoly power, and could lead to potential issues related to pricing, as well as having an impact on influencing regulation and even innovation.

Such concentration of market power among a few companies is increasingly the case for digital labour platforms, where easy access to venture capital financing enables these companies to reach new markets and enhance their competitiveness. For instance, DiDi in China merged with Kuaidi in 2015 and acquired Uber China in 2016 (Chen and Qiu 2019), triggering an antitrust investigation by the Chinese government in 2018.<sup>20</sup> Globally, it acquired the company 99 in Brazil, and is developing strategic partnerships with platform companies in a number of countries in Asia, Africa, Latin America, the Middle East and Europe (Chen and Qiu 2019).

## The rise of large technology companies has resulted in a concentration of market power.

Similar trends can be observed among other companies, such as Gojek and Grab in South-East Asia or Jumia in Africa, which are expanding into more countries and diversifying into a wide range of services: online retail, travel marketplace, transportation and logistics, food and grocery delivery, home and maintenance, entertainment, and payment, among others. While investments have been rising and new investors are increasingly playing an enabling role in financing the digital platforms, the current model of venture capital investment that focuses on a few companies despite their large losses raises concerns with regard to the sustainability of this model, and particularly to the over-valuation of companies.

The competitive advantage and market power exercised by these companies is not necessarily based on inherent competitive advantage, as they are often loss-making and propped up by venture capital funds rather than profits in the short to medium term. This distorts competition, challenges the traditional understanding of monopoly or oligopoly power, and blurs the boundaries of the organization, not just in the sense of employment relationship but also in terms of finance, which is obviously fundamental for the survival of a company. The dominance of such companies might also lead to sustainability issues for traditional companies, smaller businesses and third-party sellers (see section 3.4).

<sup>20</sup> For more information on antitrust investigation, see: [http://www.xinhuanet.com/english/2018-11/16/c\\_137611764.htm](http://www.xinhuanet.com/english/2018-11/16/c_137611764.htm).

## ► Conclusion

This chapter has shown that with the ICT revolution and the pervasive spread of the internet, the world of work is experiencing many fundamental transformations. There is clear evidence of the diffusion and penetration of digital platforms into various sectors of the economy. The availability of cloud computing and technological innovations has enabled the development of a distinct form of business model which has created opportunities and challenges for both workers and businesses.

Digital labour platforms in particular, as mediators of work, have grown at a rapid pace, changing the way in which work is organized. They are impacting several economic sectors, so that businesses need to adapt both to the changes being introduced by digital technologies and to new forms of competition arising from these platforms.

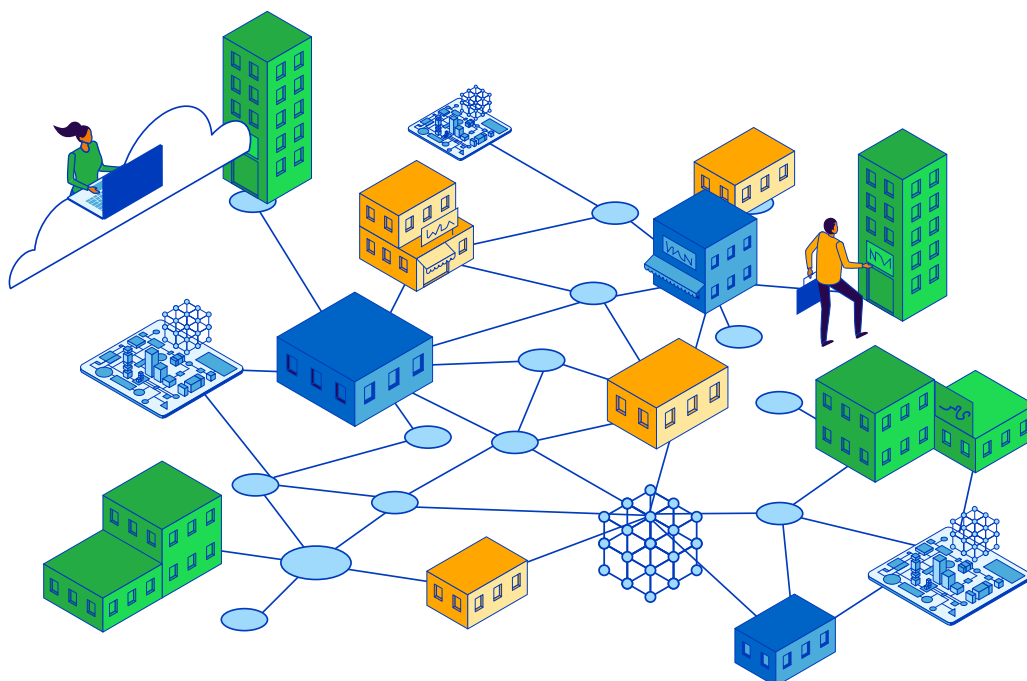
The growth of digital labour platforms has indeed created additional income-generating opportunities for workers around the world but has also given rise to a number of challenges which need to be addressed. Although estimates regarding the number of workers whose work is mediated through such platforms continue to face data-related and methodological challenges, in instances where data is available there are clear signs that labour supply is exceeding demand.

The rise of the digital economy and the proliferation of digital labour platforms are occurring alongside the increased relevance of user data, which is largely owned, controlled and managed

by platform companies. This data is being used for machine learning, developing new products, enhancing efficiency and productivity, and shaping pricing structures and the organization of work; while the users, and in particular platform workers, often have no economic rights over such data.

At the same time, the rise of the digital economy more broadly, and of digital labour platforms more specifically, has been financed through venture capital funding, which has allowed companies to expand rapidly and compete with traditional sectors despite often being unprofitable. This financing model has also enabled large platform companies to acquire global market dominance even though they are based in only a handful of countries. This could further widen the digital divide and increase economic inequality, and also pose challenges for companies based in developing countries to compete in the global digital economy.

Furthermore, the challenges related to the rise of the digital economy could complicate efforts by governments of developing countries to adopt appropriate regulations to ensure fair competition for businesses and adequate protections for workers. Engaging with and addressing such challenges will be decisive in leveraging the potential opportunities emerging from the digital economy and labour platforms to promote decent work and advance progress towards achieving the Sustainable Development Goals.







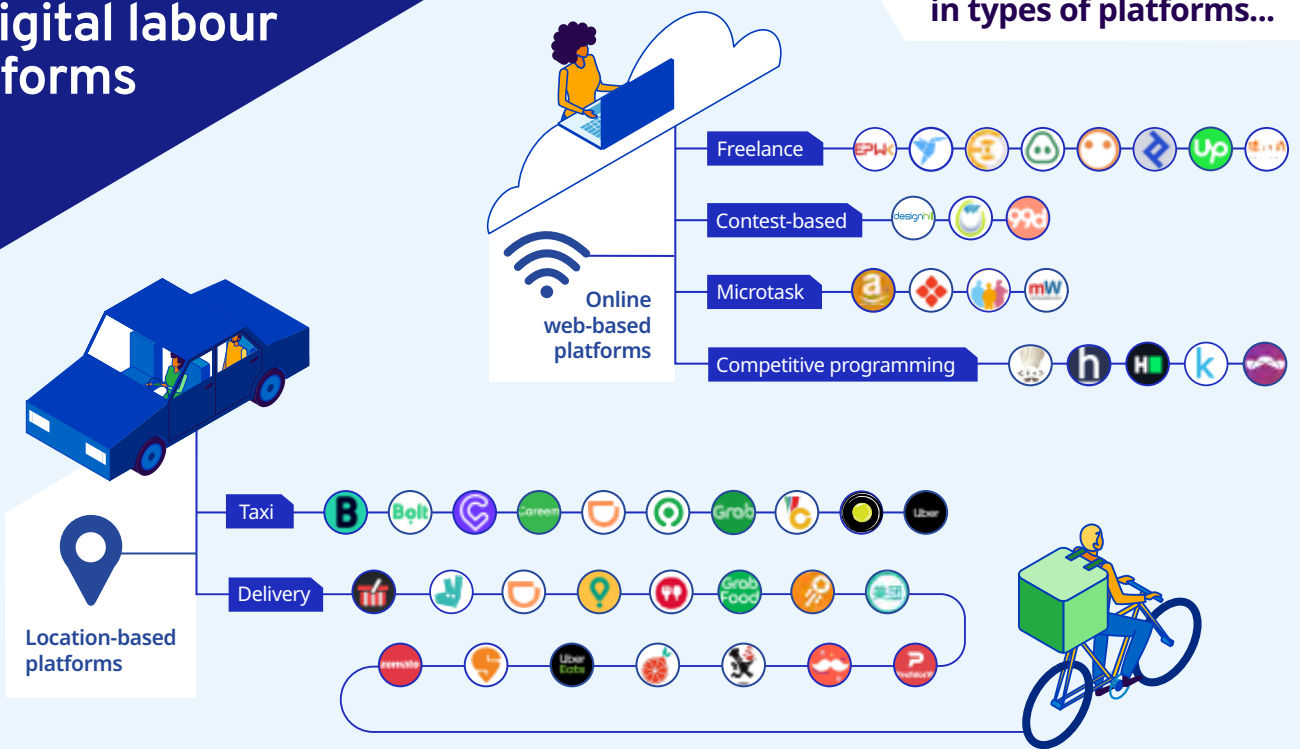
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**2**

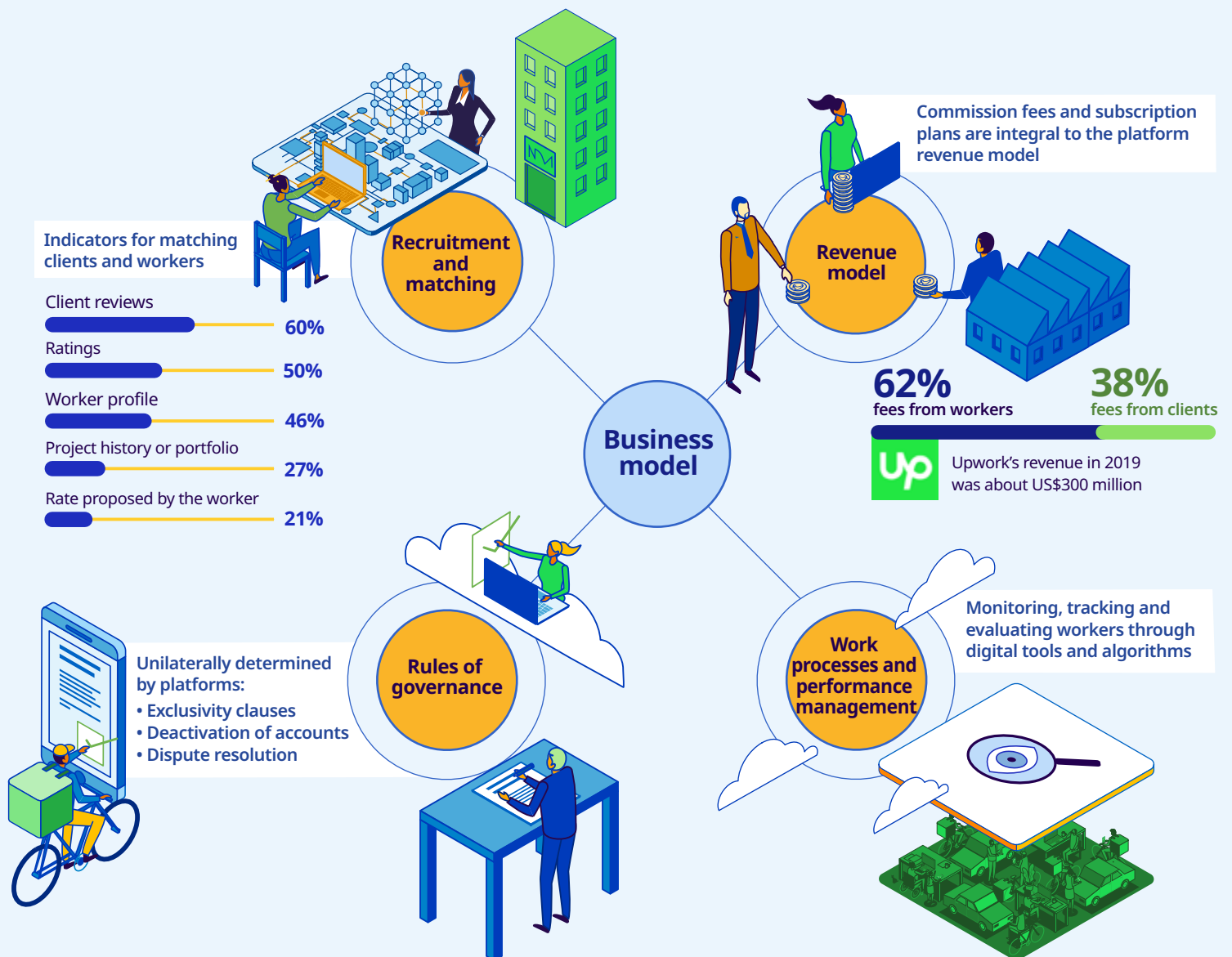
**The business  
model and  
strategies  
of digital  
labour  
platforms**

# The business model of digital labour platforms

Despite the diversity in types of platforms...



## ... their business model has common elements



## ► Introduction

The current evolution of the digital economy is transforming business and society, and is also leading to the “platformization” of traditional business practices. The availability of digital tools and cloud infrastructure has enabled the development of innovative business models, such as digital labour platforms, of which there are two broad types: online web-based and location-based platforms. Online web-based platforms offer the flexibility of undertaking work from any location, at any time. While some of the tasks available on these platforms are new, such as image and data annotation, labelling and data processing, a number of others, such as translation, transcription and software development, were previously performed and continue to be performed in the traditional labour market. The distinguishing features of such platforms are that technology enables work to be outsourced globally across borders and that work can be performed remotely from any location.

On location-based platforms, work is performed in a specified physical location, with taxi and delivery services being among the most prevalent examples of such platforms. Like the activities on online web-based platforms mentioned above, taxi and delivery services are not inherently new and continue to be conducted in traditional labour markets. What is new in the digital economy is that these services are mediated through a digital application. Platform-based taxi and delivery services have created employment opportunities owing to changing consumer preferences, and workers in these sectors are increasingly relying on app-based services for their incomes, particularly in developing countries.

Three distinct features can be identified in the digital labour platform business model. First, the introduction of algorithmic management of work processes and performance (Moore and Joyce 2020; Griesbach et al. 2019; Lee et al. 2015). Allocation and evaluation of work performance are based on metrics and ratings integrated into an algorithmically determined performance management system, while work is monitored using digital tools. This mode of management is a fundamental departure from traditional human

resource management practices and may have implications for the future of work. For instance, on taxi platforms “algorithmic management allows a few human managers in each city to oversee hundreds or thousands of drivers on a global scale” (Lee et al. 2015, 1603).

Second, the organization of work, which allows platform companies to provide services without having to invest in capital equipment or bear the operational costs (Stanford 2017). For instance, on online web-based and location-based platforms, capital equipment such as computers or vehicles is provided by the workers, who also bear the costs related to fuel, maintenance, purchase of licences, or internet charges.

The third feature is the creation of a highly segmented dual labour market, which consists of two categories: a small core workforce directly employed by the platform (internal employment) and a large outsourced workforce whose work is mediated through the platform (external employment) (ILO, EU and OECD, forthcoming; Rahman and Thelen 2019). Workers in the first category have an employment relationship, while those in the latter are typically categorized as “self-employed” or “independent contractors” by the platform and are without an employment relationship but often have to pay various types of fees for accessing tasks (Webster 2020). This model allows digital labour platform companies to raise revenue and provide services by shifting the risks and costs related to capital equipment and operations to workers.

This chapter explores some of the features of the digital labour platform business model, including algorithmic management of work, the revenue model and business strategies. It also reviews the rules of governance, which are unilaterally set by the platforms, and are hence market-driven to some degree. The analysis for this chapter draws on the terms of service agreements of 31 online web-based and location-based platforms, their online websites, and semi-structured interviews conducted by the ILO with 16 digital labour platform companies (both online web-based and location-based platforms) based in different countries (see [Appendix 2](#)).

The chapter comprises five sections. The various types of platforms that are analysed in this chapter and the report as a whole are described in section 2.1. Section 2.2 discusses the revenue model and the pricing strategies that platforms use to appeal to workers and clients. Section 2.3 describes the recruitment practices on digital

labour platforms, and the algorithmic matching of clients and platform workers. The management of work processes and evaluation of work on platforms are explored in section 2.4. Section 2.5 reviews the rules of governance on platforms and client-worker engagement, as well as the collection and use of data.

## 2.1 Types of digital labour platforms

As discussed in Chapter 1, digital labour platforms provide a variety of services, drawing on diverse skill sets of workers, and operate in two broad categories, *online web-based platforms* and *location-based platforms*. They can be further distinguished based on the type of tasks performed, their duration and complexity. This report reviews four types of online web-based platforms and two types of location-based platforms (see figure 2.1).

### 2.1.1 Online web-based platforms

Online web-based platforms are gaining in popularity among businesses as they enable them not only to outsource tasks to a global workforce at reduced cost but also to complete assignments at a faster pace than is possible in the traditional outsourcing model (see section 3.1.2). Among online web-based platforms, this report focuses on freelance and contest-based, competitive programming and microtask platforms, which are some of the leading platforms facilitating labour exchange between workers and clients.

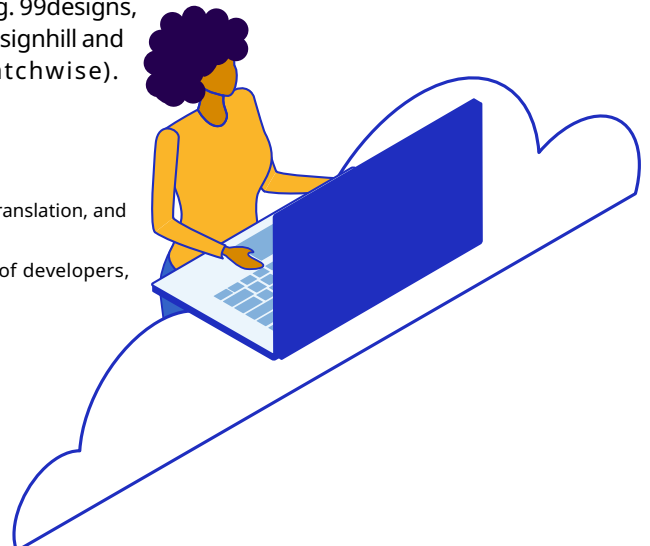
► *Freelance platforms* function like a marketplace, enabling clients to have work performed in fields such as translation, financial services, legal services, patent services, design and data analytics. They match clients with workers for a

specific task, based on a proprietary database that consists of indicators such as ratings and reviews, and facilitate the client-worker relationship in all its dimensions. The nature of services provided differs across these platforms, from a wide range of activities<sup>1</sup> and skills (e.g. Freelancer, PeoplePerHour and Upwork) to service offerings of specialized or targeted skills sets<sup>2</sup> (Toptal). This business strategy allows workers with multiple skills to access various tasks on the same platform, and businesses to access a wide range of skilled workers at a single place. There are other types of freelance platforms as well, where the platform matches the freelancer directly with the client or business for specific services, rather than through a marketplace. For instance, some translation platforms maintain a “network” of freelance translators, who are assigned translation tasks by the platform when a client puts in a request. Such platforms do not have an open marketplace visible to all the users and are not analysed in this report.

► *Contest-based platforms* specialize in organizing competitive design contests within their pool of talent to provide creative or artistic services and products, such as graphic design, to clients (e.g. 99designs, Designhill and Hatchwise).

1 Activities range from computer programming and analytics to design, translation, and legal and accounting services.

2 Toptal advertises service offerings through its exclusive community of developers, designers, finance experts, and project and product managers.



## Digital labour platforms provide a variety of services, drawing on diverse skill sets of workers.

The services<sup>3</sup> offered are similar across platforms, which compete through their pricing strategy and by attracting a pool of the “best” or outstanding designers through various subscription and other plans.

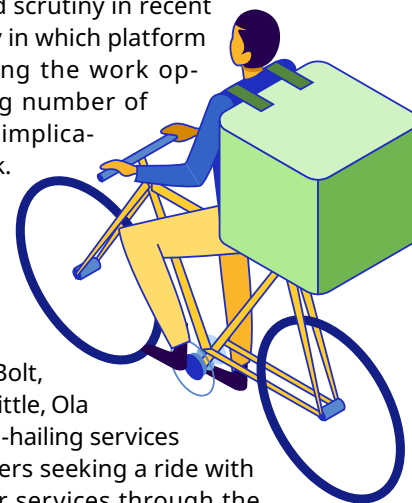
- ▶ *Competitive programming platforms* are spaces where a community of software developers and programmers can compete to provide business and research solutions related to artificial intelligence, data analytics, software development and other technical fields, within a designated time, with the winner(s) chosen by the clients. These platforms provide wide-ranging services to companies, from software solutions and data analytics (Kaggle and Topcoder) to recruitment services for hiring programmers, developers or data scientists (HackerEarth and HackerRank), among others, through their community of targeted talent. Some of these platforms, such as CodeChef and Kaggle, also link up with academic institutions and offer online practice sessions and contests for students and young software professionals to hone their programming skills.
- ▶ *Microtask platforms* specialize in tasks of short duration, such as transcribing a short video, checking data entries, adding keywords to classify a product for artificial intelligence and machine learning purposes, or tasks related to accessing content (such as visiting websites to increase traffic) or checking for sensitive content. Platforms such as Amazon Mechanical Turk (AMT), Appen, Clickworker and Microworkers provide a range of services<sup>4</sup> to clients and support them in unbundling tasks into smaller segments and dispersing them to

the crowd, then rebundling and delivering them back to the clients. Some of these platforms also provide clients with access to their application programming interface (API), which allows clients to directly crowdsource the tasks on the platform. In addition, there are other types of microtask platforms that have emerged, such as Scale AI or Mighty AI, that provide data and image annotation services; they crowdsource the tasks to their “crowd”, which is maintained by the platform on a website that is only accessible to the workers, and is different from the website which is meant for marketing purposes and for the clients. Such platforms are not part of the analysis in this chapter but are discussed in section 3.3.2.

### 2.1.2 Location-based platforms

The activity of location-based platforms centres on taxi and delivery services, which have been the subject of discussion and scrutiny in recent years because of the way in which platform companies are mediating the work opportunities of a growing number of workers, with potential implications for the future of work. Digital labour platforms in these two sectors have grown rapidly with the help of venture capital funding (see section 1.5).

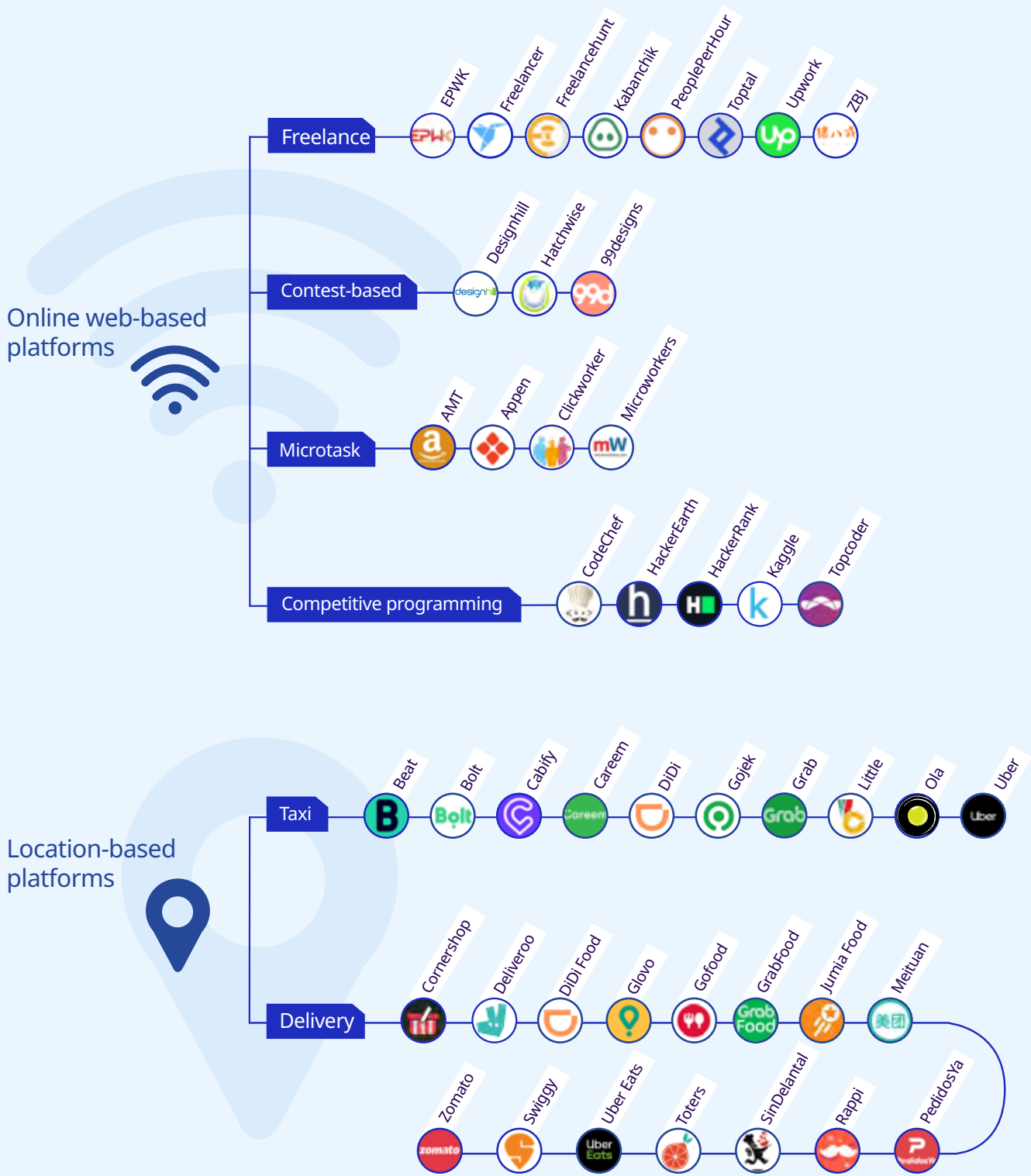
- ▶ *Taxi platforms* such as Bolt, Careem, Grab, Gojek, Little, Ola and Uber facilitate ride-hailing services by connecting customers seeking a ride with workers offering their services through the platform. Customers are updated at every step, provided with an approximate waiting time, an estimated fare and ride duration, and have the ability to track their driver and their ride in real time through their mobile application.



<sup>3</sup> Including logo and identity design, web and app design, business and advertising, clothing, arts and illustration, packaging, book and magazine design, among others.

<sup>4</sup> Including data cleaning, categorization, tagging, sentiment analysis, creating and moderating content, video and audio transcription, among others.

► Figure 2.1 Types of digital labour platforms



Source: ILO elaboration.

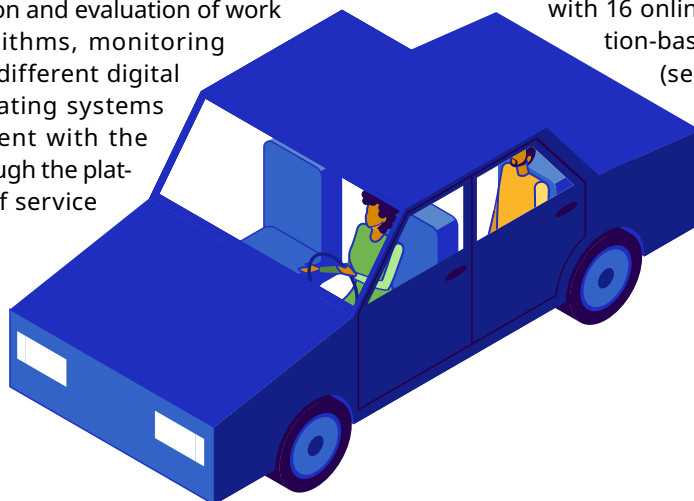
► *Delivery platforms* such as Deliveroo, Glovo, Jumia Food, Rappi, Swiggy and Zomato facilitate transactions between customers, workers, and business clients (such as restaurants, supermarkets and pharmacies). They provide customers with a range of products at a competitive price without the customers having to leave their physical location, and business clients with a wider customer network (see section 3.2). A different type of delivery platform is also emerging, which has its own grocery warehouse or ghost kitchens (also called virtual or cloud kitchens), which can only be accessed by consumers through the app (Lee 2020). This model draws on the principles of retail e-commerce platforms, such as Amazon, where a bricks-and-mortar store is absent. It enables delivery platforms to reduce costs and expand their businesses while also delivering food and groceries, and has been growing during the COVID-19 pandemic. Some of these ghost kitchens also link up with delivery platforms and provide food delivery services.

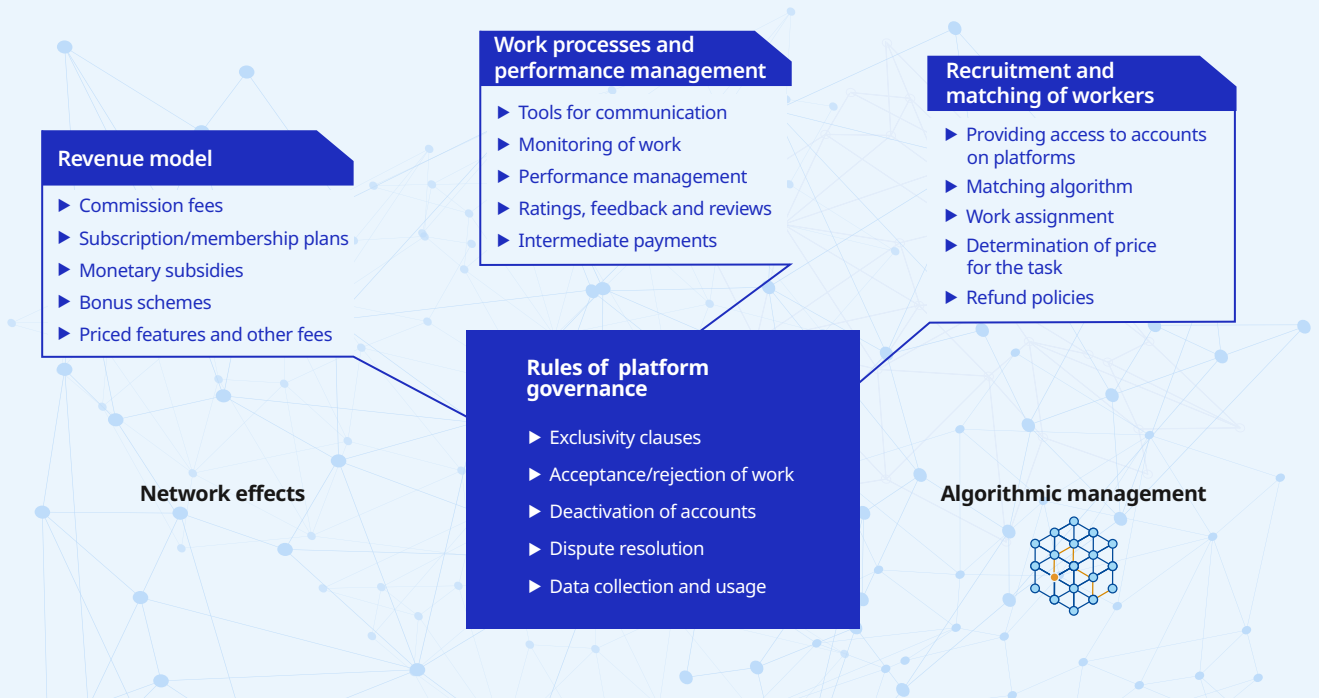
While a wide range of tasks are mediated through online web-based and location-based platforms, it is possible to identify some common elements or practices in the business model across these different types of platforms. These include price-setting and remuneration-setting mechanisms, charging of commission fees to workers and clients, matching of workers with clients, allocation and evaluation of work through algorithms, monitoring of work using different digital tools, use of rating systems and engagement with the workforce through the platforms' terms of service

agreements (see also Aleksynska 2021; Moore and Joyce 2020). These different elements play an important role in shaping working conditions on digital labour platforms.

This chapter reviews the business strategies of 31 selected platforms that were covered by the ILO worker surveys (see Chapter 4); it also includes some other prominent platforms in order to better understand the functioning of the digital labour platform business model (see figure 2.1). Some of the digital labour platforms were established at the turn of the century, while others have emerged in the past decade, and are emulating the existing platform business model.

Platform business strategies are based on some of the key elements described below, and some of the location-based platforms also adapt their strategies to their national or legal contexts (Aleksynska 2021). The business strategies adopted by the platforms reviewed in this chapter can be encapsulated in four interlinked key elements: revenue model (commission fees and subscription plans); recruitment and matching of workers with clients; work processes and performance management; and rules of platform governance (see figure 2.2). The analysis of these four elements is based on the terms of service agreements of the respective platforms and on information from their websites (see [Appendix 2B](#)), as well as on interviews conducted with 16 online web-based and location-based platform companies (see [Appendix 2A](#) for the list of platforms). The different elements are discussed in turn in the next four sections.



► **Figure 2.2 The platform business model: Business strategies**

Source: ILO, based on the concepts outlined in Moazed and Johnson (2016).

## ► 2.2 Revenue model

A key element in the success of a platform is whether it can attract a sufficient number of users (clients or customers and workers) and create network effects. The pricing strategy of a platform is an important instrument for leveraging network effects and also limiting multi-homing,<sup>5</sup> as this can have an impact on its potential revenues and profits (Cusumano, Gawer and Yoffie 2019; Rochet and Tirole 2003). As part of their pricing strategies, platforms sometimes incentivize one side of the platform through subsidies, which can motivate the other side to join (asymmetric); alternatively, they sometimes provide incentives to both sides (symmetric) to attract users. For instance, on taxi platforms both the customers (low cost of rides) and taxi drivers (bonuses or other financial incentives besides per-ride compensation) are

subsidized (Cusumano, Gawer and Yoffie 2019; Horan 2019). Platforms become potentially attractive to clients only when the available number of workers actively participating on them reaches a certain limit, or critical mass (Liu et al. 2019). The pricing on digital labour platforms is thus dependent on the available pool of workers on the supply side and the number of clients on the demand side.

► The pricing strategy of a platform is an important instrument for leveraging network effects.

<sup>5</sup> Multi-homing refers to users signing up on multiple platforms. For instance, when a delivery worker signs up on two or more platforms such as Cornershop, Rappi and Uber Eats to access work, then the worker is said to be multi-homing.




The pricing strategy adopted by platforms to appeal to clients or customers and workers includes setting the price for the task, charging different types of fees, and providing subscription plans. The different fees charged and the subscription plans offered across the various platforms are presented in tables 2.1 and 2.2 for online web-based platforms, and tables 2.3 and 2.5 for location-based platforms.

## 2.2.1 Freelance and contest-based platforms

The price setting on freelance platforms varies depending on the projects or tasks. Workers usually display their hourly rates in their profiles, and the rates are then negotiated with the client. On some platforms, such as Freelancer, PeoplePerHour and Upwork, the price can be determined on an hourly basis or fixed price based on the tasks involved. On contest-based platforms, such as 99designs, Designhill and Hatchwise, the price that clients pay for a particular contest is set by the platform through its subscription plans. The price varies depending on the contest category (for example, labelling, logo, app design) and the subscription plan chosen. The 99designs platform allows clients to set the price for both one-to-one projects and contests, but for the latter it specifies that their price has to be above a minimum threshold corresponding to the price of the least expensive subscription plan.

Freelance and contest-based platforms charge commission fees to the platform worker, while the client is often subsidized and either pays a lower fee for its account to be processed or no fee at all. Some exceptions exist, such as Toptal, which does not seem to charge workers commission fees.

Platforms compete with each other mainly through their pricing strategies, which, as a result, change constantly. For instance, Upwork made significant changes to its pricing model in May 2016: from charging workers a flat rate of a 10 per cent commission fee it moved to a tiered structure (5 to 20 per cent) based on the amount earned with a particular client (see table 2.1). The pricing model for business clients was also changed to stimulate more business by charging less to clients to whom

 The commission fee charged by freelance and contest-based platforms to workers is higher than that charged to clients.

it provided a large volume of services (Cusumano, Gawer and Yoffie 2019; Pofeldt 2016). Furthermore, in 2019 it made some more changes to its pricing model by introducing new paid memberships for clients and new “connects” pricing for workers to bid for projects (Upwork 2019). In 2020, more changes were introduced to the “connects” system: this allowed workers, including new workers, to have free “connects”, and additional “connects” to be allocated to workers depending on their subscription plans. Similarly, in China, to expand its market share and attract new workers, the platform Zhubajie (ZBJ) moved from a “pure commission model”, whereby it charged a 20 per cent commission between 2005 and 2012, to removing all service charges for projects, except for design competitions and piece-rate projects, in 2015. The platform was able to adopt the strategy of subsidizing workers and clients thanks to the availability of large venture capital funds (2.6 billion Chinese yuan or US\$402 million) (Chen, forthcoming).

The commission fee charged by freelance and contest-based platforms to workers is higher than that charged to clients on most platforms being analysed; it is a percentage of the negotiated price for the task or service and varies between 20 and 35 per cent. This leaves workers with between 80 and 65 per cent of their negotiated price as earnings and has implications for their income security (see section 4.2.2). Some freelance platforms, such as Upwork and PeoplePerHour, reduce the worker’s commission fee to 5.0 or 3.5 per cent if the worker provides regular services to the same client and has earnings in excess of US\$10,000 or US\$7,000, respectively. This in effect locks workers into the platform, requiring them to build up their reputation and work relationship with the client in order to obtain repeated contracts and reduce their commission fees. This practice is also adopted by some contest-based platforms, for example 99designs.

► Table 2.1 Revenue model of selected online web-based platforms, January 2021

	Clients					Workers			
	Commission fee	Maintenance fee	Transaction fee	Deposit	Additional fee <sup>5</sup>	Commission fee	Maintenance fee	Transaction fee	Additional fee <sup>5</sup>
<b>Freelance platforms</b>									
Upwork	-	-	3% <sup>1</sup>	-	-	500: 20% 501-10000: 10% > 10000: 5%	-	\$0-30	\$0.15-12
PeoplePerHour	£0-0.6 + 10%	\$9.95 <sup>2</sup>	2.5% <sup>3</sup>	-	\$15	350: 20% 351-7000: 7.5% >7000: 3.5%	\$9.95 <sup>2</sup>	\$0-29.99 or 2.5% <sup>3</sup>	\$8.95-29.95
Freelancer	\$3 or 3%	\$10 <sup>2</sup>	\$0-0.30 + 2.3%; \$15	-	\$5-35; 50% of contest prize	0-20%	\$10 <sup>2</sup>	\$0-25	0.75% of bid amount \$0.50-50
Toptal	-	-	-	\$500	-	-	-	-	-
<b>Contest-based platforms</b>									
Designhill	5%	-	5% <sup>1</sup>	-	-	25-35%	-	✓	-
Hatchwise	-	-	-	-	\$39	-	-	✓	-
99designs	5%	-	-	-	-	5-15%; 20% of the first \$500 earned <sup>4</sup>	-	✓	-
<b>Microtask platforms</b>									
AMT	20-40%	-	-	-	-	-	-	2.9-3.9%	-
Clickworker	20-40%	-	-	-	-	-	-	-	-
Appen	20%	-	-	-	-	-	-	-	-
Microworkers	7.5%	\$5 <sup>2</sup>	-	-	-	-	\$5 <sup>2</sup>	3-7.50%	-

<sup>1</sup> Payment processing fee. <sup>2</sup> For inactive accounts. <sup>3</sup> Currency conversion fee. <sup>4</sup> Client introduction fee. <sup>5</sup> Additional fee for clients includes fees for prioritizing or highlighting their projects or tasks; and for workers includes fees for making their profiles more visible, and also for purchasing connects or credits to bid for projects.

**Source:** ILO compilation based on respective platform websites, terms of service agreements, field surveys and interviews.

The practice of charging commission fees is prevalent among online freelance platforms that operate globally as well as those that operate regionally, such as Kabanchik and FreelanceHunt in Ukraine and 680 and ZBJ in China. Some platforms in China (such as 680), however, also require

workers to make a security deposit for software projects of about 30 to 50 per cent of the project reward to the platform until the completion of work (Chen, forthcoming). This practice is unique for workers and puts an additional burden on workers to raise the amount in order to access

specific work on these platforms. The practice of requiring a security deposit is targeted towards the clients in other cases, and is much more prevalent on platforms established in the United States or Europe which often provide escrow services (such as PeoplePerHour and Upwork). This ensures that the worker does not bear the risk of financial loss if the client disappears, or if an order is cancelled, or if the fees are not paid or only partially paid, which could also threaten the smooth functioning of the platform (Shevchuk and Strebkov 2017). The escrow services also work to the client's advantage as they ensure that if the client is not satisfied with the services, then no payment is due.

The revenue model of freelance and contest-based platforms is based on different types of fees and subscription plans that are charged to workers and clients. To improve their intermediation services and to manage the workforce on the platforms, some freelance and contest-based platforms offer workers the option of buying a "subscription plan" or of bidding for projects that are posted by the clients. Platforms such as Freelancer offer various subscription plans that are priced from US\$0.99 to US\$69.95 per month, providing the workers with various benefits and services, which include giving their profile greater visibility, providing access to a certain number of bids per month, and being able to follow employers, among others. Design platforms such as Designhill also provide annual subscriptions ranging from US\$100 to US\$200 (see table 2.2). Upwork and PeoplePerHour have introduced "connects" or "proposal credits" that workers have to purchase to be able to bid for projects. Platforms also offer workers a range of other services such as "highlighting" or "featuring" their projects or proposals, for a fee, to enhance their visibility so that they stand out when clients search for workers on the platform. These fees are in addition to the commission fees that workers pay to the platform, which vary across the different platforms.

Workers are often encouraged to subscribe to paid services, as the algorithms used for the matching

process are set up in such a way that workers who have subscription plans or have purchased "connects" or paid an additional fee are more likely to get projects and tasks. This strategy helps the platforms to improve their intermediation service and attract clients, while transferring the costs of the matching process to the workers. In this system, since the workers depend on the platforms for their income, they often have little choice but to incur costs to increase their chances of finding work. This system could potentially present an obstacle for some workers from the global South, as they might not be able to access certain tasks for lack of adequate financial means; this could, consequently, negatively affect their earnings (see sections 4.2.1 and 4.2.2).

The clients, on the other hand, on some freelance platforms are invited to try the platform services free of cost initially, before they choose a "subscription plan" (see table 2.2). On the basis of the plan chosen, they are offered various support services and benefits. In addition to the subscription plans, freelance platforms offer large clients customized pricing and services based on their demand and budget. Toptal's revenue model is based only on customized pricing and the platform offers clients the option to hire workers on an hourly, part-time or full-time basis with a minimum requirement of services for 80 hours,<sup>6</sup> at prices ranging from US\$60 per hour (developers) to more than US\$8000 per week (finance experts) depending on the skills requirements.<sup>7</sup> The client is required to deposit an initial amount of US\$500 as security. The platform offers a "no-risk" trial of three experts for a position, and if the client is not satisfied, they are guaranteed to have their deposit back. This allows Toptal not only to ensure clients' satisfaction but also to establish a good reputation for the services it provides in the multi-sided market.

Contest-based design platforms offer two kinds of subscription plans to clients. Designhill and 99designs offer guaranteed contests, which are non-refundable. If no winner is selected the prize

<sup>6</sup> This information is based on an ILO interview with a "Supervisor" at Toptal.

<sup>7</sup> This information was obtained from the frequently asked questions (FAQs) section of the Toptal website, August 2020.

## ▶ The fees charged to workers significantly contribute to platform revenue.

amount is equitably distributed among the participating designers. For other contests there is a 100 per cent “money-back guarantee”, which enables the platforms to attract clients. These platforms offer clients varying pricing plans for each contest and the platforms often compete with one another on the pricing of the plans and services offered, as in traditional markets. Among such offerings are access to top designers, access to a greater number of contest entries, and prioritized support.

The fees charged to workers significantly contribute to platform revenue, particularly among freelance platforms. For instance, about 90 per cent of Upwork’s revenue for 2019 came from the “marketplace”, and it earned 62 per cent of its US\$300 million revenue from different types of fees charged to workers, compared to 38 per cent from the clients (Upwork 2019, 107). This is despite the fact that Upwork provides “payroll services” via a third party, and customized services for 30 per cent of Fortune 500 companies (Upwork 2019). The practice of charging fees to workers may be contrary to international labour standards,<sup>8</sup> which prohibit agencies, employers and intermediaries from charging fees (see box 2.1; see also Chapter 5 for further discussion). Despite the practice of charging fees to raise revenues, most of the platforms have a history of making net losses, which brings into question the sustainability of the business model. Upwork, for instance, had an “accumulated deficit of US\$172 million” as of December 2019, and the platform is uncertain about achieving or sustaining profitability (Upwork 2019, 11).

### ▶ Box 2.1 Private employment agencies

Temporary agency work as practised in recent decades is a regulated form of work. It involves a triangular employment relationship wherein a worker is employed by an employment agency that matches them with an employer. The ILO Private Employment Agencies Convention, 1997 (No. 181), defines a private employment agency as a natural or legal person engaged in “matching offers of and applications for employment” and/or “employing workers with a view to making them available to a third party which assigns their tasks and supervises the execution of these tasks” (Art. 1).

The World Employment Confederation (WEC), a global representative of private employment services, welcomes the “online talent platform technology” and embraces platforms, emphasizing the value that these bring to jobseekers. It asserts, however, that in order to ensure a level playing field platforms must comply with global standards for private employment services, mainly “the ban to charge recruitment fees to workers” and the “compliant and confidential use of personal data” (WEC 2020, 2). This is in accordance with ILO Convention No. 181, which provides that agencies “shall not charge directly or indirectly, in whole or in part, any fees or costs to workers” (Art. 7). The Convention also regulates the processing of workers’ personal data to ensure that their privacy is protected and respected.

The WEC maintains that platform work is in essence a new way of organizing work, and that given its diverse nature it cannot be adequately regulated by a one-size-fits-all regulation. Rather, platform work calls for the redesign of existing labour market institutions to accommodate a more dynamic world of work, together with a minimum floor of rights which includes respect for the ILO Fundamental Principles and Rights at Work and which promotes, among others, portability and transferability of benefits across jobs and sectors, as well as access to training and lifelong learning (WEC 2020).

<sup>8</sup> The ILO Protection of Wages Convention, 1949 (No. 95), and the Private Employment Agencies Convention, 1997 (No. 181).

► Table 2.2 Subscription plans for online web-based platforms, January 2021

	Clients			Workers		
	Free trials	Subscription plan	Customized service contract	Free trials	Subscription plan	Customized service contract
<b>Freelance platforms</b>						
Upwork	✓	\$49.99/ month	✓	-	\$14.99/ month	-
PeoplePerHour	-	Based on points system	✓	-	-	-
Freelancer	✓	✓	✓	✓	\$0.99–69.95/ month	-
Toptal	✓	-	✓	-	-	-
<b>Content-based platforms<sup>1</sup></b>						
99designs	-	\$299–1299	-	-	-	-
Designhill	-	\$249–999	✓	-	\$100–200 <sup>2</sup>	-
Hatchwise	-	\$89–399	-	-	-	-
<b>Competitive programming platforms<sup>3</sup></b>						
Topcoder	-	-	✓	-	-	-
HackerRank	✓	\$249–599	✓	-	-	-
HackerEarth	✓	\$119–279	✓	-	-	-
Kaggle	✓	✓	✓	-	-	-
CodeChef	-	-	✓	-	-	-
<b>Microtask platforms</b>						
AMT	-	-	✓	-	-	-
Clickworker	-	-	✓	-	-	-
Appen	-	-	✓	-	-	-
Microworkers	-	-	✓	-	-	-

<sup>1</sup> Subscription plans for a logo design contest; plans vary across different contest types. <sup>2</sup> Designhill offers its designers annual designer membership subscription plans. <sup>3</sup> Subscription plans for recruitment purposes. These charges are monthly, to be billed annually.

**Source:** ILO compilation based on platform websites and terms of service agreements.

## 2.2.2 Competitive programming platforms


On competitive programming platforms, the prices for subscription plans and for competitions are fixed by the platforms themselves. The revenue model of these platforms is largely based on charging clients and includes two types of revenue streams (see table 2.2). First, platforms provide clients with recruitment services to which they can subscribe through various plans proposing a range of services and benefits. Second, they charge fees to clients wherein they provide customized services and develop a range of projects, from prototypes to the development of new algorithms, based on specific client requirements. Both recruitment and customized services are provided by means of competitions or “hackathons” in which the platform community of developers, programmers or data scientists takes part. The Topcoder platform also offers “Talent as a Service” (TaaS) programmes to clients and recommends workers from the Topcoder community of programmers to meet specific skills requirements.

Competitive programming platforms do not charge fees to developers and programmers; they build communities of programmers and developers who can provide top-quality services while at the same time honing their skills. Workers on these platforms are rewarded through monetary prizes and non-monetary benefits (Boudreau and Hagiú 2009), which include the opportunity to participate in regular contests and competitions, access to software libraries, rankings and skills ratings, peer reviews, and for highly rated or ranked programmers, sharing of their profiles with companies for hiring purposes.

## 2.2.3 Microtask platforms

On microtask platforms the prices are usually determined unilaterally, either by the platform or by the client. On AMT, for instance, clients determine the price for tasks and decide whether to accept the completed task and pay workers, while Clickworker specifies on its platform that for participants from Germany, the price should be equivalent to the German minimum wage. Appen and Microworkers have a basic formula to estimate the cost of a job, taking into consideration any specifications indicated by the client and all related costs.

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 On microtask platforms the prices are usually determined unilaterally, either by the platform or by the client.

Workers on microtask platforms are not charged a commission fee; instead, clients are charged a fee that is determined in relation to the amount paid to the platform workers. The commission fee is typically assessed and charged at the time of payment for the work performed, and varies between 7.5 and 40 per cent.<sup>9</sup> Some platforms, such as AMT and Microworkers, offer additional services to their clients if they want to target specific groups of workers based on age, sex, experience or nationality, for which the platforms charge an additional fee in terms of either a percentage of the task or a fixed amount per assignment (ranging from US\$0.05 to US\$1.00 on AMT).<sup>10</sup> Microtask platforms also offer custom-tailored services based on client requirements.

<sup>9</sup> Based on information provided by the platforms covered by the microtask survey.

<sup>10</sup> This information is based on surveys conducted on these two platforms in 2017.

## 2.2.4 Taxi platforms

The ride fare on taxi platforms is determined by the platform using algorithms that are based on factors such as distance, time taken to reach the destination, fuel cost, type of vehicle and financial capacity of the customers to spend in a particular geographical area of the city.<sup>11</sup> During periods of high demand, platforms also use surge pricing algorithms that allow them to determine the ride fare based on demand and supply.

The revenue model of taxi platforms is based on charging commission fees to the taxi driver. The commission fee, which is a percentage of the ride fare, varies within and between platform companies. For instance, the commission fee charged by Uber is 25 per cent in most countries under consideration (see table 2.3; section 4.2.2 provides additional details), but in some countries where there is intense competition, a lower fee is charged (20 per cent in India; 5 per cent in Kenya). Companies also vary the commission fee based on the income earned by the drivers<sup>12</sup> and raise revenues through their surge pricing algorithms (Lee et al. 2015).

Taxi platforms also try to motivate and retain workers and clients or customers through gamification and rewards. Gamification for taxi drivers, which takes the form of offering incentives or bonuses to stimulate their engagement, was reported by three quarters of app-based taxi drivers (see section 4.2.2). The strategy adopted to attract taxi drivers differs across countries depending on local demand, cultural context and the presence of business competitors. For example, Uber's offerings of bonuses and incentives vary considerably between countries (see table 2.4). Among Uber drivers who reported being offered bonuses and incentives, in most countries a high proportion indicated being rewarded for completing a certain number of rides. Another way in which platforms incentivize drivers is by offering them bonuses during specific times (peak demand), or for working asocial hours, a practice that is quite popular among all taxi platforms. A significant proportion of Uber drivers in Chile, Lebanon and Ukraine reported receiving similar offers.

Such bonus schemes usually depend on the number of rides accomplished in a day or a week; the drivers are incentivized to meet targets, which can result in working long hours to earn the extra money promised (Surie and Koduganti 2016; see section 4.2.3). Over time, however, the targets are increased and the rewards reduced, which also affects the incomes of the taxi drivers. The pricing mechanisms followed by taxi platforms can also lead to extensive litigation (see box 2.2). Moreover, drivers often find it hard to meet the final target, as the algorithm often does not assign enough rides when drivers are getting close to their target (Rosenblat and Stark 2016). This situation could also be due to oversupply of workers competing for rides on these platforms (van Doorn 2017). To encourage clients or customers to use their platforms, the companies provide rewards or coupons or subsidize the costs of rides, keeping them low compared to traditional taxis or other companies.

Many taxi platforms are able to provide subsidies, bonuses and other incentives because of funding made available by venture capital and other funds (see section 1.5). This strategy allows these platforms to have network effects, enter new markets (countries) and expand their customer base there. Uber, which is a dominant player in the taxi sector, has raised US\$25.2 billion from 28 funding rounds of venture capital (to January 2021),<sup>13</sup> expanded its services in 69 countries and had an accumulated deficit of US\$16.4 billion in December 2019 (Uber 2020a). Uber is able to sustain its business and market share largely as a result of the availability of funds from venture capital, which allow it to subsidize both sides of the market and also to penetrate a number of new markets (Cusumano, Gawer and Yoffie 2019; Horan 2019). The investors are betting on a winner-takes-all outcome, wherein Uber would emerge as a market leader and then reduce the subsidies or even increase the commission fees charged to the drivers, or raise the price of the rides (Cusumano, Gawer and Yoffie 2019). Along with the rise in digital labour platforms, an alternative platform structure, the "platform cooperative", which is collectively owned and funded (see box 2.3), is increasingly gaining ground.

<sup>11</sup> These indicators are based on ILO interviews with taxi platform companies.

<sup>12</sup> Based on ILO interviews with taxi platform companies.

<sup>13</sup> Based on information collected from Crunchbase database.

► Table 2.3 Revenue model of selected taxi platforms in selected countries, 2019–20

	Clients		Workers		
	Maintenance fee	Transaction fee	Commission fee	Maintenance fee	Transaction fee
<b>Uber</b>					
Chile	✓	✓	25% (18–35)	✓	✓
Ghana	✓	✓	25% (15–25)	✓	✓
India	✓	✓	20% (15–44)	✓	✓
Kenya	✓	✓	5% (5–25)	✓	✓
Lebanon	✓	✓	25%	✓	✓
Mexico	✓	✓	25% (10–37)	✓	✓
Ukraine	✓	✓	25% (10–35)	✓	✓
<b>Careem</b>					
Lebanon	✓	✓	20% (15–25)	✓	✓
Morocco	✓	✓	25% (10–40)	✓	✓
<b>Bolt</b>					
Ghana	✓	✓	20% (10–25)	✓	✓
Kenya	✓	✓	20%	✓	✓
Ukraine	✓	✓	15% (10–40)	✓	✓
Ola (India)	✓	✓	20% (15–40)	✓	✓
Little (Kenya)	✓	✓	5% (5–20)	✓	✓
Grab (Indonesia)	✓	✓	20% (5–40)	✓	✓
Gojek (Indonesia)	✓	✓	20% (10–33)	✓	✓

**Notes:** The data on commission fees for taxi platforms is based on the ILO selected country surveys of taxi drivers (see [Appendix 4A](#)). The figures shown are the commission fees (2019–20) that were mentioned most often by respondents per country and platform. Figures in parentheses are the range of commission rates mentioned by taxi drivers.

**Source:** ILO compilation based on respective platform websites, terms of service agreements, field surveys and interviews.

► Table 2.4 Criteria for receiving bonuses or incentives on Uber, selected countries (percentage of respondents)

	New drivers	Working asocial hours (night or holiday)	Reaching or exceeding an hourly threshold	Reaching or exceeding a certain number of rides	Working during high-demand hours
Chile	1	25	28	74	28
Ghana	4	4	27	92	3
India	0	0	8	98	12
Kenya	11	27	33	78	0
Lebanon	3	41	8	58	65
Mexico	0	4	11	88	38
Ukraine	4	20	33	85	42

**Note:** Figures refer to workers who reported being offered bonuses or incentives by Uber.

**Source:** ILO selected country surveys of app-based taxi drivers (2019–20).



► **Box 2.2 Pricing by taxi platforms and potential for litigation:  
The case of Ola and Uber in India**

Litigation in India illustrates the complexity and uncertainty of applying competition law to platform work. Uber entered the Indian market in 2013, by which time another local platform company, Ola, already had a three-year head start. MERU (a radio taxi company) alleged that both Ola and Uber subsidized the cost of rides to attract customers,<sup>1</sup> and to compete with traditional taxi drivers and taxi companies.

Both Ola and Uber aggressively recruited drivers by providing them with financing to purchase or lease vehicles, and various other incentives (Surie 2018). Uber gave incentives of 2,000 rupees (US\$31.2) for completing 12 rides per day in early 2016 to drivers in New Delhi; although by December 2016 it had changed its incentive model to offering such incentives just once a week for completing 40 to 50 rides, and also increased the commission rate from 20 to 25 per cent (Dhillon 2018). Similarly, an Ola driver noted that he was earning as much as 75,000 rupees (US\$1028.7) to 100,000 rupees (US\$1371.6) a month working 12–13 hours a day in 2016, but by 2017 the amount had dropped to 40,000–45,000 rupees (US\$548.6–617.2) a month working 15–16 hours a day, due to the changes in the trip incentive model (Ayyar 2017).

Furthermore, platform drivers were also incentivized to recommend other drivers and were paid a one-off sum per successful referral, which varied across the cities. They were also offered free insurance, free registration for vehicles, cash discounts and lucky draws for domestic appliances. The measures helped Uber to create network effects in the Indian market and to challenge its competitor Ola and the traditional taxi sector. The latter has since then dwindled in numbers in many Indian cities. In response, Ola introduced the minimum guarantee scheme to attract workers and assured them of a minimum amount after meeting a particular target.<sup>2</sup>

MERU filed a series of complaints before the Competition Commission of India<sup>3</sup> alleging that Ola and Uber were engaging in practices contrary to Sections 3 (anti-competitive agreements) and 4 (abuse of dominant position) of the Competition Act 2002. On the one hand, the Competition Commission decided in Ola and Uber's favour and found that given the nature of competition within the radio taxi markets of Chennai, Hyderabad, Kolkata and Mumbai, *prima facie* dominance of Uber and Ola individually could not be made out (para. 41), and with regard to Section 3 the allegation did not hold merit (para. 37). On the other hand, MERU successfully appealed to the Competition Appellate Tribunal on an earlier case of 2015 that it had lost,<sup>4</sup> with regard to alleged predatory pricing and the Tribunal reversed the Commission's decision and ordered an investigation into MERU's allegations.<sup>5</sup> Uber subsequently filed an appeal before the Supreme Court of India against the Tribunal's reversal, which was rejected by the court in September 2019.<sup>6</sup> The experience in India is not necessarily reflective of other jurisdictions, where both the relevant competition legislation and the business practice might differ substantially.

<sup>1</sup> From Case No. 96 of 2015: Rates for Uber Black: November 2013, 20 rupees/km; June 2014, 18 rupees/km; November 2014, 18 rupees/km; February 2015, 12 rupees/km. While the traditional taxi rates were 23 rupees/km in November 2013. <sup>2</sup> Information based on ILO interviews with workers. <sup>3</sup> Competition Commission of India, *Meru Travel Solutions Pvt. Ltd. and ANI Technologies Pvt. Ltd. and Uber India Systems Pvt. Ltd. & Ors.* Case No. 25–28 of 2017. <sup>4</sup> Competition Commission of India, *Meru Travel Solutions Pvt. Ltd. and Uber India Systems Pvt. Ltd. & Ors.* Case No. 81 and No. 96 of 2015. <sup>5</sup> Competition Appellate Tribunal, *Meru Travels Solutions Pvt. Ltd. v Competition Commission of India & Ors.*, Appeal No. 31 of 2016. <sup>6</sup> Supreme Court of India, *Uber India Systems Pvt. Ltd. v Competition Commission of India & Ors.*, Civil Appeal No. 641 of 2017.

### ► Box 2.3 Platform cooperatives

Platform cooperatives are collectively owned and have been gaining in popularity over the past decade. Platform cooperatives are designed and owned by their members, who usually pay a small contribution from their earnings towards the maintenance and development of the platform.<sup>1</sup> Given that work on these platforms is co-determined and decisions are taken based on participatory democratic processes, platform cooperatives are likely to be more transparent and accountable to their members than digital labour platforms in which many functions are algorithmically managed.

There are currently various platform cooperatives operating in a number of sectors, from taxi (such as Green Taxi Cooperative and ATX co-op Taxi, in the United States and Eva in Canada) and delivery (such as Coopcycle<sup>2</sup>) services to house-cleaning (such as Up&Go, New York City) and e-commerce (such as Fairmondo, Germany). Their vision is to create a genuine “sharing” economy, committed to fair labour practices. For instance, Eva is a cooperative that allows driver members, rider members and worker members to be part of the cooperative. The drivers earn about 15 per cent more than on other available taxi platforms in the region.<sup>3</sup> The cooperative structure of many of the platforms has also allowed their members to self-organize efficiently during the COVID-19 pandemic by equitably distributing tasks among themselves.

<sup>1</sup> This contribution tends to be much lower than the commission charged by the digital labour platforms studied in this report. <sup>2</sup> Coopcycle is a network of bike delivery cooperatives that operates in Belgium, Denmark, France, Poland, Spain, the United Kingdom and the United States. <sup>3</sup> For more details, see: <https://eva.coop/#/driver>; <http://cities-ess.org/topics/eva-coop/?lang=en>.

## 2.2.5 Delivery platforms

On delivery platforms, the delivery fare for the workers is determined by the platform using algorithms that are based on a number of factors, such as demand and distance, among others, and it is only once the delivery workers have accepted the delivery that the fares are made available to them.

Delivery platforms charge restaurants, shops and supermarkets a commission fee and charge customers a delivery fee. The commission fee charged to restaurants or supermarkets ranges between 12 and 35 per cent depending on the platform and country (see table 2.5). Delivery platforms also charge customers delivery fees: for instance, Cornershop, Jumia Food and Uber Eats charge a minimum delivery fee to the customer, while on other platforms delivery fees vary based on factors such as distance (Deliveroo and Glovo) or a percentage of the purchase price (Jumia Food and PedidosYa). As reported by many restaurants, platforms also charge business clients higher commission fees if they offer their products through multiple platforms. Delivery platforms often state in the exclusivity clauses of contracts that they will charge lower commission fees for clients working exclusively with them.

Some of the delivery platforms also provide discounts to customers as a strategy to expand their business in the specific region or area. For instance, Toters in Lebanon gave a 50 per cent discount to customers for their purchase from certain restaurants and shops, and these costs were borne either by the platform or at times jointly with the restaurants or shops. In the event of cancellation, customers are often charged a cancellation fee that comprises the price of the products ordered and the delivery fee, if a delivery worker has already been assigned the task. Some platforms also offer premium memberships to customers, whereby the delivery fee is waived if the orders exceed a certain amount.

► Table 2.5 Revenue model of selected delivery platforms in selected countries, 2019–20

	Clients (restaurants, shops and supermarkets)		Customers
	Commission fee (%)	Commission fee per order (US\$)	Delivery fee per order (US\$)
<b>Chile</b>			
Rappi	19–28	1.95–5.47	1.40–5.61
Uber Eats	15–33	1.68–2.67	1.68–3.09
PedidosYa	25–28	1.25–4.91	1.25–5.61
Cornershop	15	5.47–6.87	5.47–6.87
<b>India</b>			
Swiggy	22–24	–	–
Zomato	12–25	–	–
<b>Lebanon</b>			
Toters	20–25	–	–
Zomato	10–20	–	–
<b>Kenya</b>			
Uber Eats	15–25	–	–
Jumia Food	16–20	–	1.37
Glovo	15–20	–	–
<b>Ukraine</b>			
Glovo	28–35	–	–
<b>Mexico</b>			
Uber Eats	26–35	–	–
DiDi Food	20–30	–	–
SinDelantal	22–30	–	–

**Source:** ILO compilation based on respective platform websites, terms of service agreements, field surveys and interviews with restaurants, shops or supermarkets in the respective country.

## 2.3 Recruitment and matching of workers with clients

Digital labour platforms are transforming human resource practices and the employment relationship, which has major implications for the future of work. This section discusses recruitment practices, matching of workers with clients and assignment of tasks.

### 2.3.1 Work relationships on platforms

There are two types of work relationship on digital labour platforms: workers are either directly hired by the platforms (internal employment) or their work is mediated through the platforms (external employment). Figure 2.3a shows the number of employees directly hired by online web-based platforms, which varies between 50 (PeoplePerHour) and 800 (Appen). In contrast, about 2.4 million skilled workers were registered globally on PeoplePerHour as of January 2021.

The number of employees hired directly by location-based platforms is far higher than on online web-based platforms (see figure 2.3b). On location-based taxi platforms, this number varies between roughly 1,200 (Careem) and 26,900 (Uber), although this represents only a fraction of the approximately 5 million

There are two types of work relationship on digital labour platforms: internal employment or external employment.

drivers in 69 countries around the world for whom Uber mediates work (Uber 2020b). A number of delivery platforms also have a higher number of directly hired workers (more than 5,000) than other types of platforms; Meituan, for example, has 54,580 full-time employees. This is largely because many of these companies hire delivery workers as employees to establish a market base. Once their objectives are achieved, however, some of them change their labour practices and hire workers on a part-time or a piece-rate basis. For example, Delivery Hero (Germany), PedidosYa (Argentina) and Swiggy (India) initially hired workers on a full-time basis, but once they had established their market position, they terminated many of the full-time contracts and hired

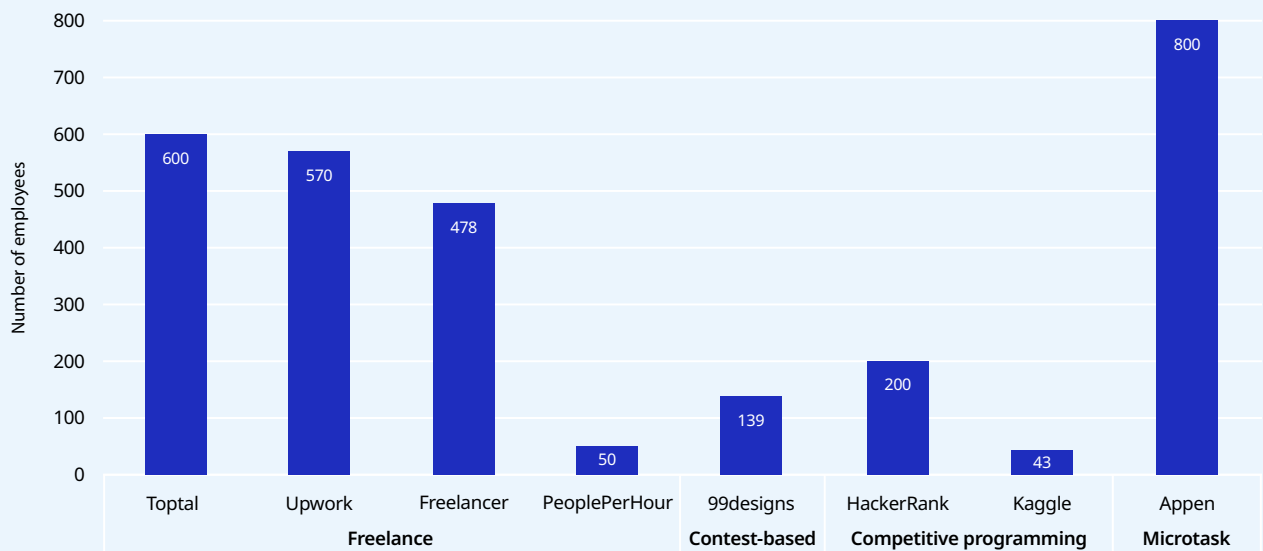


workers on a per-task basis, and have been progressively reducing the number of workers directly employed. In the case of Meituan (China), the platform has been hiring workers through third-party staffing agencies (Sun, Chen and Rani, forthcoming). Among the platforms surveyed, the number of employees directly hired (internal employment) by platforms is a mere fraction of the number of workers whose work is mediated (external employment).

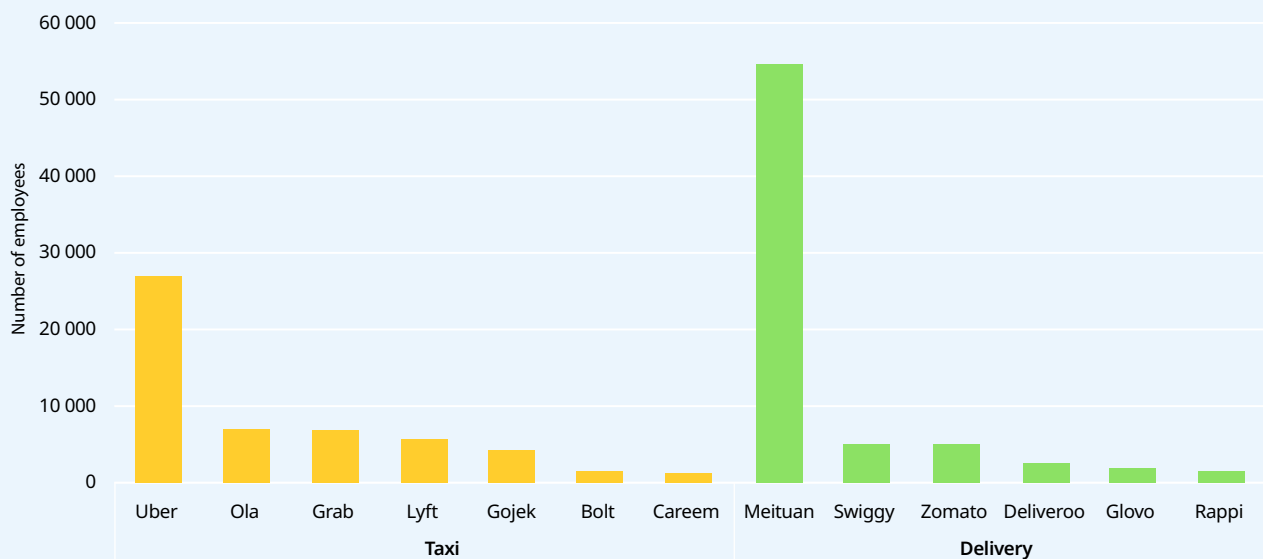
▶ The number of employees directly hired (internal employment) by platforms is a mere fraction of the number of workers whose work is mediated.

▶ **Figure 2.3** Number of employees directly hired by digital labour platforms, 2019–20

(a) Online web-based platforms



(b) Taxi and delivery platforms



**Sources:** Owler database, annual reports, filings by platform companies to the Securities and Exchange Commission of the United States and platform websites.

Workers directly hired by platforms have an employment relationship, while those whose work is mediated by platforms are typically considered by the platforms as “self-employed”, “independent contractors”, “third party service providers”, “designers”, “freelancers” and so on, and consequently do not have an employment relationship (see [Appendix 2B](#) for the different terms used by platforms for workers). These platforms justify their approach to their relationship with their workers on the basis that workers have the flexibility to choose their own work schedules (see Chapter 5 for more details). Furthermore, some platforms, such as AMT, Clickworker and Upwork, even specify that users of the platforms will not be offered employment related benefits such as sick leave, health insurance or retirement benefits.

Platform companies are able to devolve their responsibility for providing the requisite employment or social protection benefits to their workers and to save on labour costs. This also provides platforms with greater employment flexibility than traditional employment agencies, which rely on dependent employees (Schwellnus et al. 2019). Some industry executives have estimated that classifying platform workers as employees instead of independent contractors would cost platform companies 20 to 30 per cent more (Scheiber 2018). Uber mentions in its annual report that if drivers were to be classified as employees then it would have to “fundamentally change” its business model, which would “have an adverse effect on [its] business and financial condition” (Uber 2020a, 13). Similar consequences are also mentioned by online web-based platforms such as Upwork (Upwork 2019, 15). However, some companies such as Alto in the United States have come up with an alternative model and hire drivers as employees providing, for example, health benefits,

competitive wages based on hours worked, and paid time off.<sup>14</sup>

Related to the ongoing discussion on misclassification of platform workers, some location-based platforms offer insurance coverage for accidents and hospitalization at no extra cost to workers. Deliveroo’s insurance policy, for instance, covers riders from the moment they are online and for one hour after going offline, and provides supporting income when they are unable to work following injury. In France, notably, Deliveroo riders also benefit from paid sick leave – €30 per day for 15 days – provided they have completed at least 30 rides in the previous eight weeks. In-ride insurance and social protection benefits are offered to varying degrees by Uber depending on the country,<sup>15</sup> and in India all taxi platforms are obligated to provide health and life insurance to taxi drivers. Some of the delivery platforms (such as Swiggy) also provide medical and accident insurance coverage to workers and their family members.

With the spread of the COVID-19 pandemic, some delivery platforms are looking to improve working conditions and protections for those whose work they mediate. For instance, the CEO of JustEatTakeaway, one of the largest delivery platforms globally, recently emphasized: “We’re a large multinational company with quite a lot of money and we want to insure our people [...] We want to be certain they do have benefits, that we do pay taxes on those workers” (Josephs 2020). Good practices are also followed by some other delivery platform companies. These include BOX8, which has been providing food and grocery delivery in Indian cities since 2012, and which offers full-time contracts to its employees, and provides social protection benefits and incentives for upskilling.<sup>16</sup>

14 For more details, see: <https://www.ridealto.com/driver-application>.

15 Uber provides a range of protections, including accident, injury, illness, and paternity benefits for drivers and delivery workers in partnership with AXA in European markets and in partnership with Chubb in Australia and South Africa. For more details, see: <https://www.uber.com/en-GB/blog/supporting-drivers-with-partner-protection-from-axa/>; <https://www.uber.com/za/en/drive/insurance/>; <https://www.uber.com/en-AU/newsroom/partnersupportaustralia/>.

16 For more details, see: <https://www.taciturban.net.in/companies/box8/>.

### 2.3.2 Basic requirements for opening an account on platforms

Online web-based platforms adopt various strategies to build their talent pool, so as to attract clients. For this purpose, they verify the skill levels of workers before a platform account can be opened. At one end of the spectrum are **freelance platforms**, which conduct rigorous screening processes that can last from one to three weeks (e.g. Toptal), or have online skill tests<sup>17</sup> (e.g. Upwork) or a designer curation team that reviews applications by potential workers (e.g. 99designs). At the other end of the spectrum are **competitive programming** and **microtask platforms**, which anyone can join without their skills being vetted. Some platforms stipulate in their terms of agreements that they do not permit registration of people from countries that are subject to sanctions. Many platforms also reserve the power in their terms of service agreements to refuse registration of a “user” at their own discretion.

On **location-based platforms**, registration or onboarding is fairly straightforward, though in order to actually access and complete tasks on the platforms, workers have to meet certain additional requirements. In most cases, taxi drivers and delivery workers are required to provide themselves with the necessary equipment, such as a smartphone, vehicle (car, scooter or bicycle) and thermal backpack (in the case of delivery platforms). In some countries, taxi platforms lease cars to drivers. Platforms usually require formal identification, such as a driving licence, social security or identity card, and vehicle-related information, such as vehicle registration and insurance. In some cases vetting (such as criminal or other background checks) is imposed by regulations and can lead to more rigorous onboarding processes. For example, after incidents of sexual assault of passengers in India and China, Uber and DiDi introduced background checks (Uber 2020c; Yuan 2018).

<sup>17</sup> Upwork has recently discontinued its online skill tests.

<sup>18</sup> This information is based on ILO interviews with the platform companies.

### 2.3.3 Algorithmic matching of clients and workers

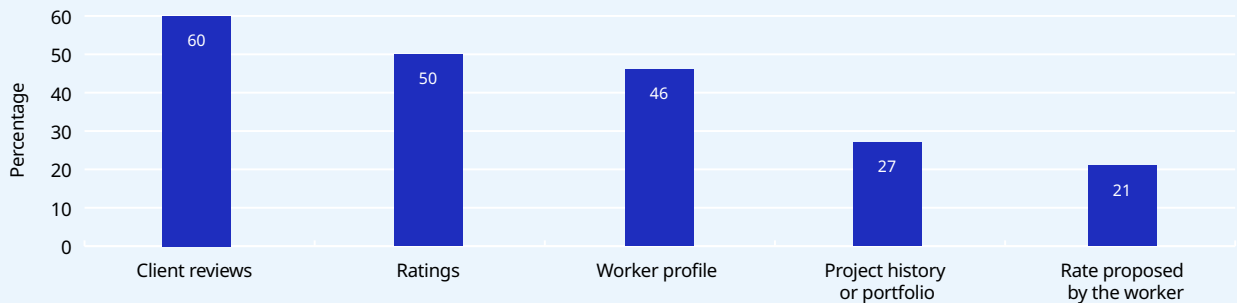
Platforms are introducing a paradigm shift in the conventional human resource process of how clients (demand) and workers (supply) are matched. Instead of assigning workers and tasks through human interaction, some platforms use fully automated matching processes for assignment of work. Workers are automatically matched to client requirements and assigned a task on the basis of a number of platform-specific indicators. These include a combination of worker ratings, worker profiles (such as expertise level and skills), client reviews, availability, time zones and hourly rates, among other factors. An analysis of 117 freelance and contest-based platforms shows that ratings (50 per cent) and client reviews (60 per cent) are the two major factors used in assigning tasks to workers (see figure 2.4). Other factors taken into consideration include worker profiles (46 per cent), project history or portfolio (27 per cent) and the rate proposed by the worker (21 per cent).

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Some platforms use fully automated matching processes for assignment of work.

Some **freelance platforms** rely exclusively on algorithmic matching (based on targeted indicators) of clients with workers (e.g. Freelancer, PeoplePerHour), while others use a mix of algorithmic matching and human interaction to assign the task to the worker (e.g. Toptal, Upwork).<sup>18</sup> On these latter platforms, algorithmic matching provides the client with a shortlist of the top three to five workers who could perform the task. The client is then assigned a design specialist or

► **Figure 2.4 Indicators used to determine client-worker matching on freelance and contest-based platforms**



**Note:** Information was available and considered for analysis for 117 freelance and contest-based platforms.

**Source:** ILO estimates based on online labour platforms listed on Crunchbase database and the platform websites.

supervisor to discuss the task requirements and the specific skills needed, and is provided with chat and video-conference tools for scheduling interviews with one or two workers from the shortlist. This enables the client and the worker to finalize the contract agreement and to negotiate the price, working schedule and deadline.

While ratings and client reviews are an important part of the matching process, platforms also allow workers to bid on specific tasks through the payment of a fee which gives them more visibility (see section 2.2). These practices carry the risk of excluding some workers with better worker ratings who have not paid the fee or those with low purchasing power from participating in a fair matching process (see section 4.2.1). On **contest-based platforms**, the clients, based on the subscription plan for which they have opted, often set the price and the requirements of the project, and workers can then submit their portfolio and proposals within a limited time. The contests are either open to all designers or are restricted to top-level designers based on such factors as ratings, client reviews, work histories and repeated assignments with clients, and the client's requirements. Some platforms, such as 99designs, also restrict the number of contests that designers can enter on the platform per month, based on their skill level.

Platforms also allow workers to bid on specific tasks through the payment of a fee.

Most challenges or hackathons on **competitive programming platforms** are open to the community of developers, coders and programmers, except some to which the platforms invite only highly rated or ranked programmers. Eligibility to perform the various tasks on **microtask platforms** is determined by worker ratings, which are algorithmically determined. In addition, on some platforms clients can specify further criteria for including or excluding workers, such as nationality, gender or age (see section 2.2.3). Tasks are then automatically made available to eligible workers on a first-come, first-served basis.

Task assignment on both **taxi** and **delivery platforms** is generated by algorithms and based on worker ratings, which are calculated through indicators such as ratings by clients, cancellation rate and acceptance rate. Workers are often given a limited timeframe (usually a few seconds) to decide whether to accept or reject a ride or delivery. In



addition, taxi platforms use “surge pricing” based on demand, which can strongly influence drivers to make themselves available in areas where there is a peak in demand (Duggan et al. 2020; Rosenblat and Stark 2016). Some of these practices are inconsistent with the platforms’ assertions that workers are free to set their own working schedules and accept or reject work, because acceptance or rejection of work assignments can have significant implications for workers’ ratings and thus the amount of work they will be assigned in future (see section 4.3.1).

Platforms also incentivize workers to build their profiles by using online training tools to enhance

their skills, profiles and thereby opportunities. This is most common on **freelance platforms**, which offer workers online training and tests free of charge to help them improve their chances of obtaining tasks. PeoplePerHour, for example, has an “academy” where workers can take courses, gain skills, access training programmes and earn a PeoplePerHour academy diploma, which can then be displayed on their profile. These training tools and skills help workers, particularly new entrants, to access work or improve earnings. Upwork and Kaggle allow workers to take tests at no cost and then provide feedback, so that they can assess their own abilities and learning needs.



## 2.4 Work processes and performance management

The use of digital tools and algorithmic management are radically transforming work processes and performance management on digital labour platforms. Platforms provide a variety of tools to organize the work processes and communication between the client and the worker, so as to ensure that the worker follows the job instructions carefully.

### 2.4.1 Work processes and communication

Workers are often required to install software and hardware tools, to deliver work within a prescribed period of time and to be available at a specified time (see section 4.3.1), as laid down in platforms’ terms of service agreements. These tools also allow clients to track the progress of their projects and monitor worker performance (see box 2.4). These practices are prevalent among **freelance platforms** and the degree of monitoring using digital tools often resembles that found in traditional employment relationships (Rogers 2018). Furthermore, in order to optimize the client experience, some platforms also refund clients if the work is not up to their expectations or if the delivery is not executed according to the terms agreed. Both Upwork and PeoplePerHour

provide clients with an escrow account, to which a specified amount is transferred when the contract is approved, and from which the payment is released to the worker’s account only once the client is satisfied with the completed work. Some platforms such as Designhill allow clients to request unlimited revisions of work by designers at no extra cost. **Competitive programming platforms** provide contestants with software tools and have clear codes of conduct for those who participate in challenges and competitions.

In contrast to freelance and competitive programming platforms, on **microtask platforms** there is no communication between the client or platform and the workers. The entire work process of allocation, evaluation and remuneration for a task is algorithmically managed. Workers on these platforms are prohibited from using any automated methods to perform tasks. For example, AMT specifies that automated methods must not be used as a substitute for human intelligence and independent judgement. Some of these platforms also prohibit workers from subcontracting their work. Microtask platforms do not use any work-monitoring tools but they allow clients to check how much attention a worker is paying to a task by adding test questions. If a worker gives too many incorrect responses, he/she loses access

to that task and forgoes payment for it. Another common strategy consists in allowing clients to determine the time limit (minutes or seconds) within which the task should be completed, which allows them to exercise some control over the worker.

Platforms often provide strict guidelines on the nature of the content that can be shared through official platform communication channels, a practice which is most common among freelance and competitive programming platforms. The guidelines analysed for this report also prohibit any

communication, agreement, transfer of assets, sharing of contact details, transaction or payment between users (clients and workers) from taking place outside the platform (see [Appendix 2B](#)). This allows the platforms to maintain their position as intermediaries and prevents workers from accessing clients through other means (see section 4.2.1).

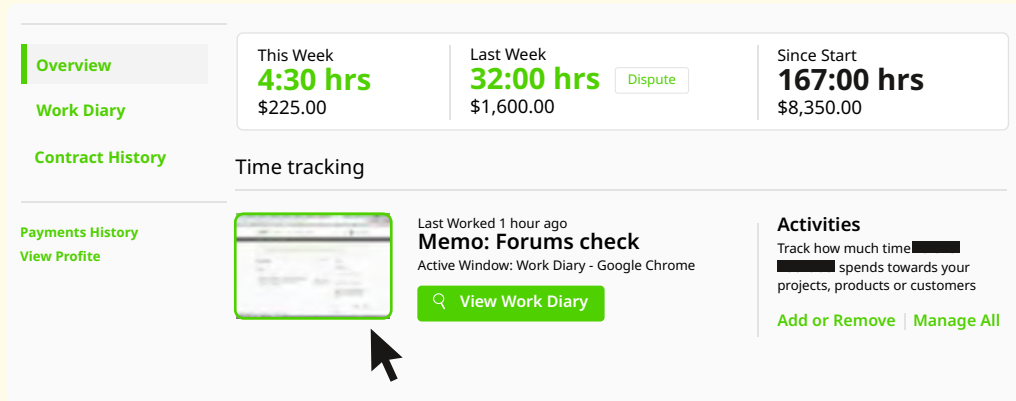
**Taxi and delivery platforms** define various aspects of the work process, such as behaviour and customer service etiquette, instructions for handling

► **Box 2.4 Monitoring work processes on digital labour platforms**

Upwork provides workers on an hourly contract with a “work diary” which, once enabled, records the number of hours worked and the number of keystrokes made, and takes random screenshots (six times an hour) while they work on a project (see figure 2.5). The client can access this information to monitor the worker’s activity and progress.

For fixed-price tasks, Upwork and Freelancer suggest that clients organize projects by milestones, whereby payment is contingent on achieving the agreed milestone and clients have access to ongoing status reports. As workers have to report to clients and enter data recording their work activity on a regular basis, the flexibility, autonomy and control they exercise over their work is constrained.

► **Figure 2.5 Upwork work diary**



Source: Upwork work diary, from <https://www.youtube.com/watch?v=qAXbzLUcjic>.

Online web-based platforms often prohibit any communication, sharing of contact details, transaction or payment between users (clients and workers) from taking place outside the platform.

deliveries and determination of working time. Most platforms provide guidelines on non-discrimination, anti-harassment, use of safety equipment such as helmets and vests, and the importance of abiding by traffic laws and regulations. Drivers on some platforms are instructed to take the least costly route and refrain from making unauthorized stops. Workers on these platforms are tracked through the Global Positioning System (GPS), often in real time, by both the platform company and the customers, and data is collected on the number of rides and deliveries accepted or rejected, on earnings, and on driving metrics such as speed. This data is then used for training the platform's machine-learning algorithms, which can influence worker ratings, access to work, fare-setting for rides or surge pricing (see section 4.3.1).

## 2.4.2 Algorithmic performance management

The use of algorithms to evaluate performance is yet another way of digitalizing human resource management, replacing human supervision and redefining working relationships. Work is evaluated based on a number of metrics such as ratings, client reviews and evaluations, which allow workers to build a reputation on these platforms. There is little transparency about how worker ratings determined by the algorithms are calculated.

On most platforms, such ratings determine the nature and amount of the work assigned and thereby the level of earnings to which the worker is entitled. On all digital labour platforms, any delay in or non-completion of work negatively affects ratings. A lower rating can result in reduced work opportunities or even deactivation of a worker's account. Ratings, which serve to quantify a client's satisfaction with a designated service, are also becoming a significant managerial practice for organizations in service industries beyond digital labour platforms (Wu et al. 2019).

The use of algorithms to evaluate performance is yet another way of digitalizing human resource management.

All platforms use algorithms to calculate ratings, but the indicators that are considered for the calculations differ across platforms. On **freelance platforms**, to take two examples, Upwork has a ratings system which includes a "job success score"<sup>19</sup> and client feedback, while on Freelancer ratings are based on the number of reviews received from previous clients, the workers' earnings scores, their success rate in completing jobs within the agreed deadline and within the price or budget, and whether they have been hired repeatedly by the same client, among other factors. The variations in the metrics adopted by the platforms and their relative weight in the algorithms used to evaluate workers make the portability of ratings across platforms difficult, which in turn dissuades workers from moving across platforms, owing

<sup>19</sup> The platform specifies that the job success score is calculated as the difference between successful and negative contract outcomes, divided by total outcomes. However, an ILO interview with a manager from Upwork revealed that the job success score is actually calculated using more complicated metrics.

to the high costs in terms of time and monetary resources required to build their reputation and ratings again from scratch: workers are thus in effect locked into a specific platform, instead of being able to multi-home on several platforms (see section 4.2.1).

Performance is evaluated on many **competitive programming platforms** using the Elo rating system, which calculates a worker's expected rank in a contest; if the actual rank is better than the expected rank then the rating will increase, otherwise it will decrease. On these platforms, the ratings are also dependent on the performance of other participants in the competition and the number of competitions in which the worker has participated, among other factors.

Workers on **microtask platforms** are evaluated according to their ability to consistently submit high-quality results and maintain a high approval rate, which in turn determines the kind of work to which they have access. Once tasks are completed by workers, they are evaluated by an algorithm, which in turn accepts or rejects the tasks and makes the payment or not to the worker. Rejection of work has a considerable impact on workers' ratings, and on some platforms, such as AMT, workers might not receive tasks if their ratings are

below a particular threshold (95 per cent in the case of AMT). AMT provides a "Masters" qualification to some workers who have completed at least 1,000 tasks and who maintain a high approval rating, which gives them access to varied work opportunities.<sup>20</sup> However, there is no transparency with regard to the set of parameters or criteria used for defining the "Masters" qualification (Kingsley, Gray and Suri 2015).

**Taxi platforms** evaluate worker performance using customer feedback and ratings, which are based on service quality and drivers' acceptance and cancellation of rides,<sup>21</sup> among other factors (such as speeding or damaging the vehicle). These are taken into consideration for calculating a consolidated rating. Workers on **delivery platforms** are evaluated through feedback provided by other platform users (clients and business partners), and factors such as cancellation rates, participation during peak periods, seniority, number of deliveries and speed of delivery.

The algorithmic assignment, evaluation and management of tasks have major implications for workers, who may not have access to a fair dispute resolution mechanism to contest or appeal what they consider unfair rejection of work or poor ratings (see section 2.5).



## 2.5 Digital labour platforms' rules of governance and workers' freedom to work

Digital labour platforms are adapting business practices to a digital environment. These practices are laid down in the terms of service agreements, which are unilaterally determined by each platform and govern how users (both workers and clients) interact with the platform and among themselves. They include exclusivity clauses, and cover acceptance or rejection of work, deactivation, dispute resolution, and data collection and usage. These practices pose new challenges to workers' freedom to work as well as

to the ability of enterprises, particularly small and medium-sized enterprises, to operate freely, and are examined below.

### Exclusivity clauses

Some platforms impose an exclusivity clause of 24 months whereby, if a worker and a client meet on the platform, both are required to use the platform as their sole work channel for 24 months (e.g. Upwork and 99designs). If either of the two

20 For more details, see: <https://www.mturkcrowd.com/threads/masters-qualification-info-everything-you-need-to-know.1453/>.

21 The cancellation rate represents the percentage of journeys cancelled after accepting a request.

## The terms of service agreements are unilaterally determined by the platforms.

parties chooses to opt out within that period, they are required to pay a percentage of the estimated earnings over the following 12 months. In the case of Upwork, this payment is 12 per cent of the anticipated earnings, calculated by multiplying the worker's hourly rate by 2,080; in the case of 99designs, the payment is either 15 per cent of the anticipated earnings or a payment of US\$2,500. Some delivery platforms also dissuade business clients from using multiple platforms by specifying in the exclusivity clauses of their contracts that commission charges will be lower for clients working exclusively with them.

### Acceptance or rejection of work

Platforms often define the situations in which work can be accepted or rejected. On **microtask platforms**, clients only pay for completed work that they have approved, so that workers are not paid if their work does not meet the client's, or in some cases the platform's, standards. Both **taxi** and **delivery platforms** often provide workers with the freedom to accept work at their own discretion. A closer look at the business model of such platforms shows, however, that such freedom is unattainable in practice, as non-acceptance of work and rejection of work have implications for worker ratings and future work assignments (see section 4.3.1).

### Deactivation

Platforms reserve the right to put on hold or deactivate worker accounts at their own discretion, and in particular when a worker is considered to have breached the terms of service. Such terms often include prohibitions on payments and communications outside the platform, prohibitions on the use of subcontractors or automated methods, and prohibitions on having multiple accounts on a platform. Deactivation can also occur when workers have low ratings or have failed to verify their identity or to keep up with a platform's

standards. Workers are often not notified that their accounts will be deactivated and they realize that their accounts have been deactivated only when they log in, thus adversely affecting their access to work.

On some **contest-based platforms**, accounts can be deactivated if designers do not meet the platform's quality standards or if the work is not original. On **competitive programming platforms**, accounts are often deactivated for plagiarism. For instance, on Topcoder, if a developer is found to be cheating the platform initiates an investigation to decide on his/her continued access. On **microtask platforms**, accounts can be terminated if workers' ratings fall below a certain threshold, if they are found guilty of using automated methods, plagiarizing or infringing intellectual property rights, or failing to reply to attention questions correctly.



### Location-based platforms

can terminate accounts, particularly if workers breach the relevant terms of service. Other reasons for deactivation include low ratings, poor performance, prolonged periods of inactivity, and breaches of codes of conduct, which often include anti-discrimination and harassment clauses.

### Dispute resolution

Terms of service agreements usually contain entire sections dedicated to dispute resolution, in which the governing law and jurisdiction are clearly specified. Such sections tend to be lengthier in the case of online web-based platforms, given that their dispute resolution procedures usually take the form of arbitration proceedings, the conditions of which are defined in detail by the platforms. In addition, online web-based platforms often include different dispute resolution policies depending on the issue in question.

Some freelance platforms, such as PeoplePerHour and Upwork, provide dispute resolution services; these often have a cost and are provided to workers based in the country where the platforms are registered, and therefore do not provide much support or assurance to workers based elsewhere. On most **microtask platforms**, workers have little to gain in practice by resorting to dispute resolution when clients do not pay for work, as the pay per task is often so meagre that the worker cannot afford to waste time fighting for such pay. Moreover, clients are typically not required to give a reason for non-payment (Berg et al. 2018). On **taxi** and **delivery platforms**, workers are frequently subject to the jurisdiction of the courts of the place where the services are being provided, although there are some exceptions. For example, in the cases of Bolt and Glovo the disputes are referred to specific courts in Estonia and Spain, respectively. Similarly, disputes in the case of Uber are subject to arbitration proceedings in the Netherlands, except for those concerning India and the United States (see [Appendix 2B](#) and Chapter 5 for a discussion on dispute resolution mechanisms).

## Data collection and usage

All of the **online web-based** and **location-based platforms** under analysis engage in extensive data collection. Personal information on users (workers and clients/customers) is collected either directly or indirectly. Indirect data collection takes place through cookies, web beacons, or embedded scripts, or through third parties such as Google Analytics, social networking services or business partners. For example, on taxi platforms, this covers data related to the worker's location, which is tracked using GPS, as well as ratings, acceleration and braking data, communications between users and even data stored on users' personal devices, such as address book information or names of applications installed.

Data collection allows online web-based and location-based platforms to monitor what is

▶▶ Data collection allows platforms to monitor what is happening in real time.

happening in real time and to improve algorithmic management and automated decision-making for matching and other purposes. This real-time intelligence is a valuable competitive advantage for digital labour platforms with regard to pricing and matching decisions. It also enables them to increase the effectiveness of targeted advertising (Cusumano, Gawer and Yoffie 2019) and to attract users to the platform. For example, Careem has developed an AI platform called Yoda which predicts what the demand in a certain place will be in two weeks' time and where drivers will be needed. This helps reduce waiting times and secure more fares for drivers.<sup>22</sup>

The privacy policies of platforms generally stipulate that they use the data collected to communicate with, notify, support and verify users, to provide and improve or personalize their services, and to ensure security and compliance with legal obligations. However, some of the platforms analysed, such as Uber and Deliveroo, specifically mention that they engage in automated decision-making. Uber uses data for automated decision-making to enable dynamic pricing, to match drivers with passengers, to determine ratings and to deactivate users with low ratings, while Deliveroo uses data to confirm payments to riders and to detect fraudulent transactions. Among online web-based platforms, Freelancer and Upwork use data for automated decision-making to match users to jobs and to determine workers' rankings. Meanwhile, Topcoder's privacy policy states that the platform does not rely on automated decision-making. Data collection strengthens platforms' screening and monitoring powers, which can have significant implications for workers' access to platforms and to work.

22 For more details, see: <https://blog.careem.com/en/careems-destination-prediction-service/>.

## ► Conclusion

This chapter has shown how digital labour platforms have used some of the key features of the digital economy to develop a distinct business model. In-depth analysis of the business model across various online web-based and location-based platforms reveals that there are a number of common elements among the different types of platforms. A combination of interdependent elements, such as pricing, recruitment, matching, work organization and rules of platform governance, are shaping the ways in which these platforms compete among themselves, while transforming the world of work.

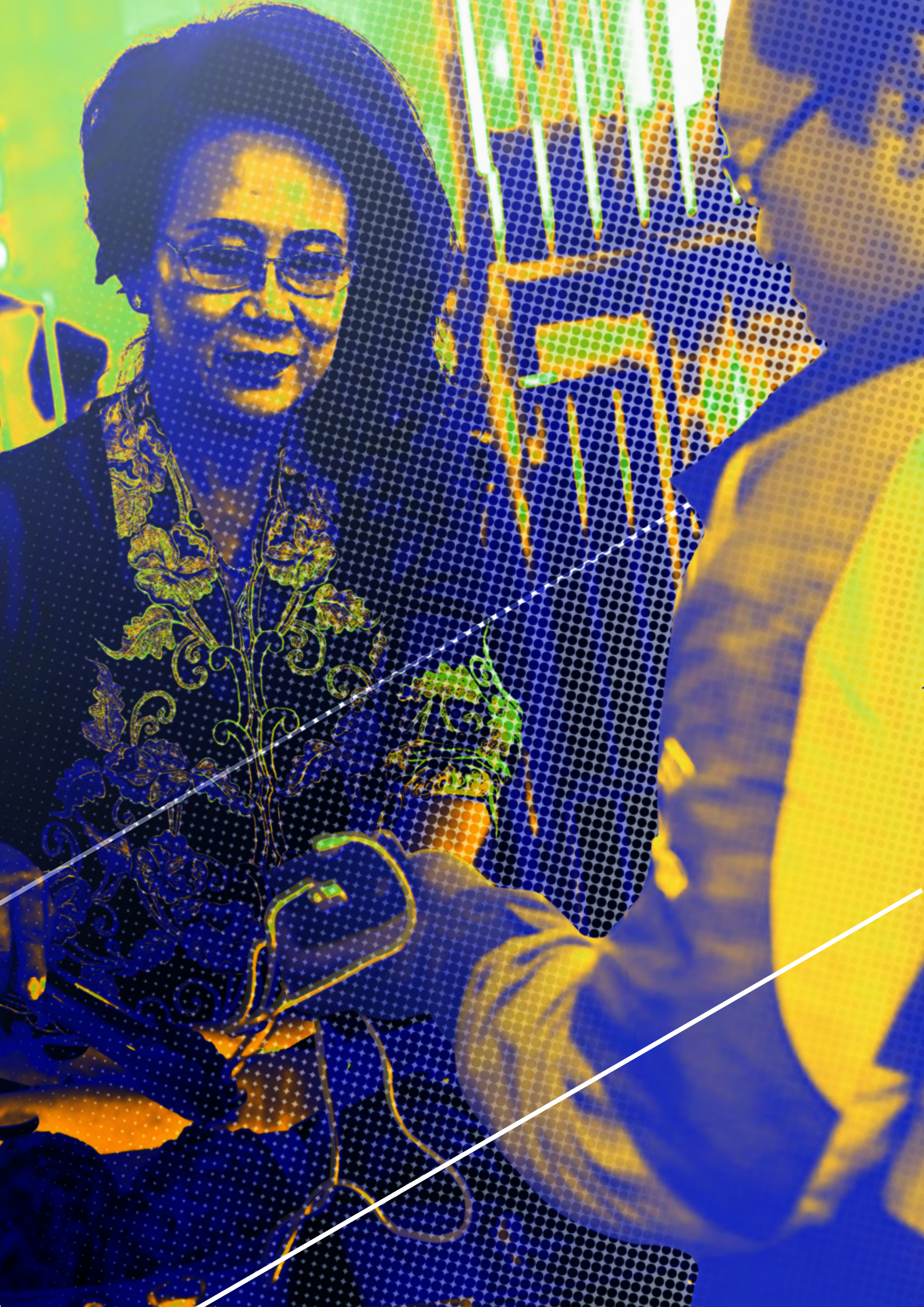
Some aspects of these elements have implications for the future of work. By mediating work, platforms are matching clients and customers with a range of workers who have different skill levels and who perform various types of tasks, from high-skilled work such as software programming to low-skilled work such as delivering food or carrying out microtasks. In doing so, platforms have developed a revenue model that in some cases places a financial burden on workers, through the commission fees or subscription plans and other fees required if they are to access work. These fees can at times be volatile and reduce workers' earnings, particularly in a context of excess labour supply. In other cases, fees may also be borne by businesses, such as restaurants or shops on delivery platforms, which has an impact on their revenue.

Moreover, the digital labour platform business model relies heavily on workers whose work is mediated through the platforms and are categorized as "self-employed" or "independent contractors", rather than employees. This is one of the fundamental shifts of this business model and as such has serious implications for the future of work.

A distinct feature of digital labour platforms is algorithmic management, which is fundamentally shaping work processes and performance management on the platforms. The algorithmic matching of workers with tasks, clients or customers often factors in characteristics such as ratings, client or customer reviews, cancellation or acceptance rates, and skill levels. At the same time, particularly on some online web-based platforms, some of these factors can be sidestepped through the payment of additional fees, thereby creating barriers to accessing work for those workers who may lack adequate financial means to pay such fees, notably in developing countries.

In addition, monitoring tools and software that trace keyboard inputs or capture screenshots at random intervals on many online web-based platforms can curtail workers' freedom and autonomy. Similarly, on taxi platforms, GPS monitoring, and acceptance and cancellation rates can lead to low ratings, which in turn affect access to work and in some cases can lead to deactivation of the worker's account. Furthermore, the governance of platforms through terms of service agreements, which are unilaterally determined, enables platforms to exercise considerable control over workers' freedom to work, and in some instances also restricts clients' or businesses' ability to engage with workers, such as through exclusivity clauses.

A nuanced engagement with such elements of the digital labour platform business model underlines the fact that it is important to move beyond the discourse of flexibility, as often publicized by many platforms. It is critical to further explore these issues and to build a deeper understanding of the impact of such a business model on both traditional businesses and workers. These aspects are discussed in the following chapters.







# 3

## **The diffusion of digital labour platforms in the economy**

How and why are businesses  
using them?

# Opportunities and challenges for businesses

## Why do businesses use online web-based platforms?

- Recruitment
- Innovation
- Cost reduction and efficiency



## Why do businesses and consumers use location-based platforms?

### Delivery sector

- Improved visibility
- Enhanced productivity
- Increased demand
- Expansion of customer base



### Taxi sector

- Safety
- Convenience
- Competitive price



## Challenges faced by traditional businesses

- Increased competition
- High commission charges
- Lack of transparency in ratings
- Lack of digital infrastructure



## Opportunities for business process outsourcing companies and start-ups

- Transformation and expansion of BPO companies
- Proliferation of AI start-ups



## ► Introduction

The spread of information and communications technologies (ICTs) in the 1990s led to the de-verticalization of large businesses and allowed businesses of varying sizes to relocate their services and production processes to different regions of the world. This process brought about a change in work organization, as businesses started working more and more with sub-contractors, subsidiaries and business process outsourcing (BPO) companies (Rani and Furrer, forthcoming). It also spurred the emergence of networked organizations, linking outsourcing, franchising and temporary agency work, which has led to fragmentation of work and blurring of organizational boundaries (Grimshaw et al. 2017).

The current wave of technological advances, such as cloud computing, has opened up a new means of outsourcing work, namely online web-based digital labour platforms, which enable businesses to access workers with a wide range of skills and expertise from around the globe. Platform work is indeed the latest manifestation of outsourcing services enabling businesses to adjust their workforce, in addition to adopting non-standard work arrangements (short-term, fixed-term, temporary and hourly contracts, among others) for core and non-core tasks within an organization in order to meet its demands (Hyman 2018; ILO 2016; Weil 2014). Digital labour platforms create unprecedented possibilities for outsourcing services to workers globally, in the case of online web-based platforms (Wood et al. 2019a; Santos and Eisenhardt 2005), and for accessing labour available in local markets, in the case of location-based platforms.

Digital labour platforms are not only fissuring the workplace but are also reorganizing work activities; they can therefore be considered as being new players in the temporary staffing industry (van Doorn 2017). While casualization or gig work is not new, the use of technology to manage a contingent workforce and offer their services to businesses, customers or individuals is a new phenomenon. These platforms use search algorithms to match workers with businesses, allowing companies to find talent more rapidly than ever before, thereby reducing search costs. In addition, digital tools have enabled remote collaboration

and facilitated algorithmic management of work processes (Moore and Joyce 2020). Platforms have thus introduced new work arrangements, often challenging the traditional business models. Many of these platforms have clients ranging from start-up companies to some of the Fortune 500 companies and multinational corporations (Wood et al. 2019a; Corporaal and Lehdonvirta 2017). In its Global Human Capital Trends report, Deloitte (2018) observed that a diverse “workforce ecosystem” is gradually replacing the employment relationship. Such an ecosystem includes a diversified portfolio comprising workers, talent networks, service providers and gig workers, offering employers a combination of flexibility, capability and a different economic model of sourcing talent.

This chapter examines the diffusion of digital labour platforms in the different sectors of the economy, exploring how and why businesses use online web-based and location-based digital labour platforms and how these platforms are challenging and transforming the established practices of traditional businesses. The analysis is based on semi-structured interviews conducted by the ILO with representatives of different types of businesses (70 enterprises), which include information technology (IT) companies, digital technology start-up companies, business clients who use delivery and taxi platforms, and BPO companies that provide digital services (see [Appendix 3](#)). The interviews provide insights into the businesses’ use of these platforms, and their experience in doing so.

The chapter is divided into four sections. Sections 3.1 and 3.2 explore how and why certain businesses use digital labour platforms, and the benefits and challenges involved. Section 3.3 considers the opportunities presented by digital platforms, focusing on BPO companies to understand how they adapt to the digital economy. It also examines the new digital technology start-up companies that have proliferated in order to understand their motivations and the services they offer to businesses and digital platforms, illustrating some insights through case studies. Section 3.4 discusses some of the implications of digital platforms for traditional businesses, with a focus on the retail sector.



## 3.1 Businesses using online web-based platforms

Businesses are finding innovative ways of outsourcing work through alternative work arrangements involving the use of independent contractors, freelancers, gig workers and crowdworkers. New talent networks or digital labour platforms such as InnoCentive, Toptal, Upwork and 99designs are increasingly being used as a means of outsourcing work. It is estimated that “these types of talent networks now manage over US\$2 billion in outsourced activity, employing hundreds of millions of people in every geography of the world” (Deloitte 2019, 23). These platforms are considered to be very important for an organization’s competitive advantage in the future, according to a survey of 700 business leaders in the United States (Fuller et al. 2020). This section explores the purposes for which businesses are using online web-based digital labour platforms. The literature on this subject is still limited, though growing, and the analysis is supplemented with interviews conducted for this report with IT, platform and digital technology start-up companies. Based on the analysis, three broad purposes can be identified as to why online web-based platforms are being used by businesses: for recruitment purposes; for reducing costs and improving efficiency; and for accessing knowledge for innovation.

### 3.1.1 Recruitment

Digital transformation has brought about an unprecedented change in recruitment practices around the globe. Companies are increasingly changing their human resource practices (Deloitte 2017) and using artificial intelligence (AI) and automation to assess and interview candidates. Online web-based platforms, such as freelance and competitive programming platforms, are also gaining in popularity for recruiting workers in two ways.

First, online web-based platforms are a growing means of hiring workers with specific skills, as they algorithmically match workers to the vacancies and tasks of business entities and offer them customized services. The matching services are

provided by both freelance and competitive programming platforms. Freelance platforms, such as Toptal, exclusively specialize in matching workers from their talent community to businesses; the workers can be contracted on an hourly, part-time or full-time basis. These platforms provide companies with a choice of workers with whom they can engage before the decision to hire or not is taken. Similarly, Upwork offers “Payroll” service, a premium service offered through third-party providers to hire workers under an employment relationship. It also collaborates with large tech companies such as Microsoft and offers them these services so that they can have better access to a skilled workforce. Such matching services are also provided by competitive programming platforms, such as HackerRank, HackerEarth, Kaggle and Topcoder. These platforms offer “talent as a service” to businesses, and based on their needs recommend workers with specific technical skills from their respective communities of programmers, developers and data scientists (see Chapter 2).

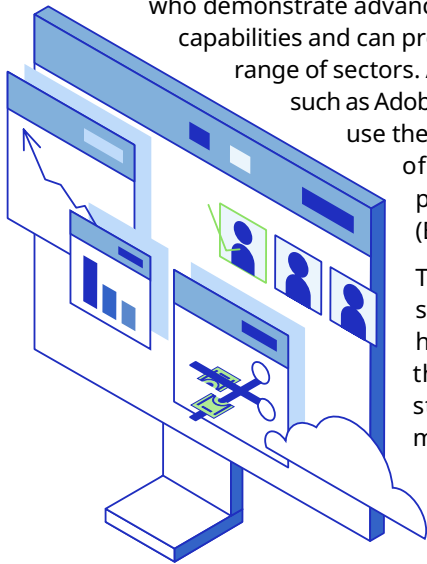
Second, competitive programming platforms, such as HackerRank, HackerEarth and Kaggle, help companies to organize the recruitment process. As discussed in Chapter 2, these platforms offer different types of subscription plans or customized services to businesses for recruitment services in the fields of data science, AI and other technological domains. The recruitment services provided include screening and short-listing workers with specific skills and competencies, who can then be interviewed by the companies. This speeds up the screening process, thereby making recruitment more efficient for businesses and at the same time reducing the efforts and costs of hiring. To assess workers’ technical skills, these platforms organize hackathons, competitions and other challenges, which are often algorithmically programmed and conducted either online with the participation of developers from around the world, or in specific locations, such as university campuses. The services provided by platforms such as HackerRank reduce the time lags for businesses in generating

a shortlist of qualified candidates for a job, apart from assisting in removing bias in the selection process (Grooms 2017). In addition, such platforms assist businesses to hire talented individuals who demonstrate advanced design thinking and capabilities and can provide solutions across a range of sectors. A number of companies

such as Adobe, Altimetrik, and others use these recruitment services offered by competitive programming platforms (Babu 2015).

The demand for such services by companies has been growing over the past decade. For instance, HackerEarth has more than 750 corporate customers worldwide across various sectors of the economy, such as Amazon, L&T

Infotech, Wipro and UBS, which use their platform for recruitment (Bhalla 2017; Babu 2015). These platforms thus seem to be altering traditional recruitment practices in some companies.



### 3.1.2 Cost reduction and efficiency

Digital labour platforms provide businesses with an internet-mediated marketplace. Businesses set up the tasks and requirements and the platforms match these to a global pool of workers who can complete the tasks within the specified time. This process ostensibly helps businesses to adopt an extremely agile and lean structure for their core tasks. In principle, rather than hiring additional staff or subcontracting through established firms, organizations can more easily outsource a diverse range of activities to a geographically dispersed crowd, in various sectors such as financial services, legal services, patent services, logistics and healthcare. These platforms are increasingly used by large businesses and small and medium-sized enterprises (SMEs), as well as early-stage start-ups.

## Online web-based platforms are a growing means of hiring workers with specific skills.

A survey conducted by Deloitte in 2019 showed that businesses outsourced work for multiple activities such as IT (33 per cent), operations (25 per cent) and marketing (15 per cent), as well as research and development (R&D) (15 per cent) (Deloitte 2019). It was also observed that “most organizations look at alternative work arrangements as a transactional solution, not as a strategically important source of talent” (Deloitte 2019, 23). Researchers at the Oxford Internet Institute conducted a survey of nine Fortune 500 companies and asked about their motivation for using digital labour platforms compared to traditional staffing agencies (Corporaal and Lehdonvirta 2017). The findings show that these companies outsource work to workers on digital labour platforms to address staffing needs related to content marketing, translation, administrative support and customer service, design, IT and data, for the following reasons:

- ▶ easier and faster access to a specialized, global and flexible labour force;
- ▶ low cost of hiring workers, and reducing overhead costs by some 25 to 30 per cent;
- ▶ quicker outsourcing of work (2–4 days) compared to traditional employment agencies (6–8 weeks);
- ▶ shorter time schedules as tasks are completed faster;
- ▶ greater flexibility achieved by outsourcing short and small tasks;
- ▶ reduced administrative procedures and contractual arrangements as the work can be easily contracted out; and
- ▶ access to highly qualified professionals and expertise, providing new opportunities for knowledge creation and delivery of quality work.

## Digital labour platforms help companies to reduce costs and shorten time schedules.

Another study by Harvard Business School and Boston Consulting Group surveyed 700 businesses in the United States to understand the usage of digital labour platforms such as InnoCentive, Freelancer, Toptal and Upwork. The survey revealed that some 30 per cent of the companies used these platforms extensively while for another 30 per cent the usage was moderate. Accessing workers through these platforms also helped about 40 per cent of the companies to boost productivity and increase innovation (Fuller et al. 2020).

The CEO of a major microtask platform mentioned in an ILO interview that large businesses were their biggest clients and the source of about 80 per cent of their revenues. One such client processes 100 million lines of data every year through the platform, for annotating, classifying and categorizing to make them machine-readable and train machine-learning algorithms. This work is integrated through an application programme interface, which allows the clients to outsource work directly to crowdworkers on the platform. Apart from training machine algorithms, the data also provides insights into consumption patterns and can be useful to companies when making business decisions and for targeted marketing. Studies in the automotive industry show that companies use these platforms for data and image processing, which support the development of AI for autonomous and connected vehicles, enhanced speech interfaces and virtual assistants for drivers, as well as for training algorithms on the basis of various traffic scenarios and geographical mapping without the need for human supervision (Tubaro and Cassili 2019; Schmidt 2019).

The strategy of using a crowd to be cost-effective is quite widespread across a variety of industries, including the automotive, chemical, financial, research and technology industries (Tauchert,

Buxmann and Lambinus 2020; Boudreau, Jesuthasan and Creelman 2015). This is also the case among some big technology companies. For example, “Apple has turned to large numbers of users and developers distributed around the world to propel its growth by creating apps and podcasts that enhance its products” (Boudreau and Lakhani 2013, 62). Lakhani, Garvin and Lonstein (2012, 8) also show that clients are able to substantially reduce the cost of building their company website by using competitive programming platforms (for instance US\$35,000 was paid) instead of paying “\$350,000 to a large IT consulting firm, or \$200,000 to a small IT consulting firm, or \$80,000 to individual contractors”. Similarly, a software development project that took six months to complete through a platform would have taken twice as long had it been undertaken within the company (Corporaal and Lehdonvirta, 2017). According to Fuller et al. (2020, 7), companies are moving beyond experimentation and using platforms on an ad hoc basis with the aim of “developing an integrated strategy ... that uses ... platforms not just to tap the best talent ... but also to get the most out of the latent capabilities of their full-time employees”.

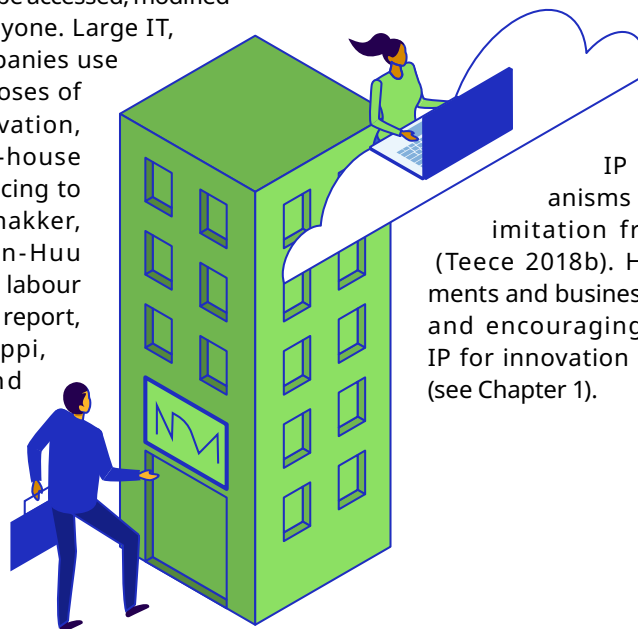
As their reliance on digital labour platforms grows, businesses also face challenges in strategically managing the workforce engaged under multiple work arrangements (Deloitte 2018). A majority of business respondents (54 per cent) in a 2019 survey conducted by Deloitte underscored that “they either managed alternative workers inconsistently or had few or no processes for managing them at all” and that this was largely because they used these workers to “fill slots” (Deloitte 2019, 23 and 24). Yet, despite the challenges they present to businesses, about 30 per cent and 17 per cent of the business respondents perceive that gig workers and crowdworkers improve organizational performance respectively (Deloitte 2019). During the COVID-19 pandemic, with rising demand, platforms were offering more value-added services to companies and they are “gearing up to play a more significant role in closing the skills gap” in the future (Fuller et al. 2020, 8).

### 3.1.3 Access to knowledge for innovation

Digital platforms, such as open source and competitive programming platforms, facilitate and provide opportunities for innovation that are beneficial to both businesses and workers. The rise of the internet and the rapid expansion of ICTs have made it easier for businesses to access knowledge through multiple means. Over the past two decades, two strategies in particular have been gaining prominence among businesses in terms of innovation, ideas and expanding their knowledge boundaries: first, collaboration and co-creation on open source platforms; and, second, collaboration with competitive programming platforms that organize open competitions or challenges for innovation and development. This section focuses on open source and competitive programming platforms to explore how they potentially help businesses' efforts to innovate and develop.

#### Open source platforms

Open source platforms are growing in popularity because their underlying software is not proprietary and can consequently be accessed, modified or even developed by anyone. Large IT, financial and retail companies use such platforms for purposes of development and innovation, instead of pursuing in-house development or outsourcing to other IT companies (Thakker, Schireson and Nguyen-Huu 2017). Most of the digital labour platforms analysed in this report, including Bolt, Ola, Rappi, Swiggy, Topcoder and Upwork, use the two most common open source web servers – Apache and Nginx.<sup>1</sup> They also use open source tools and software to develop their technologies.



#### Open source and competitive programming platforms facilitate and provide opportunities for innovation.

Many leading IT companies collaborate closely with open source platforms on innovation, research and development, seeking solutions to specific problems. Microsoft collaborates with the Apache Software Foundation (an open source volunteer community of developers) and makes products and innovations available through such platforms. Collaboration and engagement of businesses with open source platforms is not necessarily cost-related; it enables them to improve their public relations and gain legitimacy, and to learn from and align with the latest innovations in their field (Lerner and Tirole 2005; see box 3.1).

There are also challenges associated with engaging in open source platforms for businesses, as they have to make a decision about the extent to which they would like to share the intellectual property (IP) in exchange for the benefits of innovation (Henkel, Schöberl and Alexy 2014).

This is largely due to ineffective IP protection mechanisms and the threat of imitation from competitors (Teece 2018b). However, governments and businesses are facilitating and encouraging open access to IP for innovation and development (see Chapter 1).

<sup>1</sup> This information is based on an analysis of platform websites using a website profiling tool (Builtwith).

### ► Box 3.1 Apache Software Foundation

The Apache Software Foundation (ASF) is an open source volunteer community of developers that was set up in 1999. It has over 350 open source projects such as Hadoop, Spark, Cassandra, CloudStack and Flink. A high proportion of websites on the internet today and most of the digital labour platforms discussed in this report are powered by the Apache HTTP Web Server, which led to the ASF's formation in 1999. The software developed through open source projects in the Foundation is distributed under the Apache licence and is a free and open source software, which can be further developed and innovated by software programmers or coders. It is a business-friendly licence and allows entrepreneurs to leverage and create all types of businesses around it.

Businesses can post questions and computational problems and access services from the online community of experts willing to provide solutions at zero cost. A large number of volunteers (developers and programmers) put in time and effort to work at the ASF, while others are paid by their employers to contribute. They find the experience rewarding as they are able to acquire new skills working with their peers in the community, and they can establish relationships with experts in the domain with whom they can interact in the future. In addition, "programming in these communities requires a high degree of motivation, as programmers and developers have to invest a lot of time before they can see concrete results and most programmers are interested in the art of creating it [the code] rather than the money" (ILO interview with a representative of the ASF).

Many major technological companies regularly send their in-house programmers and developers to the ASF to work on complex problems with the community. This helps workers not only to acquire complex programming skills in a short time and at almost zero cost, but also to come up with innovative ideas for their business activities. It also provides them with an opportunity to enhance their reputation, achieve recognition in their company and develop their career. About half the developers on Apache projects are paid by technological companies such as Facebook, Google, IBM and Microsoft. Some of these companies also have dedicated open source departments responsible for building their relationship with the Foundation.

Apache does not charge anyone for using the platform and it costs the ASF approximately US\$5,000 to provide infrastructure support for each project. With more than 350 projects and initiatives, the infrastructure support alone costs them US\$1.75 million. The Foundation is funded through sponsorship or the donation of funds from some of the big technology companies to support infrastructure services and conferences. The companies benefit from being associated with the ASF brand as this makes it easier for them to attract customers, and they gain enormously from the knowledge and expertise of the open source communities. Some companies also share their software as open source under the Apache Foundation umbrella, which allows for the development of the software through the community and is beneficial to all users in the ecosystem. For instance, Cassandra, an SQL (Structured Query Language) database, was originally donated by Facebook to the Foundation and attracted developers from other companies such as DataStax, Google and Microsoft, who further developed it by contributing additional features or enhancing its services.

**Sources:** ILO interview, 2019; Apache Software Foundation website and documentary feature.



## Innovating by using competitive programming platforms

Businesses also access knowledge for innovation and build new capabilities by using competitive programming platforms that provide solutions by organizing challenges or competitions<sup>2</sup> (see box 3.2). These platforms provide businesses with access to their community of programmers, developers and coders in various technology domains. There is growing reliance on these digital labour platforms for innovation because they attract a community of programmers to solve a wide variety of problems related to AI, machine learning, data science, security and so on, based on the innovation needs of businesses, in return for prize money (as stated by representatives of companies in ILO interviews). For example, Netflix's filtering algorithm for predicting user matchings for films was initially based on a user rating on a scale from 1 to 5; to improve the accuracy of the rating predictions, an open competition was organized (Gomez-Uribe and Hunt 2015).

Communities of programmers, coders and developers on competitive programming platforms potentially help companies access creative ideas and diverse solutions in a way that was previously not possible (Lakhani, Garvin and Lonstein 2012; Terwiesch and Xu 2008). ILO company interviews revealed that the real value of these platforms lies in the quality and speed with which solutions are provided, which would be difficult to achieve solely with internal resources. This process also provides flexibility and easy access to highly skilled talent around the globe. Competitive programming platforms such as Topcoder have leveraged the crowdsourcing model to find solutions to some of the world's most complex and sophisticated problems (improvements in cancer treatment, faster DNA sequencing and improved energy pipeline security, among others) by pairing their community of IT talent with businesses (see also Lakhani et al. 2013; see box 3.2).

### ► Box 3.2 Using the Topcoder community for technological solutions

Topcoder, a competitive programming platform, offers companies access to talented digital workers from around the globe who can provide a range of potential solutions to their projects at a low cost and in a short period. For instance, the Topcoder community was invited to help an ambitious crowdsourcing healthcare initiative focused on cancer, for a prize of US\$55,000 over ten weeks. The initiative focused on tumour delineation in lung cancer, which claims over 150,000 lives annually in the United States alone, and the "challenge" was to produce an AI solution to treat a critical lung tumour. Topcoder joined forces with Harvard Medical School and the Dana-Farber Cancer Institute to create and test automatic delineation algorithms to help improve treatments of cancerous tumours in patients' lungs.

Over the ten-week, three-phase crowd innovation challenge, 564 contestants from 62 countries registered and 34 contestants submitted 45 algorithms, resulting in multiple AI solutions capable of targeting lung tumours with an accuracy equal to that of an expert radiation oncologist, but more rapidly.

**Sources:** ILO interview, 2019; see also <https://www.topcoder.com/case-studies/harvard-tumor-hunt/>; <https://jamanetwork.com/journals/jamaoncology/fullarticle/2730638>.

<sup>2</sup> The idea of introducing competition for innovations or solutions is not new and can be traced back to "the Longitude competition in 1714, when the British government announced an open call (with monetary prizes), for developing a method to measure a ship's longitude precisely" (Mao et al. 2017, 59). While internet-based innovation competition can be traced to 2001 with the InnoCentive platform, which tried to attract a crowd for drug development, a number of other platforms later emerged for software development and data analytics (Mao et al. 2017).

► **Box 3.3 Wipro's new strategy to develop human resource capabilities and innovate using digital labour platforms**

Wipro Limited (hereafter Wipro), founded in 1982, is today one of the leading Indian companies providing high-quality IT-enabled services globally. Since the early 2000s it has been offering a range of services to clients, including data analytics, AI and cloud computing. The shift from traditional IT services to integrated services in specific industries meant that Wipro had to build and/or acquire a completely new skill set, especially in business strategy and design skills. To this end, Wipro introduced a strategy based on four key components:

*(i) Aligning business strategy with talent strategy*

Wipro radically shifted its approach to recruitment. Instead of hiring workers with “I-shaped” profiles (involving in-depth knowledge and expertise in a particular technology, such as Java) or “T-shaped” or “pie-shaped” profiles (in-depth knowledge and expertise that can be applied to different industries), Wipro hires workers with “X-shaped” profiles (software and design expertise, along with detailed knowledge of business strategy and implementation). Wipro managers also rotate workers every two years among different industry lines to increase their exposure to various industries, as well as to transfer knowledge among industry clients while continuously learning new skills.

*(ii) Leveraging in-depth technology expertise to yield innovative client solutions*

Wipro explored a variety of crowdsourcing initiatives to meet this strategic goal. In 2016 it acquired Topcoder, a platform marketplace bringing together 1.5 million developers, designers and data scientists. In 2017, with the help of Topcoder, Wipro developed an internal crowdsourcing platform – TopGear – to bridge the technology skills gap and create a project-deployable workforce. This demonstrates how structured, internal crowdsourcing efforts can increase individual and organizational adaptability. The platform acts as an opportunity for both teams and individuals to:

- support employees in learning and applying skills to a range of projects;
- encourage flexibility and value-driven outcomes by giving individuals more agency;
- provide a channel for employees to reap benefits that go beyond work;
- develop their design, coding, testing and data science tools and expertise by crowdsourcing tasks or projects to internal talent;
- provide multiple innovative solutions to their clients by posting complex problems on the platform as a “challenge” for prize money; and
- access platform workers for specific projects for a short time span, enabling flexible resourcing.

The TopGear team supported an internal project team in a large-scale workforce transformation that involved everyone from manual testers to automation engineers. Their development and implementation of a learning plan upskilled 80 per cent of the account team, resulting in a 20 per cent increase in annual productivity for the department concerned. Building on the success of TopGear, Wipro launched the new Hybrid Crowd Platform, aiming to make functional enhancements to create a flexible workforce for the future and to revolutionize talent resourcing internally and for its enterprise clients.

Hybrid Crowd provides a way for all businesses (in addition to Wipro itself) to connect their internal talent teams with the more than 1.5 million members of Topcoder's global community.

► **Box 3.3 (cont'd)**

Integrating these talent pools, the platform enables enterprises to supplement their teams, on demand, with experts from the crowd. Through Hybrid Crowd, organizations can engage three different types of crowds: private, certified and public. According to K.R. Sanjiv, Chief Technological Officer of Wipro Limited:

Hybrid Crowd platform is the cornerstone of Wipro's ongoing digital transformation and it enables the team to provide an even broader spectrum of digital services and meet just-in-time requirements. It also gives our digital transformation experts [Wipro employees] increased opportunities to learn new skills, earn, and gain recognition by competing in crowdsourcing competitions.

*(iii) Encouraging collaboration and innovation*

Wipro organizes internal and external hackathons and ideathons on company premises and on the Topcoder platform to develop skills and expertise among Wipro's employees, and to find innovative solutions. Employees can compete either individually or in teams for the challenges posted by clients. Multiple winners are awarded prize money and their achievements are widely publicized within the company. The contest model allows employees to evaluate their skills against their peers, but the open, informal nature of the gamified training encourages communication and support. Senior managers claim that this strategy boosts commitment among employees and has a positive impact on their performance and productivity.

*(iv) Aligning and collaborating with key stakeholders in the platform ecosystem*

Wipro also invests in an ecosystem of start-ups and in collaboration with Microsoft accelerators taps into innovations. It establishes long-term partnerships with clients to identify solutions in emerging technologies, such as blockchain or AI, in their respective industries, and collaborates with open source software communities such as GitHub, SourceForge and others.

**Source:** ILO interviews, 2019 and 2020.


Traditional IT outsourcing firms are facing increased competition from competitive programming platforms, with companies turning to platform communities to solve their problems and outsource their work. To overcome this challenge, traditional companies are starting to build or buy emerging or well-established platforms that can provide the skills and technology that they lack (Cusumano, Gawer and Yoffie 2019). For instance, the IT outsourcing firm Wipro acquired the Topcoder platform in 2016, and with it the skills and expertise to provide technical services in a range of sectors, resulting in a change in Wipro's strategy and delivery model (see box 3.3). Similarly,

Google acquired Kaggle, a data-science platform, in 2017, enabling it to use Kaggle's community of data scientists to analyse data at the speed required to be competitive in the AI space.<sup>3</sup> These developments raise critical questions about future career opportunities for highly skilled IT workers if companies of such calibre are increasingly using and relying on digital labour platforms, a trend observed during the COVID-19 pandemic (see Chapter 1). There is also a broader question with regard to building capabilities within companies and whether this practice is sustainable in the long term if firms are increasingly going to leverage expertise through crowdsourcing.

<sup>3</sup> See <https://techcrunch.com/2017/03/08/google-confirms-its-acquisition-of-data-science-community-kaggle/>.

## 3.2 Businesses using location-based platforms

Location-based platforms, such as taxi and delivery platforms, have created easy access to services for individual consumers (see box 3.4) and are being increasingly used in many countries by SMEs, restaurants and individual entrepreneurs. The growing reliance on such platforms stems from competition, the need to expand the customer base and to cope with a transforming marketplace as well as consumer preferences. Some traditional businesses that have started using delivery platforms include those in the restaurant and retail sectors. This section examines the opportunities and challenges that restaurants and small businesses encounter with location-based platforms. The analysis and conclusions in this section are based on semi-structured interviews conducted by the ILO with representatives of 47 businesses and their clients in selected developing countries (Ghana, Indonesia, Kenya, Lebanon, Morocco and Ukraine) between October 2019 and March 2020 (see [Appendix 3](#), table A3.1 for details).

 **The growing reliance on location-based platforms stems from competition.**

### Restaurants

The restaurant business in particular has witnessed enhanced consumer demand for deliveries through platforms that customers often consider easy and convenient to use. ILO interviews with 27 restaurant owners in six countries (see [Appendix 3](#), table A3.1) reveal that their markets have expanded and that they are able to reach new customers thanks to increased visibility through app-based delivery platforms. In addition, the ease of ordering through the platforms has led to increased demand from offices during the week and households during weekends or during poor weather conditions.

**The motive for using apps is to sell products, to increase the customer base as well as to increase demand – Restaurant using app-based delivery services (Morocco)**

**When it is raining, the demand for delivery increases because people do not want to come to the restaurant and they prefer to order through the delivery apps. This is true even during weekends – Restaurant using app-based delivery services (Kenya)**

Many restaurants use multiple platforms to provide services to customers, for three main reasons. First, each platform has its own customer database, which allows restaurants to reach more customers. Second, having a presence on multiple platforms helps retain customers who often switch across apps to get the best deals. Third, doing so helps smaller restaurants to compete with bigger restaurants or chains and to benefit from various kinds of promotions and advertisements offered by the platforms.

**The motivation behind joining multiple platforms is to get more visibility, so that we do not lose customers to coffee chains who have a presence on these apps – Restaurant using app-based delivery services (Lebanon)**

**By using multiple platforms we are able to target as many people as possible because each platform has its own customer base – Restaurant using app-based delivery services (Kenya)**

**The constant advertising of our food items through platforms leads to high demand – Restaurant using app-based delivery services (Morocco)**

Delivery platforms are also helping restaurants to improve their productivity through multiple means. First, platform companies offer restaurants web analytics and monitoring tools that help them track their customers' preferences; this in turn allows for greater insight into the best ways to develop their business strategies and pricing structures. Second, platforms provide periodic

reviews and training on digital integration, as well as advice on business strategy and advertising. Third, digital tools for tracking orders, preparing products for dispatch and managing accounts and payments also help increase restaurants' productivity. Finally, the rating systems on platforms create an incentive for restaurants to increase the speed of delivery and improve their packaging, which not only enhances their competitiveness but also improves their ranking and gives them greater visibility among customers.

**We are making sure that all our staff are aware and are trained and have the knowledge on how to do the packaging at a rapid speed, so that the orders are ready for the delivery worker to pick up. The quality and the quantity are important for rating – Restaurant using app-based delivery services (Kenya)**

**The platform company provides recommendations through email about how to increase profitability – Restaurant using app-based delivery services (Ukraine)**

Several restaurants reported that the increase in demand for deliveries led to a greater workload, especially for kitchen staff. Some restaurants hired temporary or short-term workers to meet the increasing demand.

**We have a list of temporary workers, we call them from time to time, especially on weekends. We pay them according to the hours worked – Restaurant using app-based delivery services (Morocco)**

**We used to have permanent employees who delivered products, but now we use the platforms and have fired those employees – Restaurant using app-based delivery services (Ukraine)**

While app-based platforms have prompted a rise in demand for food from restaurants, they have also led to greater reliance on the digital economy, which in turn requires a well-functioning digital infrastructure. Many restaurants reported that unstable internet connectivity had an impact on their business, particularly relating to dispatching orders. Restaurants also faced challenges with regard to delays on the part of delivery workers, leading to cancellations, and some complained of poor service on the part of platform companies, which provoked complaints from customers. In addition, platforms charge a commission fee of about 15 to 25 per cent, which affects the restaurants' profit margins and sustainability. Some restaurants also mentioned that they were penalized with high commission fees if they used multiple platforms.

**The current deal with Toters is 25 per cent commission for each order. We think this is extremely high. We recently tried to negotiate a better deal with Toters but did not succeed, so we decided to work with other companies until we have developed our own application as an exit strategy – Restaurant using app-based delivery services (Lebanon)**

**Poor internet infrastructure is the main issue in Lebanon, which often leads to interruptions – Restaurant using app-based delivery services (Lebanon)**



## Small retail businesses

The ILO interviews with representatives of 16 small retail businesses and independent sellers in Ghana, Indonesia and Kenya show that small businesses are increasingly using social media platforms such as Twitter, Facebook and Instagram, as well as e-commerce platforms, to sell their products. Some of them have no physical stores and operate exclusively from home. All the small retail businesses surveyed are increasingly relying on delivery platforms to deliver goods to customers who place orders online, and they are able to sell products from anywhere and to a wider customer base, resulting in higher incomes. Delivery services have also enabled independent sellers to focus on the production and management of goods rather than on deliveries.

**The delivery platforms have helped us to increase orders compared to the previous months, which has led to an increase in revenue and profits – Small retail business on an e-commerce platform using app-based delivery services (Kenya)**

**Delivery platforms help to deliver the products on time and reduce the delivery workload, which is a relief. So, I monitor my social media feeds regularly and as soon as I get an order, I call the delivery guys and inform them about the pick-up and delivery time – Independent seller using app-based delivery services (Ghana)**

Small retail businesses using e-commerce platforms are also able to access data about their orders and sales using web analytics, which allows them to respond to changing demand. To deliver the goods or products to customers, small retail businesses often use multiple delivery platforms, take advantage of various promotions and offers, and have preferences for platforms based on the services offered.

**We are able to compare how many orders were delivered, which helps to analyse and monitor the sales – Small retail business on an e-commerce platform using app-based delivery services (Kenya)**

However, small retail businesses and independent sellers also face challenges similar to those of restaurants with regard to unstable internet access, delays in receiving orders from delivery workers, and the capacity to adapt to an online business model. Businesses that use e-commerce platforms also face the challenge of changes in commission fees without any notice, which affects their revenue. For independent sellers, delays by delivery workers also have serious implications for customer relationships as they are often reliant on a smaller customer base.

**The delivery worker is delayed by two hours, then the customer is frustrated and gets angry with me – Independent seller using app-based delivery services (Ghana)**



► **Box 3.4 Customers' motivation for using app-based taxi and delivery services**

The rise of location-based platforms provides individuals with more choices to access services than are available through traditional means. To understand the motivations of customers using these platforms, the ILO conducted in-person interviews with a small sample of 33 customers in Chile, Ghana, Kenya and India between October 2019 and March 2020. The option of accessing taxi services or ordering a product through a digital app or at the click of a button has added to the popularity of these platforms among customers. For most of them, convenience, ease of use, low prices, transparency and reliability were some of the reasons for using app-based services.

The main motivation for the customers to use app-based taxi services was the lower price compared to traditional taxi services, as well as various offers and discounts. They also pointed out that they feel safe as GPS enables them to track the driver and to share their location with family and friends. In addition, in some countries, app-based taxi services are available in certain locations where it is often difficult to find traditional taxis. Customers of delivery services emphasized that delivery apps provide them with a variety of products to choose from and help them save transportation costs and time.

**Convenience, comfort, privacy, security, flexibility and also knowing that there will be no need for any negotiation – Customer of app-based taxi services (Ghana)**

**I don't have to wait on the road or street and can book the taxi anywhere. I can buy all the products in one click instead of going to the shop and it saves my time – Customer of app-based taxi and delivery services (India)**

Many customers also use multiple platforms simultaneously for taxi and delivery services as this enables them to choose the cheapest and most convenient option. For instance, on taxi platforms, customers can compare offers across multiple apps to find the best deal in terms of fare, driver rating and location. Delivery platforms enable customers to compare the price of a product across different apps and to choose the product offered at the most favourable terms and the shortest delivery time. All customers emphasized the importance of ratings, as this feature allows them to provide feedback about the quality of services and to see other customers' opinions about products and services.

**I can say that sometimes it helps you get a better price for delivery to the same location because you can check both apps and get to know which one is cheaper – Customer of app-based taxi services (Ghana)**

**Ratings provide a better perspective based on others' experiences and help me assess safety issues – Customer of app-based taxi services (India)**

Alongside the benefits of app-based taxi and delivery services, some challenges were also identified by customers, the main ones being internet connectivity and technical glitches on platforms. Other concerns in the taxi sector included the rise in app-based taxi fares, instances of disagreement with app-based taxi drivers, cancellations or rudeness on the part of the drivers, lack of transparency of waiting charges, and surge pricing. In the delivery sector, the challenges included mix-up of food and other items, delays in orders, cancellations and instances of extra charges, as well as excessive advertisements on the platforms and a platform design that promotes more consumption.

**The delivery apps make the interface more interesting and more appealing so that even if you are not willing to buy anything, by just clicking and swiping, you may end up buying something that you didn't even think you needed – Customer of app-based delivery services (Ghana)**

**Prices, especially for app-based taxi services, have increased a lot – Customer of app-based taxi services (India)**

Some customers said that taxi and delivery platforms provide job opportunities, especially for migrant workers, and raised concerns over working conditions and insurance for app-based taxi drivers and delivery workers.

**Source:** ILO interviews.

### Corporate clients (taxi services)

The ILO interviews with four corporate clients in Kenya reveal that they tend to use app-based services as they are considered to be convenient, readily available and reliable. Safety features available in taxi apps (for example an SOS button and driver tracking) and the ease and convenience of making payments via a digital tool were among other important factors reported by the clients for preferring app-based taxi services.

**We normally sensitize our staff to use specific taxi platforms when they meet with a client, as it is more reliable – Corporate client of app-based taxi services (Kenya)**

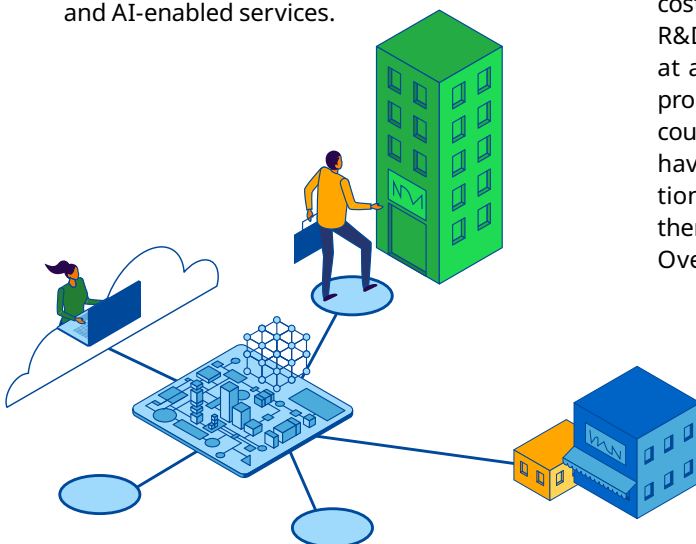
**You can track the driver, wherever you are and one can feel safe – Corporate client of app-based taxi services (Kenya)**

App-based taxi platforms compete with one another to attract corporate clients. For instance, Maramoja specifically targets corporate clients, offering them far lower prices than other platform companies, while Bolt proposes services at a rate similar to that charged to individual customers. However, corporate clients also face challenges relating mainly to customer service, non-transparency in cancellation charges and poor internet connection. The period when the interviews were conducted was also marked by strikes called by app-based taxi drivers. This was reported as one of the key challenges by the clients in Kenya, as their business was affected by the temporary halt of platform-facilitated taxi services.

**When app-based taxi drivers were on strike, there were no services available. This was quite different when compared to contracting with a taxi company – Corporate client of app-based taxi services (Kenya)**

## ▶ 3.3 Opportunities from digital platforms for BPO companies and digital technology start-ups

Digital platforms create opportunities for innovation and entrepreneurship for start-up companies, BPO companies, software developers and programmers, among others. Low IT infrastructure costs and access to open source platforms have reduced the costs of setting up a business, and provide an opportunity to experiment with innovative ideas. This section focuses on two trends: the transformations in BPO companies in response to the needs of organizations in the digital era; and the growth of digital technology start-ups that provide new technological products and AI-enabled services.



### 3.3.1 Transformations in BPO companies

The rapid advances in, and adoption of ICTs since the 1990s have led to the outsourcing or relocation of services to developing countries, creating new markets and employment opportunities for IT-enabled services, call centres and for BPO companies (Rani and Furrer, forthcoming; Parthasarathy 2010). This has helped large companies to reduce their operating costs – by accessing labour pools for software and R&D services and for customer support centres at a relatively low cost – and to enhance their productivity (Graf and Mudambi 2005). Developing countries, such as Brazil, India and the Philippines, have integrated ICT development into their national development policies, which has allowed them to dominate the BPO market (Parayil 2005). Over the past decade, some African countries,



including Ghana, Kenya and South Africa, have also become a viable location for BPO companies due to their cost competitiveness (Anwar and Graham 2019).

The rise of the digital economy and the proliferation of digital platforms are leading some traditional BPO companies to adopt new strategies in order to adapt to and sustain their businesses in the digital economy and to provide the services needed by large companies. Based on semi-structured in-depth interviews with managers or representatives of 11 companies<sup>4</sup> in two countries (India and Kenya) between April 2019 and January 2020, this section focuses on these strategies.

All the BPO companies that participated in the ILO survey are SMEs, which have adopted various strategies to adapt to the changing needs of their clients. The BPO companies in Kenya are largely reliant on work outsourced from large international companies. Since 2014, they have been transitioning from voice-based services to digital services. The nature of the tasks however, such as handling clients and customer complaints, has remained the same. The digital channels that the BPO companies have started using to provide these services include various social media channels, email and AI bots.<sup>5</sup> In addition, digital tools such as web analytics have allowed them to track the entire journey of the customer from start to endpoint, enabling them to engage with customers, cater to their specific needs and provide the required services.

Anwar and Graham (2019, 214) made a similar observation in their survey of seven BPO companies in Johannesburg, South Africa, where they found that most of the BPO companies were making a digital transition by providing customer services through “multiple digital channels such as voice calls, automated interactive voice responses, webchat and WhatsApp”. In one of the companies they surveyed, the number of voice calls decreased by more than 50 per cent between 2012 and 2016, with voice calls being replaced by non-voice digital channels.

## BPO companies are adopting new strategies in order to adapt to and sustain their businesses in the digital economy.

The interviews with Kenyan companies show that digital tools and technologies have enabled them to provide what they consider to be improved, on-demand customer-friendly services, as well as technical support and management of social media. BPO companies such as HN, IN and CCI provide clients in the insurance, banking, telecom and retail sectors in the domestic and international markets with a range of services, including market research, customer care, tracking of consumer preferences, digital marketing, pricing strategies and communications strategies, using various digital channels. These services help their client companies improve customer experience and operational efficiency, so that they can remain competitive in the digital business environment.

With the use of AI across a range of sectors, from automobiles to social media and e-commerce, data labelling and content moderation have become a key requirement for many companies. A number of “big tech” companies, such as Facebook, Google and Microsoft, have also started outsourcing content review and moderation, data annotation, image tagging, object labelling and other tasks to BPO companies. The company interviews revealed that these tasks are being outsourced by the “big tech” companies as part of their corporate social responsibility programmes. The objective of outsourcing is to have a social impact in developing countries by providing employment opportunities to young graduates or school-leavers, and to support people from disadvantaged backgrounds. This strategy has also led to the growth of new

<sup>4</sup> The names of the BPO companies cited have been changed to preserve their anonymity.

<sup>5</sup> A bot is a simple automated tool or a computer program that can complete an action using artificial intelligence or natural language processing.

BPO companies and call centres, which perform these tasks in a number of developing countries, including India and Kenya. Some of the data labelling companies, such as Inforks and iMerit in India, which operate in smaller towns, do so to create employment opportunities among underprivileged communities, while creating annotation tools (Murali 2019).

Some new BPO companies, such as FS and CO, India, stated in the ILO interviews that content moderation not only provides a business opportunity but also allows them to perform a very important task for society as they “act as a firewall or gatekeeper or a watchdog for the internet”. Both these companies also provide services such as flagging counterfeit products and fraudulent practices in advertisements and product reviews; safeguarding copyright material and ensuring that there is no copyright violation on e-commerce websites; and identifying fraud profiles and scammers on dating websites, among others, for large international and local companies. Interviews with workers and the CEO of FS revealed that about 90 per cent of the workers who perform content moderation and other tasks are graduates or postgraduates with engineering and computer science skills. Some of the companies offering IT-enabled services, such as Accenture, Genpact and Cognizant, have also diversified and entered into the content moderation business, hiring university graduates to perform these tasks (Mendonca and Christopher 2018).

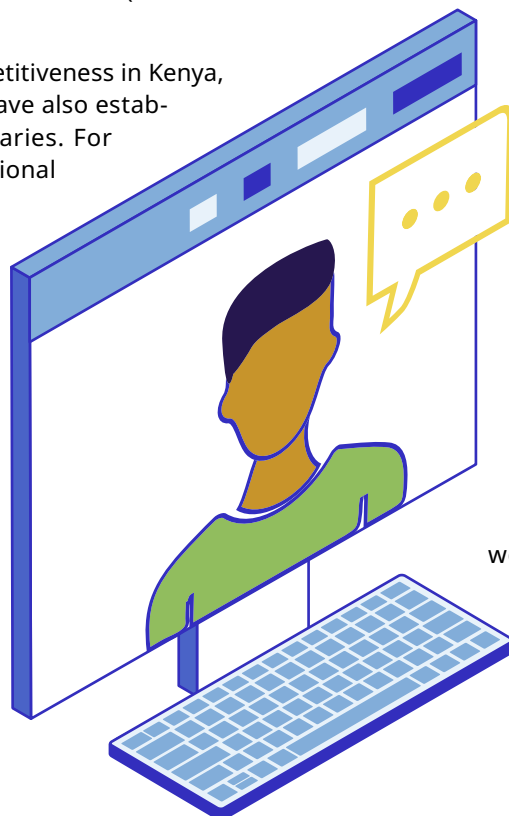
Due to labour cost competitiveness in Kenya, many large companies have also established their own subsidiaries. For instance, SS, an international company that is one of the largest outsourcers of varied tasks (such as data entry, annotation and transcription) to small BPO firms and crowdworkers in Kenya, set up its own delivery centre in Nairobi. While such subsidiary companies create local

employment opportunities by hiring women and young people from poor households with basic computer and numerical skills and English literacy, they have also destabilized many small BPO companies, which now face a reduction in outsourced work.

Some companies, such as AT, which rely on large companies for outsourcing tasks, have struggled to operate in the market due to this decline in outsourced work. To sustain its business, in addition to working directly with its clients, AT has established good relations with an online web-based platform, which outsources work to them. This strategy by small BPO companies of accessing work through online web-based platforms such as eLance, oDesk (now Upwork) and Guru was also observed during the period 2010–14 (Foster et al. 2018). However, they found that small companies were struggling to survive on the basis of such work alone as the tasks were of short duration and low value, and such companies had to turn towards domestic markets to sustain their business.

Labour cost competitiveness has also led to the emergence of new types of companies, such as CF, which has set up its delivery centres in India and Nepal and uses both local and crowdsourced labour through its platform to provide services to large companies in Europe and the United States.

The main service provided by the CF delivery centres relates to image annotation and data labelling of still video shots of road signs, traffic lights and pedestrians, to train autonomous vehicles to recognize these objects and navigate real-life situations with little human supervision. They also provide services such as transcription, categorization, tagging and content moderation. The company uses a hybrid workforce of online workers and locals, which enables it to train the local workforce in these tasks, and



repetition of tasks allows them to ensure quality, precision and efficiency, while at the same time maintaining competitiveness in the market.

Tasks such as data labelling and content moderation have not had much traction among traditional BPO companies in Kenya. Some of these firms, including HN, IN and CCI, stopped performing them after a year or so as they considered them to be low-end and low-value tasks. Furthermore, this work did not offer any opportunity for upward mobility in terms of either skills upgrading or learning for the company and at the same time profit margins were low and difficult to sustain in the long run.

### 3.3.2 Emergence of digital technology start-ups

The digital economy and the expansion of digital platforms have led to the emergence of new players: digital technology start-ups that provide new tools, products and services that enhance efficiency and functioning of the digital ecosystem. Moreover, the heightened expectation around automating specific tasks (Nedelkoska and Quintini 2018; Frey and Osborne 2017; Arntz, Gregory and Zierahn 2016) has created new demand and opportunities for AI-enabled services. In 2020, the global start-up economy generated US\$3 trillion in value and provided many entrepreneurial opportunities; although only 14 per cent of the start-up founders were female (Startup Genome 2020).

This section examines the motivations behind the rise of digital technology start-ups and how the products or services they provide benefit companies, including digital labour platforms. The analysis is based on semi-structured interviews conducted with ten digital technology start-ups based in San Francisco (United States), Bengaluru (India), Cherkasy (Ukraine) and Warsaw (Poland) between July 2019 and March 2020 (see [Appendix 3](#)).

Two types of digital technology start-ups can be distinguished, based on the responses to the ILO interviews: those that create technological products and services, and those that provide AI

**Advances in AI and natural language processing have made it possible for start-up companies to advertise and sell their services to businesses as AI-enabled.**

applications and AI-enabled services. The growth of these start-ups has been driven by three factors:

- ▶ Ease of entry, with low investment in physical assets compared to traditional start-ups and availability of IT infrastructure at a low cost. The availability of open source platforms and software allows for experimentation with new ideas and innovations to improve efficiency or productivity.
- ▶ Advances in AI and natural language processing, which have made it possible for start-up companies to advertise and sell their services to businesses as AI-enabled, with the resultant lowering of costs through the replacement of workers with AI.
- ▶ Availability of venture capital and accelerator funds to start-ups, which has played a crucial role by providing opportunities to entrepreneurs in developed and developing countries alike.

### Creation of products and services

Most start-up companies try to find niche areas where they can provide innovative services to platforms or traditional companies that improve their productivity. Developments in AI and, specifically, advances in data analytics and tracking techniques, have had major implications for pricing and marketing strategies, customer service management and risk assessment; hence the growth of start-ups that provide products and services, including web analytics and tracking, to traditional companies as well as to digital labour platforms.

Companies such as Crazyegg and Rytangle provide digital platforms or traditional companies with real-time data about the users accessing their platforms. Most digital platforms and traditional companies today have web analytics and tracking tools installed to track customer behaviour, which helps target their customers and improve their pricing and marketing strategies.

Companies like Cloudfary offer advanced software application solutions for digital platforms or traditional companies that allow for image and video processing, management of image and storage facility. Start-ups such as NoticeBoard have developed communication applications that help to improve communications between large fleets of ground staff or delivery workers – 1,000 or more workers requiring supervision and management – and their managers. E-commerce platforms and trucking companies in various regions have been using these applications to track and manage their workers. A number of other start-up companies provide customized software applications to traditional companies and digital labour platforms according to their requirements, often using open source tools and applications.

### Provision of AI applications

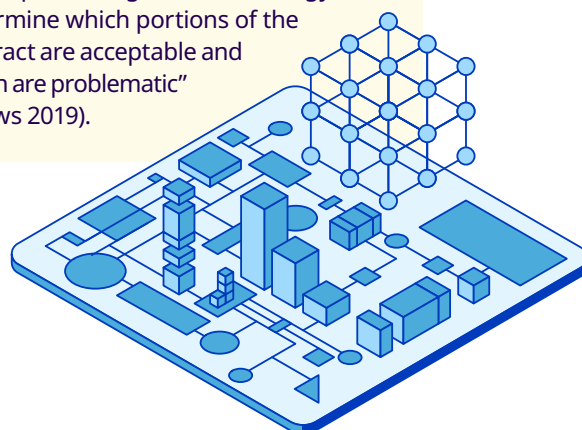
The past decade has witnessed the growth of AI start-ups due to the availability of vast financial resources from governments, the private sector and venture capitalists (Nitzberg, Seppälä and Zysman 2019). These start-ups offer a range of AI applications to companies, either fully automated or human-powered. Most such start-ups have two profiles: one for clients, with a website and a company name, exclusively focused on providing services using AI; and another for crowdworkers, with a website and company name offering work opportunities and the chance to earn an income (Schmidt 2019; ILO interviews with AI start-ups). Many of these companies have emerged in fields such as virtual assistance (secretarial tasks), legal services, microtasks (image and data annotation) and others which use crowdworkers to provide the services (see box 3.5). An investment review of 2,800 AI start-ups across Europe in 2019 found that about 40 per cent of them did not have anything to do with AI (Ram 2019).

#### ► Box 3.5 Proliferation of AI start-ups

Venture capitalists and other investors have been interested in investing in the automation of wide-ranging tasks, from secretarial to legal services, causing many start-ups to market themselves as AI companies in order to access such funding (Schmidt 2017; ILO interviews with AI start-ups). For example, Scale AI, Playment and Mighty AI explicitly market themselves as AI companies seeking to appeal to the automotive industry in preparing for and designing the next generation of driverless cars (Schmidt 2019).

Similarly, there has been a proliferation of start-ups that provide companies with virtual assistant services, such as appointment scheduling, note taking at meetings, or AI-managed mail. Some of the leading start-up companies in terms of venture capital investment in these areas include x.ai (US\$44.3 million) and Clara Labs (US\$11.4 million) (information based on Crunchbase database).

Legal services, considered to be one of the largest markets in the world, have also seen a phenomenal rise in start-ups (Toews 2019). Most legal start-ups, such as LawGeex, Klarify, Clearlaw or LexCheck, market themselves as providing automated AI legal services, including contract drafting, review and negotiation, thereby reducing the tedium of certain aspects of legal work. Furthermore, they emphasize that AI can automatically absorb written documents, “analyse them in full using natural language processing (NLP) technology, and determine which portions of the contract are acceptable and which are problematic” (Toews 2019).



The AI start-ups interviewed by the ILO are human-powered. However, AI start-ups often do not mention to their clients that their tasks are completed by a globally dispersed human workforce through digital labour platforms. Tubaro, Casilli and Coville (2020, 7) argue that the reason why most AI start-ups are not automating these tasks is that “machine learning is expensive, as it requires powerful hardware, the brainpower of highly qualified computer scientists, and top-quality data”, while it is easier and cheaper to “fragment the work into microtasks and sub-contract them to low-paid workers through platforms”. Most AI start-ups differentiate themselves from crowdsourcing platforms, such as AMT, Clickworker or CrowdFlower (now Appen), and market their crowd workforce as qualified or trained workers, or as experts in the field (Schmidt 2019; ILO interviews with start-ups; see box 3.6). Many of these AI-enabled services and the development of AI are in fact subsidized by crowdworkers, as they are needed initially to train the AI models to correctly infer patterns that can be automated over time. As a result, many of them are inadvertently helping large established companies to become “data-opolies” and control the market (Stucke 2018, 275).

Currently, these systems are designed to operate as human-in-the-loop, with a worker reviewing the AI analysis and making the final decisions (Armour and Sako 2020). Advances in AI and machine learning are ostensibly not eliminating humans from the performance of tasks, but are transforming their role and “integrating humans and computers more tightly” (Tubaro, Casilli and Coville 2020, 6). Furthermore, the AI applications available today are suited for limited usage; a general AI that can perform cognitive tasks as workers do remains far beyond the reach of current technology. A Massachusetts Institute of Technology taskforce, which looked at the implications of AI on jobs in a number of sectors, such as insurance, healthcare, autonomous vehicles and manufacturing, found that much of the AI systems that are deployed today can solve a limited set of specific problems, based on large amounts of data and by extracting patterns. However, “the ability to adapt

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Start-ups offer a range of AI applications to companies, either fully automated or human-powered.

to entirely novel situations is still an enormous challenge for AI and robotics” and AI applications are in their infancy in a number of sectors (MIT 2020, 34). Even within the narrow applications of AI that are used for hiring practices, obtaining a bank loan or face recognition, AI is revealing limitations; AI decisions risk being discriminatory as they can exhibit historical biases and their logic cannot be explained (Bodie et al. 2016).

Therefore, while one would have expected that tasks such as automating a virtual assistant would be relatively easy given the purported advances in technology, the fact that AI still operates with human-in-the-loop assistance shows that natural language processing is still in the development phase (see box 3.6). Though natural language processing capabilities are advancing, there is still a long way to go before the entire workflow process of a particular task is powered by AI end to end and AI completely replaces workers. Thus, while a business might adopt “virtual assistant” technology, persuaded that AI is processing its requests and thereby replacing its workforce, in practice the tasks are outsourced to crowdworkers through digital labour platforms. An ILO survey of about 300 online home-based workers in the Philippines found that about 14 per cent of the respondents were working as “virtual assistants” for clients based in Australia, Canada, the Philippines and the United States (ILO 2021; King-Dejardin, forthcoming). There might be some jobs lost or generated due to AI, but most importantly AI is leading to a shift in the nature of the employment relationship, as tasks are performed by invisible workers on digital labour platforms, raising questions about the quality of jobs.

► **Box 3.6 “Jordan”, the automated virtual assistant: A case study**

Jordan.inc,<sup>1</sup> founded in San Francisco, United States, in 2014, aims to provide business clients with an automated service for the scheduling of meetings. The company raised US\$120,000 as seed capital and a further US\$11 million from venture capital funds. It provides virtual assistant services and sells monthly subscription packages ranging from US\$99 to US\$399. By 2019, Jordan.inc had around 350 clients and a workforce of 18 in its San Francisco office (technical and engineering staff who develop the AI), together with some 200 workers around the world who perform microtasks through digital labour platforms.

The product, sold as “Jordan”, is a virtual assistant that coordinates and schedules meetings. Instead of sending multiple emails back and forth, a client can simply copy Jordan into all emails that refer to meeting requests, and Jordan then schedules the meetings and enters them into the business calendar in less than 45 minutes. The company claims that it is continuously improving Jordan with the help of smart and self-motivated “Jordan Remote Assistants”. Clients have praised Jordan for its efficiency and accuracy, which the company attributes to the combination of precise machine intelligence and the judgement of an expert team of workers. But what does this mean in practice?

*The challenge of automating the “virtual” assistant*

The challenge of automating a meeting schedule is that it requires the ability to understand the often idiosyncratic requirements of clients expressed in an email. For humans, this is a function of our natural language processing intelligence, but for AI this requires an additional large-scale input of data about customer preferences and behaviour for the AI to be trained to recognize patterns and make the correct decisions.

For example, a virtual assistant such as Jordan is not yet able to understand or process email content such as, “Hey, I can do a call next week”. According to AI developers at Jordan.inc, the wording of this message makes it difficult for AI to understand that: (i) the sender is requesting a meeting; (ii) the type of meeting request is a call; and (iii) the meeting is to be scheduled next week.

It appears that human expertise is still required for a simple message such as this, so that the information can be decomposed into a structure that AI can process.

*Implementation strategy for building and perfecting AI*

Jordan.inc implemented its strategy to develop and automate the virtual assistant service in two phases:

*(i) Phase 1: Exclusively human-driven*

The goal of the first phase was to build a client base so that technicians could collect data and develop AI for organizing meeting schedules. Initially, the company founders manually connected different calendars, messaged people and scheduled the meetings. They learned that the key qualities of a virtual assistant are good communication skills, intuition and a pleasant communication style. They then hired workers from Upwork, one of the largest online web-based freelance platform, and trained them to schedule meetings manually. As the client base expanded, Jordan.inc designed its own digital labour platform called “Workplace Jordan Remote Assistant” (JRA) instead of hiring workers through Upwork.

► **Box 3.6 (cont'd)**

*(ii) Phase 2: Hybrid (human-machine interaction)*

In the second, “hybrid” phase, AI developers at Jordan.inc attempted to automate the workflow process and build algorithms so that over time it would become cheaper to schedule tasks by reducing reliance on the growing JRA platform workforce. This phase involved a combination of human-machine interactions (a human-in-the-loop system), whereby workers on the JRA platform would extract parameters relevant for scheduling the meeting – availability of the participant, location, date and time – from emails, and on this basis train the AI, then check whether the parameters were being correctly used by the AI, and correct the decisions taken by the AI if necessary, thereby improving its future performance.

*Final outcome*

In 2020, Jordan.inc continued to combine the virtual assistant service with the human-in-the-loop system, despite its original ambition of developing a fully automated service. At this stage, human-machine interaction is integrated throughout the entire workflow and human judgement remains critical for reviewing final decisions. Administrative scheduling tasks have thus been only partially replaced by AI. In fact, work has been dispersed in the form of thousands of microtasks around the world to an invisible online crowd of workers. The JRA platform workers are based in around ten different countries, including the Philippines and the United States.

On the company website, Jordan.inc now explicitly mentions that scheduling workflows are efficient and accurate because they combine machine learning and expert human support. The development of a virtual assistant that can deliver 90 per cent precision through AI language processing alone would not be sufficient to attract and sustain a viable client base. The CEO of Jordan.inc has admitted that “AI has a long way to go before it can completely replace humans”.

<sup>1</sup> This case is based on an interview with representatives of a start-up company whose name has been changed to Jordan.inc (and the product to Jordan) to preserve anonymity.

**Source:** ILO interview, 2020.

Current AI advances in certain fields are demonstrating medium-term implications for work, workers and businesses through algorithmic matching, rating and pricing on e-commerce, business-to-business and digital labour platforms. In addition, AI seems to have radically altered marketing and sales activities in the consumer goods, retail and banking sectors through the use of data analytics and tracking tools that produce vast amounts of customer transaction and attribute data (Chui et al. 2018). This data is used in taking marketing decisions such as “pricing, promotions, product recommendations, enhanced customer engagement” (Davenport

et al. 2020, 27). AI applications can be deployed by digital platforms to analyse such data and deliver personalized recommendations to customers in real time. For instance, Amazon is said to change the price of its listed products every 10 minutes, which is more often than any retail shop can ever do (Mehta, Detroja and Agashe 2018). This is made possible due to the availability of large amounts of data that are collected on their consumers using various analytical tools on the platform. The implications of such developments in AI for traditional businesses and workers are discussed in section 3.4 and Chapter 4, respectively.

### 3.4 Impact of digital platforms on traditional businesses

The rise of digital platforms is resulting in competition between platforms and traditional businesses, with some platforms establishing a dominant position in the market, such as Amazon in the online retail sector or Uber in the taxi sector. These developments are presenting traditional enterprises, particularly SMEs, with opportunities and challenges. This section examines the implications of the rise of digital platforms for traditional businesses, with a focus on the retail sector.

There has been increasing consolidation in the digital economy, with about 5 per cent of platform companies (21 companies) making 20 per cent of the total net income among companies on Standard & Poor's 500 Index in 2019 (Moazed 2019; UNCTAD 2019). Consolidation is also occurring at the country and regional levels. For instance, in India, two platforms (Amazon and Flipkart) controlled about 63 per cent of the market share in online retail in 2018 (S&P Global Market Intelligence 2019). Similarly, in the European Union (EU), where there were over 10,000 platform start-ups in 2018, these accounted for only 2 per cent of the total value of all platforms, while the seven largest platforms accounted for 69 per cent of the estimated value of the digital economy (European Commission 2019; KPMG 2018). The consolidation is due to some of the major platforms acquiring both smaller platforms and traditional businesses. For example, Amazon and Alibaba, the two biggest e-commerce platforms, have acquired businesses in a range of sectors, from entertainment and finance to news and fresh food. In 2018, the US-based retail chain Walmart acquired Flipkart, one of the largest online retail platforms based in India, for an unprecedented US\$16 billion, in a move to take on Amazon in the online retail market (*Economic Times* 2018). Economies of scale, network effects and data collection enable platforms to achieve a

dominant market position. The degree of market power concentration can be discouraging not only for traditional businesses, but also for new platform entrants.

At the same time, certain dynamics within e-commerce markets have raised concerns regarding "anticompetitive collusive and unilateral conduct by economic operators" (OECD 2019b, 5). Amazon, for instance, has been criticized for its competition practices and their implications, particularly for SMEs, and is facing antitrust claims in a court in the United States (Bloomberg Law 2020). Large technology companies, such as Amazon, Apple, Facebook and Google, are increasingly being investigated by competition authorities around the world (see also Stucke 2018).<sup>6</sup> The Confederation of All India Traders, an organization representing small businesses in India, has been alleging, including through street protests, that unfair competition practised by Amazon is a threat to small businesses in the country (Sonnemaker 2020).

While some large traditional businesses may be able to acquire platforms to improve their competitiveness, most SMEs are unlikely to have adequate resources for such undertakings. Many SMEs therefore use digital platforms, such as Alibaba, Amazon or Flipkart, to gain access to a wider customer base and to build and sustain their business. However, traditional businesses, particularly SMEs, encounter a number of challenges in conducting their activities through digital platforms (Crémer, de Montjoye and Schweitzer 2019; OECD 2019b; UNCTAD 2019; Duch-Brown 2017a; Martens 2016). Some of these challenges are described below.

The contractual terms between platforms and business users, many of which are SMEs, are unilaterally determined by the platforms and are generally complex and unclear (European

<sup>6</sup> See, for instance, for Amazon: [https://ec.europa.eu/commission/presscorner/detail/pl/ip\\_19\\_4291](https://ec.europa.eu/commission/presscorner/detail/pl/ip_19_4291); for Apple: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_1073](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1073); for Facebook: <https://www.nytimes.com/2020/12/09/technology/facebook-antitrust-monopoly.html>; and for Google: <https://www.bbc.com/news/business-54619148>.



Commission 2016a and 2018). For instance, the criteria for blocking a user's account are not clearly defined, which can have severe implications for the continuation of their business operations (European Commission 2016a). Contracts are unilaterally determined, the commission fees charged by platforms to business users can vary considerably, and platforms can increase rates arbitrarily without any negotiation (this was particularly observed for location-based platforms).<sup>7</sup> During the first months of the COVID-19 pandemic, when many restaurants were largely dependent on delivery platforms to continue their business operations, the commission fees charged ranged between 15 and 35 per cent in the United States, while discounts were being offered to consumers (Cagle 2020).

Another factor shaping competition between platforms and traditional businesses is the classification of platform services. Digital labour platforms often avoid sector-specific regulations, such as those governing the taxi sector, by insisting that they are merely technology companies providing intermediation services. In the EU, a number of businesses have emphasized "that there is a problem stemming from the fact that entire sectors that are subject to sector-specific rules now in fact compete with online platforms in these same sectors, yet those online platforms are not subjected to the same regulations" (European Commission 2016b, 17). These rules cover areas such as consumer protection, social security, labour market regulation, and taxation of and technical standards relating to goods and services markets (Martens 2016). Nevertheless, judicial decisions such as that by the Court of Justice of the EU, which held that Uber's services must be classified as services in the field of transport,<sup>8</sup> can help create a level playing field with the traditional taxi sector.

There has been increasing consolidation in the digital economy, with about 5 per cent of platform companies (21 companies) making 20 per cent of the total net income.

Competition between platforms and traditional businesses is also increasingly shaped by data. This is especially so when platforms rely on data they collect from their business users to promote their own goods and services in the marketplace. Google, for example, was fined in 2017 by the European Commission for abusing its dominant position as a search engine by prominently placing its comparison shopping service "Google Shopping" in its search results.<sup>9</sup> More recently, the European Commission has launched an investigation into Amazon based on preliminary findings that the platform is using the data of sellers trading on the platform to directly compete with them.<sup>10</sup>

Furthermore, competition issues can occur not only when platforms promote their own goods and services over those of competitors, but also when they favour certain business users on the platform. In India, a number of antitrust cases have been filed by associations of businesses against retail platforms like Amazon and Flipkart, alleging preferential seller treatment through anti-competitive practices such as deep discounting (Kalra 2020).<sup>11</sup> This alleged preferential treatment

<sup>7</sup> Based on ILO interviews with restaurant owners.

<sup>8</sup> Case C-434/15 Asociación Profesional Elite Taxi v Uber Systems Spain, SL [2017], available at: <http://curia.europa.eu/juris/liste.jsf?num=C-434/15>.

<sup>9</sup> European Commission, Antitrust Case 39740 – Google Search (Shopping). For a summary of the decision, see the press release: [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_17\\_1784](https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1784).

<sup>10</sup> For more details, see: [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_2077](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2077); see also [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_19\\_4291](https://ec.europa.eu/commission/presscorner/detail/en/IP_19_4291).

<sup>11</sup> See, for example: Competition Commission of India, Case No. 09 of 2020, Case No.40 of 2019 and Case No. 20 of 2018.

becomes even more problematic considering that the decision to promote one business user over another is often based on algorithmic ranking which is non-transparent (European Commission 2017a). It is estimated that in the EU, the aggregated financial impact of the uncertainty derived from opaque practices on online platforms is between €2 billion and €19.5 billion per year (Duch-Brown 2017b). As a result, there have been a number of alternative platform initiatives, such as open source community platforms or platform cooperatives, that have tried to bring about more transparency by building fairer distribution systems (see box 3.7).

Opaque practices on e-commerce platforms are also observed in algorithmic pricing. More specifically, data collected on these platforms allows them to analyse the demand for goods and services, and to adapt prices accordingly via algorithms. Furthermore, data collection allows platforms to target the preferences of consumers and businesses, including through rebates, incentives and loyalty programmes. Many SMEs, however, lack such data or the financial means to be able to compete with platforms and their pricing systems. As a result, access to data, combined with their pricing strategies, offers platforms a competitive advantage over traditional businesses (Mehta, Detroja and Agashe 2018). This potentially threatens the sustainability of traditional businesses, and in turn the income stability of the workers engaged in these enterprises. Such pricing strategies are not specific to the retail sector but are also quite widespread in the taxi sector, which raises important questions from a competition law perspective (Fountoukakos, Pretorius and Geary 2018).

The competition and business operations on some platforms are also shaped by exclusivity

agreements (Competition Commission of India 2020) that can also lead to anticompetitive practices. In 2019, Google was fined by the European Commission for abusing its dominant position in the market for online search advertising intermediation by including exclusivity clauses in its agreements with third-party websites that prevented other online advertising brokers from placing their search adverts on these websites.<sup>12</sup>

Another challenge for many business users relates to copyright or intellectual property right infringements enabled through digital platforms, which have implications for their profits and reputation. However, regulatory frameworks are unclear about the responsibility of digital platforms in instances where the intellectual property rights of business users are infringed. In a recent case before the Competition Commission of India, a business alleged, among other issues, that counterfeit products with its branding were appearing on Amazon at “unfair and discriminatory prices”, to which the Commission replied that the issue, though of concern, was not one of antitrust.<sup>13</sup>

The rise of digital labour platforms also poses challenges that have not yet been adequately addressed for both domestic and international taxation regimes. Challenges in relation to taxation have also arisen with regard to data, especially given the fundamental role of data in the creation of value (OECD 2014). Traditional, formal enterprises have more clearly defined obligations regarding taxation and may end up paying higher taxes than many platforms, which therefore have a competitive advantage. On this issue, the European Commission announced in 2020 that it will move forward with a digital tax should the negotiations at OECD level not produce immediate and satisfactory results.<sup>14</sup>

<sup>12</sup> European Commission, Antitrust Case 40411 – Google Search (AdSense). For a summary of the decision, see the press release: [https://ec.europa.eu/commission/presscorner/detail/en/IP\\_19\\_1770](https://ec.europa.eu/commission/presscorner/detail/en/IP_19_1770).

<sup>13</sup> For more details, see: Competition Commission of India, Case No. 09 of 2020, Paras 8 and 28 <https://www.medianama.com/wp-content/uploads/CCI-Amazon.pdf>.

<sup>14</sup> For more details, see: <https://www.politico.eu/article/gentiloni-eu-ready-to-launch-new-digital-tax-if-us-stalls-global-talks/>.

### ► Box 3.7 Open source community platforms in the retail sector

The Open Food Network (OFN), a global open source software platform operating in the retail sector, is a virtual space in which farmers, wholesalers and communities can set up their own online stores and collaborate in selling their produce. It operates in a number of developing and developed countries, including Australia, Belgium, Brazil, Canada, Colombia, Costa Rica, France, India, Norway, South Africa, the United Kingdom and the United States. The aim is to create fairer and more transparent food supply chains, and to move towards regenerative forms of agriculture so as to build resilient natural systems.

The OFN platform offers subscription packages to shops or business users; for example, on the United Kingdom OFN platform, shops are offered four subscription packages depending on their size and scaling needs. These are: Basic (£1 minimum donation per month), Starter (2.4 per cent of monthly sales (including VAT)), Scale (£60 per month plus 0.6 per cent of monthly sales (including VAT)) and Enterprise (custom pricing). Depending on the plan, shops can benefit from additional digital tools and assistance, yet they all get full voting rights irrespective of the plan selected.

**Sources:** <https://www.openfoodnetwork.org/find-your-local-open-food-network/>; <https://about.openfoodnetwork.org.uk/pricing-and-plans/>.

Finally, a key challenge that many businesses face relates to dispute resolution. The need to ensure fair dispute resolution with platforms has been invoked by business users in the EU, especially with regard to sudden delisting of accounts (European Commission 2017b). For business users such as SMEs, fast and easy redress mechanisms are not only crucial to ensuring fairness and safeguarding their fundamental right to do

business in equitable circumstances, but also to ensuring business continuity when they are confronted with unjustified delisting or freezing of assets (European Commission 2017c). All these challenges are increasingly being subject to thorough consideration in a number of countries and Chapters 5 and 6 discuss some of the measures that have been taken.



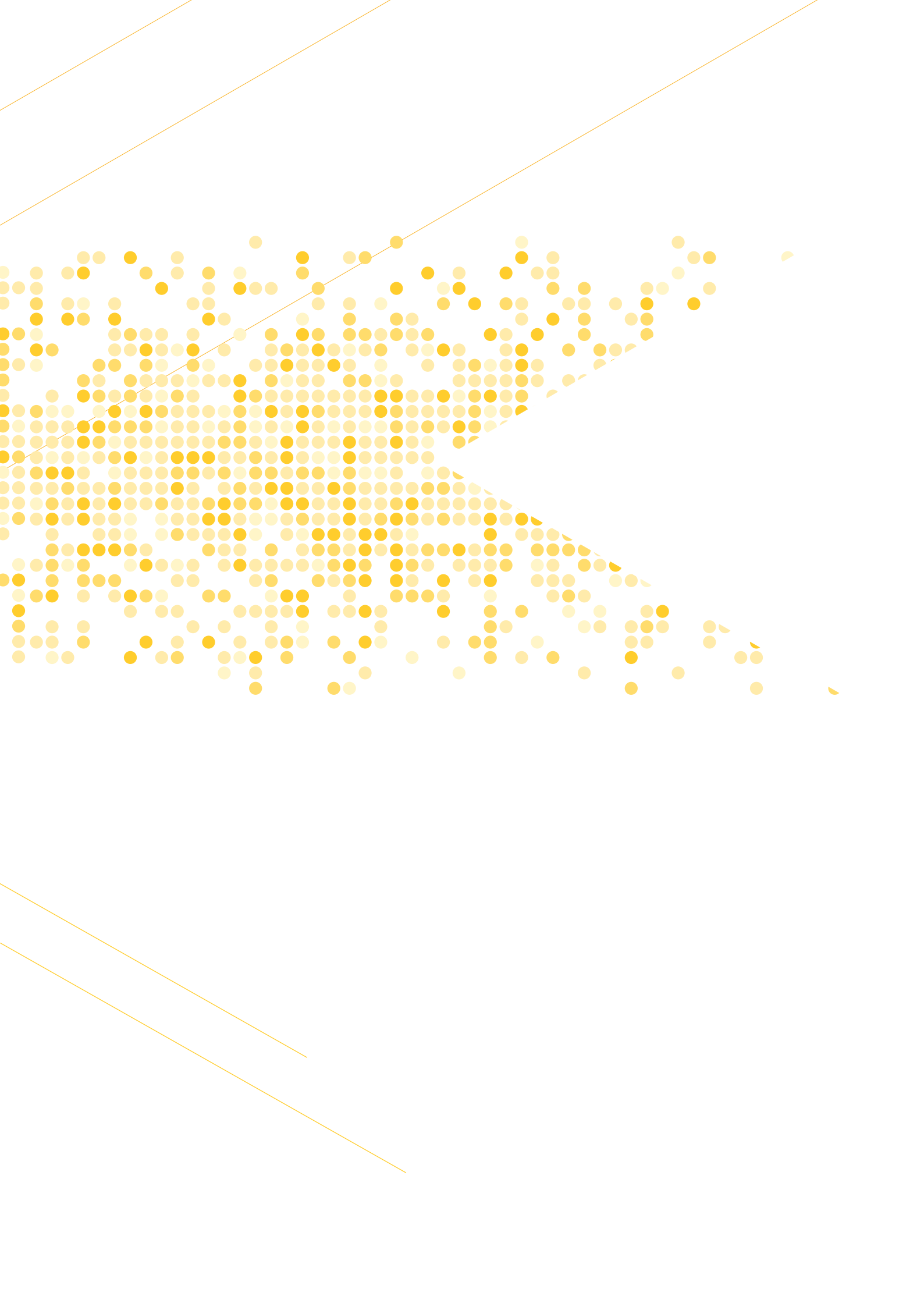
## ► Conclusion

This chapter has shown that a wide variety of businesses are increasingly using digital labour platforms, both online web-based and location-based, in their efforts to achieve greater efficiency and expand their customer base, among other factors. Several benefits for businesses in using online web-based platforms have emerged: the platforms allow them to streamline recruitment processes and to better match talent with needs, to reduce costs and to enhance their access to knowledge and innovate faster. Having access to a large global pool of workers with diverse skill sets accessible through online web-based platforms can be seen to be contributing towards improved organizational performance for many firms. For several of these businesses, SMEs in particular, the use of location-based delivery platforms has opened up opportunities to expand their markets as well as increase productivity and profitability, while taxi platforms have enhanced the convenience and accessibility of transportation for many businesses and consumers.

Furthermore, the rise of digital platforms has created opportunities for entrepreneurship and innovation for BPO companies and digital start-ups. BPO companies have been able to transition from providing voice-based to digital services in order to cater to the demands of their clients. Many digital start-ups have also sprung up to meet the demands of automated and AI-enabled services, for example in analytics and tracking. However, as AI technology is far from mature and a completely autonomous AI remains a distant prospect, many such start-ups draw on human intelligence to undertake tasks and support machine learning by engaging a globally dispersed workforce that is available every day and round the clock (24/7) on digital labour platforms at a relatively low cost. At the same time, digital platforms in sectors such as retail have also benefited many businesses, especially SMEs, which can increasingly sell products globally through e-commerce platforms.

While the proliferation of platforms and their use by businesses have provided opportunities, a multitude of challenges have also emerged. BPO companies face competition from large companies and the prevalence of low-end and low-value tasks reduces their margins, particularly in the case of SMEs. For businesses that are dependent on delivery platforms, poor digital infrastructure as well as platform glitches or delays caused by the delivery couriers can have a significant impact on the smooth running of the business, while high commission fees can reduce profits. Traditional businesses, particularly in the retail sector, are facing market disruptions from large e-commerce platform companies. While some businesses have resorted to joining platforms to reach a wider customer base, they face challenges in terms of unfair competition, unfavourable contractual terms, non-transparency on the part of the platforms (with regard to data and pricing), weak dispute resolution mechanisms, and, more broadly, an uneven playing field. Many of these issues are also increasingly receiving regulatory attention, particularly from competition authorities in many countries.

Despite such challenges, digital platforms have become pervasive in today's society and economy, especially since the outbreak of the COVID-19 pandemic. Given the increasing reliance of businesses on digital labour platforms and the fact that these platforms are gradually shaping the world of work, it becomes all the more relevant and urgent to better understand the implications of these developments for the worker experience in the digital economy. In this regard, the next chapter captures the diverse experience of workers on both online web-based and location-based digital labour platforms.







# 4

## **Digital labour platforms and the redefinition of work**

Opportunities and  
challenges for workers

# Design of a platform

## The worker experience

### ▶ Accessing and performing work

**65 hours** is the average working week of an app-based taxi driver



Resources required

**69%** of app-based taxi drivers own their vehicle

**70%** of them have taken a loan

Access to the platform

Terms of service agreements

Demonstrate capability

Commission fees

Online web-based  
**3.5% to 20%**

Taxi  
**5% to 25%**

Costs incurred

Working time

**1/3** of every hour is unpaid on online web-based platforms

Algorithmic matching process

Autonomy and control

Workers on freelance platforms

**47%** are monitored by their clients for hours worked...

**46%** are required to take screenshots of their work...

**43%** are required to be available during a specific time...

▶ On a regular basis

Quality assurance of work

### ▶ After finishing work

Workers whose account was deactivated

Taxi  
**19%**

Delivery  
**15%**

Lack of awareness of a dispute resolution mechanism

Freelance platforms  
**52%**

Taxi  
**42%**

Delivery  
**32%**

Workers whose work was rejected

Microtask platforms  
**86%**

Freelance platforms  
**35%**

Social protection (access to pension)

Online web-based  
**20%**

Taxi  
**18%**

Delivery  
**17%**

Hourly earnings (US\$)

Microtask  
**3.3**

Delivery  
**0.9 to 3.5**

Freelance  
**7.6**

Taxi  
**1.1 to 8.2**



Workers' ratings are decisive for accessing work

Freelance platforms

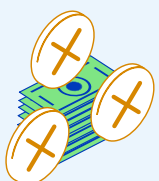
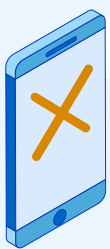
**82%**

Taxi

**72%**

Delivery

**65%**





▶▶ The online world is complicated and full of opportunities and hopes, and of course is also full of various traps and pitfalls.

▶ Male respondent on freelance platform EPWK (China)

## ▶ Introduction

The previous chapters have presented the emergence of digital labour platforms, their business model, and how they are changing the organization of work. Platforms are increasingly redefining, through the use of technology, how economic relationships are established between workers and clients or customers, many of whom are geographically dispersed around the world.

Simultaneously, digital labour platforms are creating opportunities for work and gaining popularity globally among policymakers and governments as a means of boosting economic development, along with enhanced information and communications technology (ICT) penetration in many countries (AfDB et al. 2018; Roy, Balamurugan and Gujar 2013; Narula et al. 2011). Moreover, digital labour platforms are attracting workers across multiple sectors and countries as they provide flexibility in work schedules, the option to undertake work from any place and at any time, and the ability to choose the tasks to be performed (Berg et al. 2018; AfDB et al. 2018).

Despite the opportunities emerging through digital labour platforms, concerns are being raised about the worker experience on such platforms, particularly with regard to working conditions – from limited access to work and social protection to low earnings and income volatility (Rani and Furrer, forthcoming; Federal Reserve Board 2019; Berg et al. 2018; Farrell and Greig 2016; United Kingdom, Department for Business, Energy and Industrial Strategy 2018a). Ensuring decent work opportunities for all calls for a better understanding of the platform worker experience, and of worker motivations, opportunities and challenges across multiple sectors, countries and contexts.

This chapter presents findings from ILO surveys conducted among workers engaged on online web-based and location-based platforms. It documents worker experience on online web-based platforms such as microtask, freelance or contest-based and competitive programming platforms through surveys conducted at the global level, and at the country level in China and Ukraine. Through extensive field-based surveys it also presents new insights into the situation of workers in taxi and delivery services in developing countries, which so far has remained inadequately explored. By drawing on the findings of surveys conducted among some 12,000 respondents, the chapter provides a first major comprehensive picture of the worker experience on digital labour platforms in multiple sectors and countries.

The chapter begins by providing the basic demographic characteristics of the platform workers surveyed and their motivations for undertaking platform work in section 4.1. Section 4.2 explores the heterogeneity of worker experience in navigating complex platform designs to obtain work, perform tasks and receive income, thereby bringing to the fore the opportunities and challenges encountered with regard to access to work, earnings, working time, social protection, and occupational safety and health. Section 4.3 focuses on how digital labour platforms use algorithms to manage and evaluate workers and how that practice is impacting the extent of autonomy and control that workers can exercise over their work. Section 4.4 investigates the worker experience with regard to skills acquisition and development, and skills mismatch as digital labour platforms increasingly redefine the relationship between formal education and tasks performed. Section 4.5 discusses the role of platform design in shaping the worker experience in the context of non-discrimination issues.



## 4.1 Basic demographic characteristics of platform workers

The ILO conducted several surveys across countries and sectors between 2017 and 2020 (see table 4.1). In the global surveys conducted on microtask (2017), freelance and competitive programming platforms (2019–20), about 2,900 respondents from 100 countries took part. In addition, two country-specific surveys of workers on online web-based platforms were conducted in China (1,107 respondents) and Ukraine (761 respondents) in 2019. In this chapter, the term “online work” includes the combined data from the global and country-specific surveys to provide a broad overview of the worker experience on online web-based platforms. When referring to “developed” or “developing” countries with regard to these platforms, for methodological reasons (see [Appendix 4A](#)) only the global surveys are taken into account; the country-specific surveys are excluded.

Surveys were also conducted among workers on location-based platforms during 2019 and 2020 with a focus on the app-based taxi sector in nine

countries, and the app-based delivery sector in 11 countries, comprising about 5,000 respondents spanning the Arab States, Africa, Asia and the Pacific, Eastern Europe, and Latin America and the Caribbean. This was complemented by a survey of over 2,200 respondents in traditional taxi (nine countries) and delivery (four countries) sectors.

All the surveys contained both quantitative and qualitative questions, including open-ended text questions aiming to obtain insights into the experience of workers engaged in these sectors (see [Appendix 4A](#)). Given the lack of official statistical information on the numbers and characteristics of platform workers (see section 1.3), including those using online web-based and location-based platforms, there was no sampling base from which a random sample could be drawn. The statistics presented in this chapter therefore reflect the findings of the ILO surveys, and are not necessarily representative of a global or country-level population.

► Table 4.1 Number of respondents, by survey

Online web-based platforms		Main platforms covered	Number of respondents
Global surveys	Freelance and contest-based	Freelancer, Upwork	449
	Competitive programming	CodeChef, Codeforces, HackerRank, Iceberg, Topcoder	62
	Microtask	AMT, Clickworker, CrowdFlower (now Appen), Microworkers, Prolific	2350
Country-specific surveys	China	680, EPWK, ZBJ, k68	1107
	Ukraine	Advego, Freelance, Freelancehunt, Freelancer, Kabanchik, Upwork	761
Location-based sectors		Countries surveyed	Number of respondents
Taxi	App-based	Chile, Ghana, India, Indonesia, Kenya, Lebanon, Mexico, Morocco, Ukraine	2077
	Traditional	Chile, Ghana, India, Indonesia, Kenya, Lebanon, Mexico, Morocco, Ukraine	1864
Delivery	App-based	Argentina, Chile, China, Ghana, India, Indonesia, Kenya, Lebanon, Mexico, Morocco, Ukraine	2965
	Traditional	Chile, India, Kenya, Lebanon	347

**Sources:** ILO global surveys of crowdworkers (2017) and workers on freelance and competitive programming platforms (2019–20); ILO surveys of platform workers in China (2019) and Ukraine (2019); and ILO selected country surveys of taxi drivers and delivery workers (2019–20).

### 4.1.1 Age distribution of platform workers

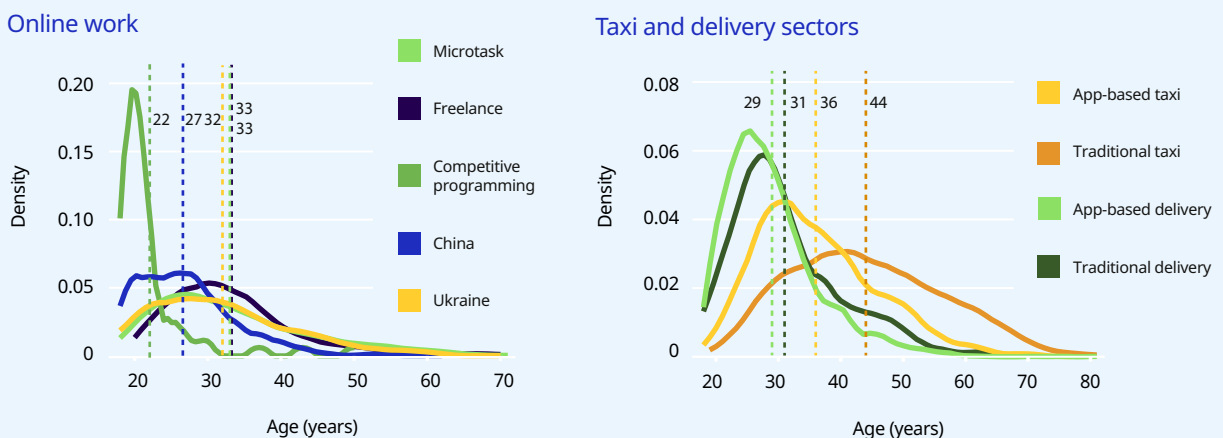
Across the sectors surveyed, the majority of workers engaged on online web-based and location-based platforms are below 35 years of age. The average age of workers on **online web-based platforms** is about 31 years and is higher among workers from developed countries (35 years) than in developing countries (30 years). Workers engaged in competitive programming tend to be the youngest (22 years) (see figure 4.1.), indicating that many are using these platforms to hone their skills. In the **taxi and delivery sectors**, app-based taxi drivers (36 years) and delivery workers (29 years) tend to be younger than those engaged in traditional settings (taxi drivers: 44 years; delivery workers: 31 years).

### 4.1.2 Participation of male and female workers on platforms

About four in ten workers on **online web-based platforms** are women, while in developing countries only about two in ten are women (see figure 4.2). These figures underline the fact that, in a similar way to the offline labour market, the online labour market poses challenges for women in accessing work. Among competitive programmers, only 1 out of 62 respondents was female, which reflects the occupational segregation in the IT sector (see also Aleksynska, Bastrakova and Kharchenko 2018; Shevchuk and Strebkov, forthcoming).

The **app-based taxi and delivery sectors** are largely male-dominated. Women comprise fewer than 10 per cent of workers in these sectors, and this proportion is even lower in the traditional sectors (below 5 per cent), as shown in figure 4.2. The share of women is considerably higher in some countries, for instance in Indonesia in the app-based taxi sector (13 per cent), where female-only

► Figure 4.1 Age distribution, by occupation

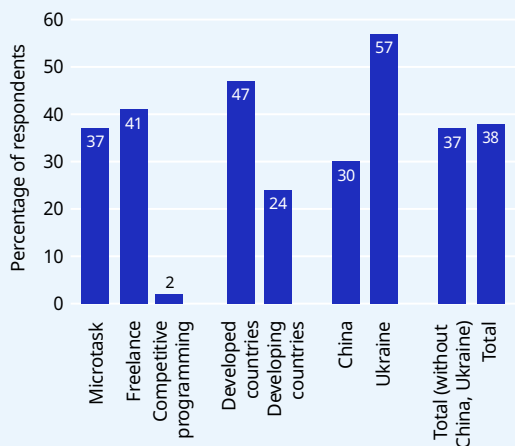


**Note:** Vertical dashed lines indicate mean values.

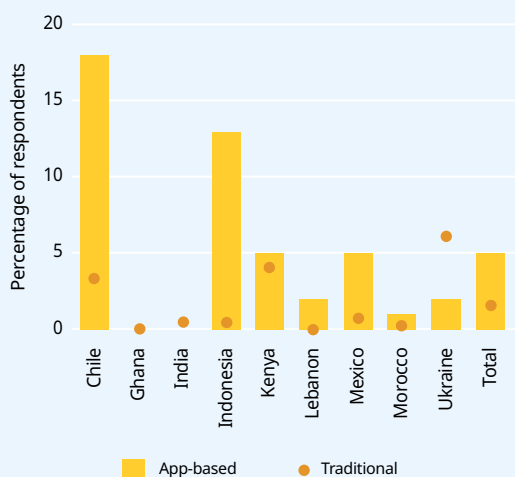
**Sources:** As for table 4.1.

► **Figure 4.2 Share of female respondents, by occupation and country**

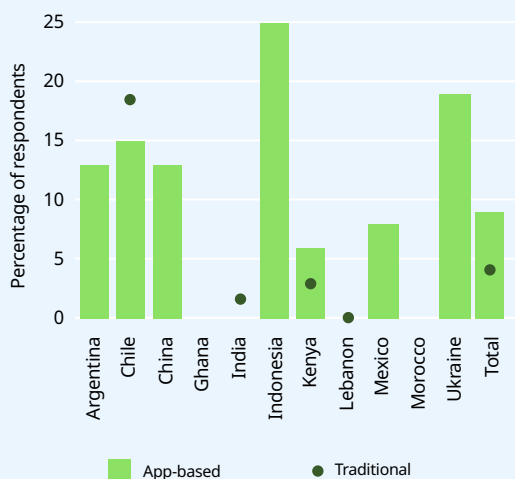
#### Online work



#### Taxi sector



#### Delivery sector



Sources: As for table 4.1.

taxis are preferred by some female clients to mitigate risks of violence and harassment (*Straits Times* 2015). In Kenya, where only 5 per cent of app-based taxi drivers are women, some platforms are undertaking special measures to encourage their greater participation, such as priority access to vehicle financing (Taxify). A platform with female-only taxis has also emerged (An-Nisa Taxi) (Osman 2019).

### 4.1.3 Participation of workers from rural and urban areas

This section focuses on workers on online web-based platforms, not on taxi or delivery services as the surveys for the latter were conducted in urban areas only. There is limited penetration of **online web-based platforms** in rural areas, particularly in developing countries. The vast majority of respondents (84 per cent) on such platforms reside in urban or suburban areas. The share of those performing online work who live in rural areas or small towns is higher in developed countries (23 per cent) than in developing countries (16 per cent). With increased ICT connectivity and its spread to rural areas, there is income-generating potential for online work in these areas, whereby skilled workers would be able to access jobs in the global labour market (Kalleberg and Dunn 2016).

*I live in an area where there are few opportunities for this type of work. My only other option to work in this field would be to move to a big city, pay high rent and reduce the time I spend with my family and friends – Female respondent on freelance platform Upwork (Ireland)*

## 4.1.4 Participation of migrants on platforms

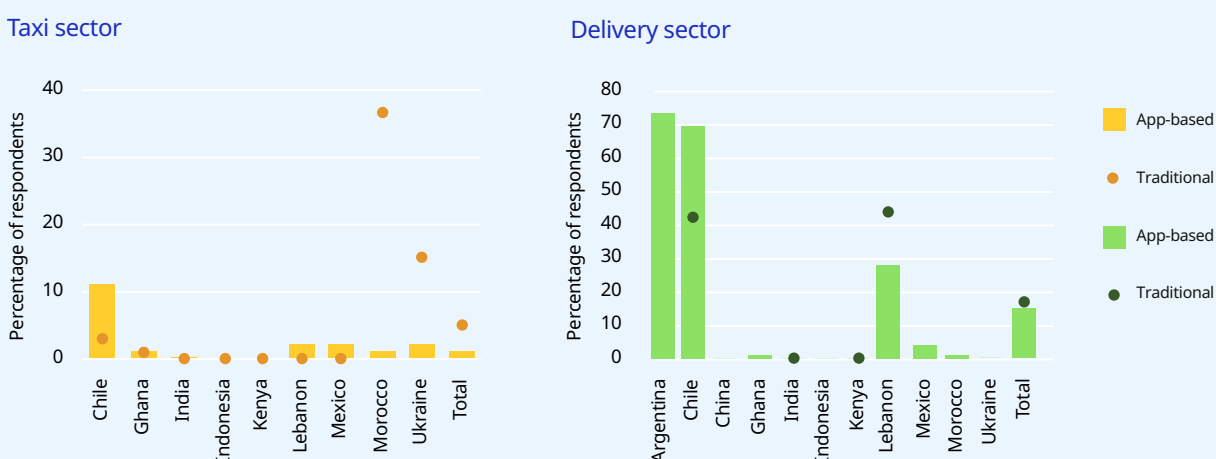
*I signed up to Upwork after emigrating. I used it to get started in a new country as a freelancer. I got work online very quickly and it provided me with an income to get started – Female respondent on freelance platform Upwork (Canada)*

**Online web-based platforms** offer some opportunities to migrant workers<sup>1</sup> in accessing work, particularly in developed countries. The ILO surveys reveal that of those engaged on freelance platforms, 17 per cent are migrant workers. Their share is higher in developed countries (38 per cent) than in developing countries (7 per cent), and is higher among women (39 per cent) than men (36 per cent) in developed countries, while it is similar across the sexes in developing countries. This could be indicative of the intersectional barriers (such as those based on gender, migrant status, indigenous or tribal identity, among others) to accessing offline work faced particularly by many migrant women (King-Dejardin 2019).

In some countries, many migrant workers engage in the **app-based delivery sector**. The proportion of migrant workers is higher in this sector (15 per cent) than in the app-based taxi sector (1 per cent), and similar differences exist in the traditional delivery and taxi sectors. However, there are considerable variations across countries (see figure 4.3). Argentina and Chile, for instance, each with a high proportion of migrant workers in the app-based delivery sector (over 70 per cent), have seen a large influx of Venezuelan refugees and migrants into their national labour markets, who face uncertain employment prospects even though many have high education levels (ILO 2020c): in Argentina and Chile, 43 and 47 per cent respectively of migrant respondents had attained a university degree. Working in the app-based delivery sector emerges as an option for many due to the lack of other available jobs corresponding to their education, low entry barriers and ease of access to this sector, as well as discrimination in accessing jobs elsewhere.

*In the period immediately before I started working as a courier, I was a salaried employee. I quit because I suffered discrimination and exploitation against Venezuelans – Male respondent on app-based delivery platform Uber Eats (Chile)*

► **Figure 4.3 Share of migrant respondents in the taxi and delivery sectors**

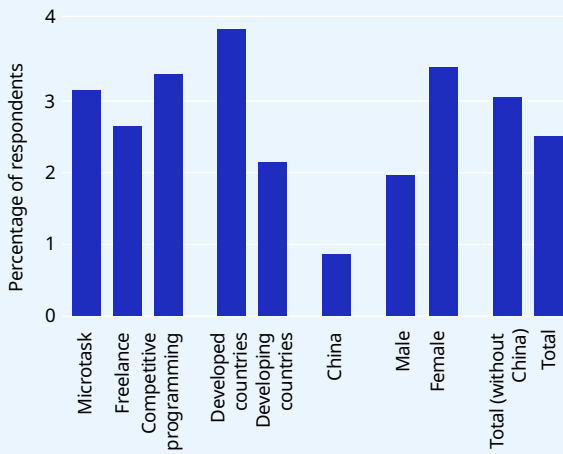


**Source:** ILO selected country surveys of taxi drivers and delivery workers (2019–20).

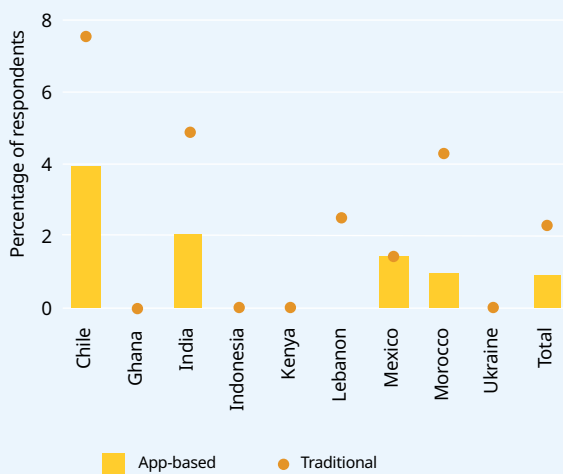
<sup>1</sup> In this chapter, “migrants” refers to workers born in a country that is different from where they were residing at the time of the survey.

► **Figure 4.4 Share of respondents who consider their health to be poor or very poor, by occupation and country**

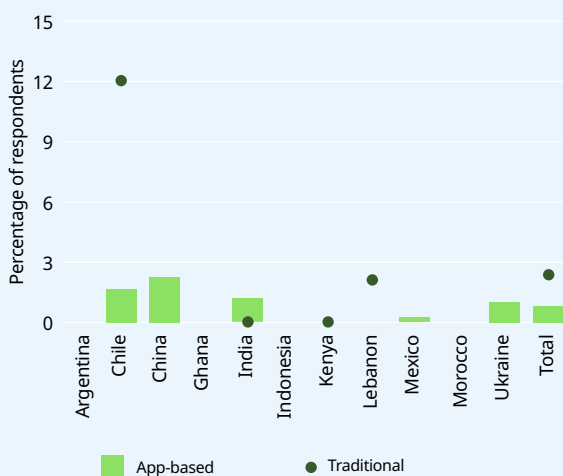
Online work



Taxi sector



Delivery sector



**Sources:** ILO global surveys of crowdworkers (2017) and workers on freelance and competitive programming platforms (2019–20); ILO survey of platform workers in China (2019); and ILO selected country surveys of taxi drivers and delivery workers (2019–20).

### 4.1.5 Health status of workers on platforms

I use a wheelchair and experience severe chronic pain as a result of a congenital orthopaedic condition. My days often depend upon my pain. Freelancing gives me the flexibility to set my own schedule and work where and when I need to. I can work in 10-minute bursts if that is what I need to do. And I often do that – *Female respondent on freelance platform Upwork (United States)*



I became a driver because my health is not good enough to work somewhere else – *Male respondent on app-based taxi platform DiDi (Mexico)*

Some people in poor health or with disabilities are able to find work on online web-based and location-based platforms. About 2 per cent of respondents on **online web-based platforms** reported poor or very poor health status, with no major differences by sex (see figure 4.4.). Online work can also provide opportunities for persons with disabilities, given the additional barriers they encounter in labour markets (Fundación ONCE and the ILO Global Business and Disability Network 2019). In particular, some respondents in poor health or with disabilities identified the possibility to work from home as being beneficial in finding and carrying out work. The proportion of respondents reporting poor or very poor health in the **app-based taxi and delivery sectors** varied across countries. In the app-based taxi sector it ranged between 0 and 4 per cent, while in the traditional sector it was slightly higher. The proportion of delivery workers with poor or very poor health ranged between 0 and 2 per cent in the app-based delivery sector (see figure 4.4).

### 4.1.6 Education levels of platform workers

Workers on **online web-based platforms** are generally highly educated, especially in developing countries. Over 60 per cent of respondents engaged in online work, women and men alike, are highly educated (having attained a university degree) (see figure 4.5). A higher proportion of workers engaged on freelance platforms (83 per cent) are highly educated compared to those on microtask (64 per cent) and competitive programming (50 per cent) platforms. A larger share of respondents on competitive programming platforms (73 per cent) are pursuing a degree compared to those on freelance (25 per cent) and microtask (21 per cent) platforms.

A larger proportion of workers on online web-based platforms in developing countries (73 per cent) are highly educated compared to those in developed countries (61 per cent). This proportion is even higher among women in developing countries (80 per cent). This could be due to factors such as the lack of opportunities in the local offline labour markets, as well as additional barriers to women in particular that prevent them from accessing work outside their homes, including care responsibilities and prevailing gender norms.

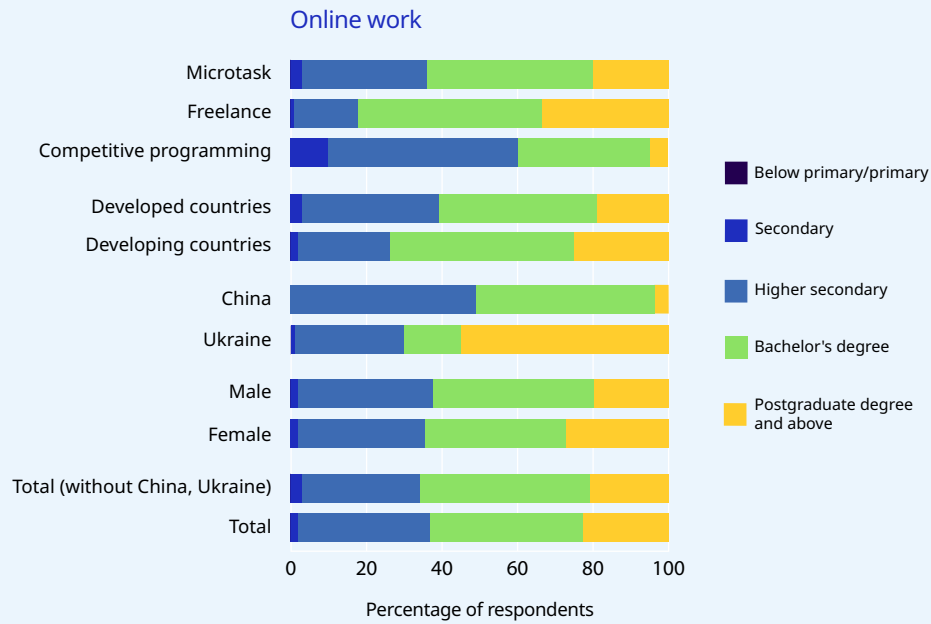
**I started freelancing a couple of weeks after I graduated from college. I think I had gone to a couple of interviews beforehand but none of them called back so I decided to try freelancing – Female respondent on freelance platform Upwork (Philippines)**

A sizeable proportion of workers engaged in the **app-based taxi and delivery sectors** have high educational levels, including women and young people. Even though these sectors are often considered to be low-skilled, 24 and 21 per cent of app-based taxi drivers and delivery workers respectively are highly educated (see figure 4.5). These proportions are lower in the traditional sectors. In some countries, such as Chile and India, a considerably higher proportion of app-based taxi drivers and delivery workers are highly educated compared to those in the traditional sectors.

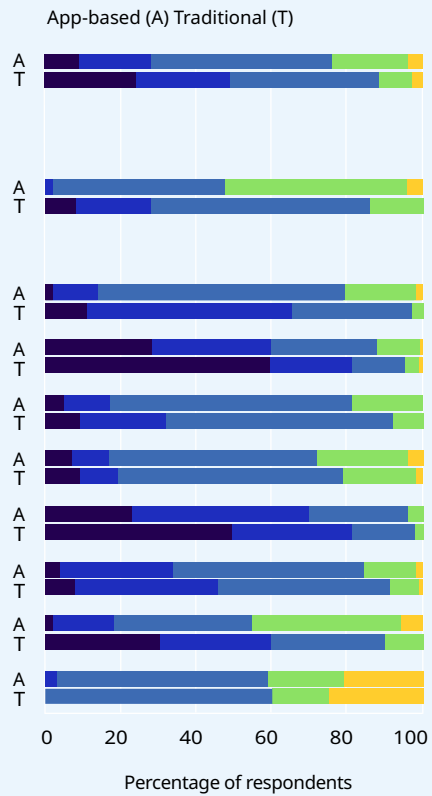
Furthermore, even though there are fewer women engaged in the app-based taxi and delivery sectors, a higher proportion of them are highly educated (42 and 29 per cent respectively) compared to men (24 and 20 per cent respectively). Younger app-based taxi drivers and delivery workers (18–24 years) tend to be highly educated (24 and 17 per cent respectively) compared to workers in the traditional sectors (12 and 4 per cent respectively). This reflects the challenges in the context of youth employment, where young people are often confronted with poor employment opportunities (ILO 2020d and 2020e) and look for any alternative possibilities to earn an income (Aleksynska 2021; Anwar and Graham 2020; Surie and Koduganti 2016).

**I took a training programme in the mechanical field for operating machines. The training is now over, and until I find a job in that field, I am working as a delivery boy – Male respondent on app-based delivery platform Uber Eats (India)**

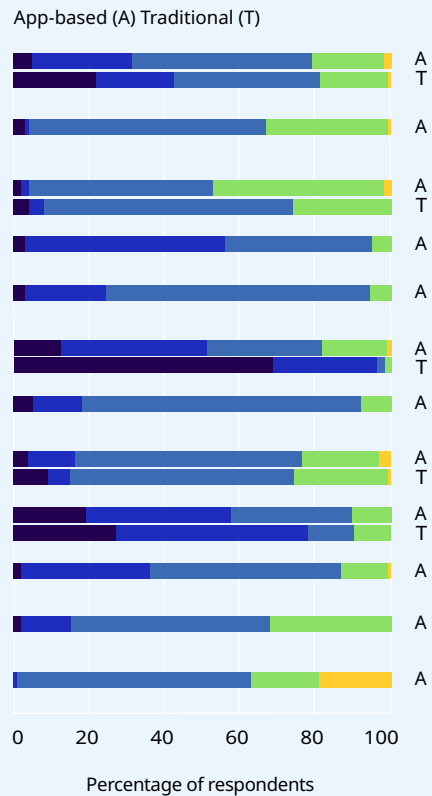
► **Figure 4.5 Educational levels of workers, by occupation and country**



### Taxi sector



### Delivery sector



Sources: As for table 4.1.



### 4.1.7 Worker motivation for engaging in platform work

Complementing pay from other income sources is the main motivation for performing tasks on **online web-based platforms** (39 per cent), followed by the preference or need to work from home or for job flexibility (29 per cent), and as a form of leisure or because it is enjoyable (18 per cent) (see figure 4.6). Complementing pay is a major motivating factor among younger workers in particular (48 per cent for those aged 18–24 years) compared to older workers.

**I also wanted to earn extra income to support some financial obligations for my family. The salary I earn from my current job is not enough to cover the growing need of my family – Male respondent on freelance platform Upwork (Philippines)**

**I wanted a side income and had a try. And I was surprised I could earn some money – Female respondent on freelance platform Upwork (Canada)**

In developing countries, the key motivating factors are the preference or need to work from home or for job flexibility (36 per cent) and complementing pay (26 per cent), whereas in developed countries it is mostly complementing pay (43 per cent). Furthermore, although not being able to find traditional work is also a motivation for some in both developing and developed countries (7 and 8 per cent respectively), better pay than in other available jobs is particularly relevant for those in developing countries (11 per cent).

**I live in an overpopulated country where it is very tough to get a good job. The pay is better than usual jobs, I am my own boss and I like the freedom – Male respondent on freelance platform Upwork (Bangladesh)**

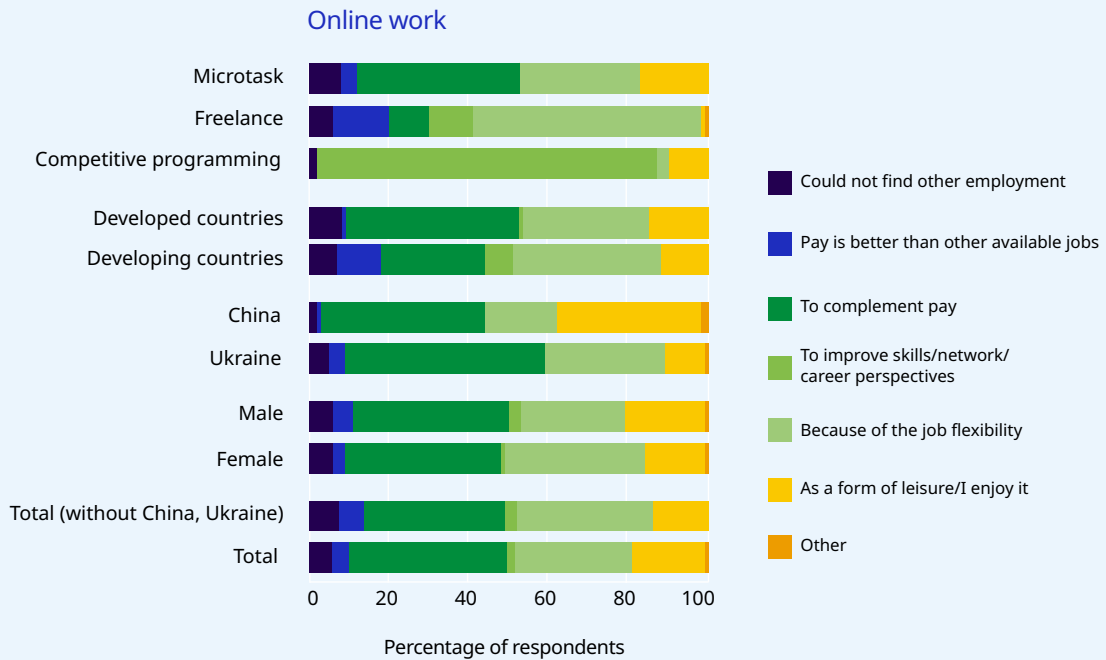
Working from home or job flexibility are particularly important for women. A higher proportion of women (35 per cent) than men (25 per cent) on online web-based platforms are motivated by the preference or need to work from home or for job flexibility, and this is the case in developed and developing countries alike. About 23 per cent of women who perform online work have children under the age of six years. As women with young children tend to face a “motherhood employment penalty” and globally account for the lowest employment rates (ILO 2018a; Grimshaw and Rubery 2015), online work is providing opportunities to work while managing care responsibilities.

**As a woman, I prefer to work from home. I earn better than others. I have a child. I can maintain my family instead of doing a regular job. That’s the reason I prefer to work from home – Female respondent on freelance platform Upwork (Bangladesh)**

Competitive programmers are motivated to work on platforms to improve their skills, establish networks and enhance their future career prospects. About 85 per cent of respondents were motivated by this factor, which is a considerably higher proportion than that of respondents on freelance platforms (12 per cent). While some respondents participated mainly on CodeChef and Codeforces, which are platforms primarily used for improving skills, others participated on HackerRank and Topcoder, with the prospect of earning prizes, apart from enhancing skills and employment prospects.

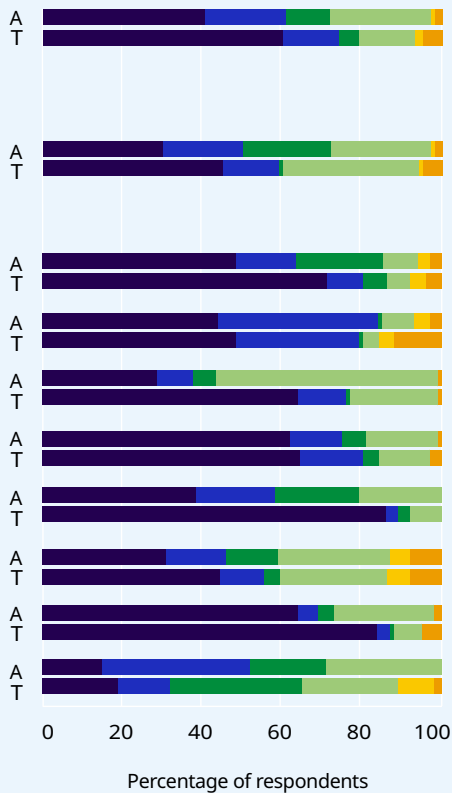


► **Figure 4.6 Most important reason for performing work on digital labour platforms, by occupation and country**



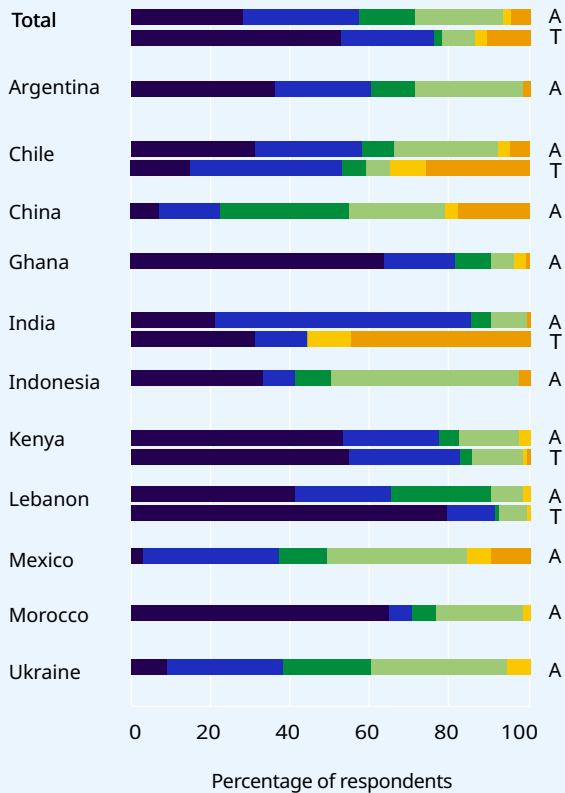
### Taxi sector

App-based (A) Traditional (T)



### Delivery sector

App-based (A) Traditional (T)



Sources: As for table 4.1.

**I like to do competitive programming because it challenges us to push our limits and think out of the box. It also helps to get a job in big companies as their tests are similar to competitive programming competitions – Male respondent on competitive programming platform HackerRank (India)**

The lack of alternative employment opportunities is a prime motivating factor for many workers on **location-based platforms**. This is the case for 40 and 28 per cent of the respondents in the app-based taxi and delivery sectors respectively, and also a major motivating factor in the traditional sectors. Other key motivating factors among app-based workers include job flexibility, as well as better pay (see figure 4.6). At the same time, however, there are some differences across countries and also across population sub-groups in some countries. For instance, in Chile, while those app-based delivery workers born in the country are motivated by flexibility (42 per cent), migrant workers in particular are motivated by a lack of alternative employment opportunities (38 per cent).

**App-based taxi driving was the only job that was available – Male respondent on app-based taxi platform Safe Boda (Kenya)**

**I started working as an app-based taxi driver to get instant money as I had an economic emergency situation caused by unemployment – Male respondent on app-based taxi platform Beat (Chile)**

#### 4.1.8 Worker satisfaction with platform work

A majority of workers on **online web-based platforms** are either satisfied or very satisfied with their work, and these figures are similar across the sexes (see figure 4.7). This is more likely to be the case for workers in developing countries (80 per cent) than for those in developed countries (71 per cent), and particularly so for women in developing countries (84 per cent).

**I participate in freelance work because I was never this available to my children when I worked in the corporate set-up. This allowed me to become a mom yet still provide like a breadwinner – Female respondent on freelance platform Upwork (Philippines)**

**Online platforms are very good because there is free time for other activities and no pressure from the employer as opposed to working in an office – Male respondent on freelance platform Kabanchik (Ukraine)**

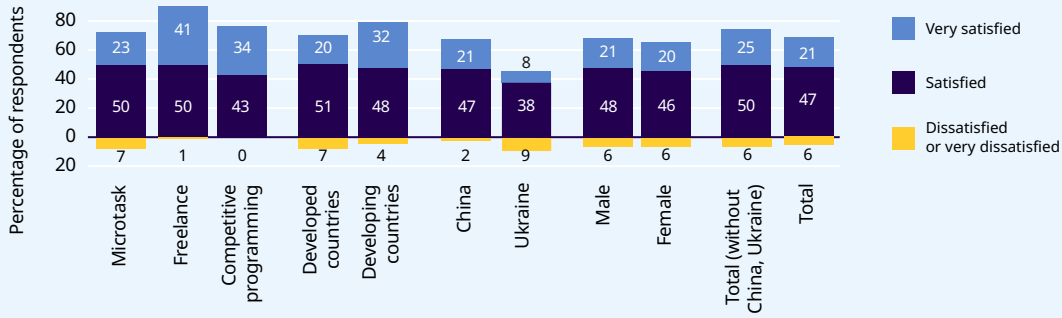
In the **app-based taxi and delivery sectors**, the majority of workers surveyed are satisfied with their work. A higher proportion of app-based taxi drivers are satisfied or very satisfied compared to traditional taxi drivers, while the opposite is the case in the delivery sector (see figure 4.7). In the absence of traditional work opportunities in the local labour market, app-based work provides workers with an income. This context might influence their satisfaction levels despite negative aspects of the work, such as long working hours and high work intensity (see section 4.2.3; Prabhat, Nanavati and Rangaswamy 2019; Griesbach et al. 2019).

**When there is no other source of earning and all the daily expenses are paid for through this income only, then I have to be satisfied with it – Male respondent on app-based taxi platform Uber (India)**

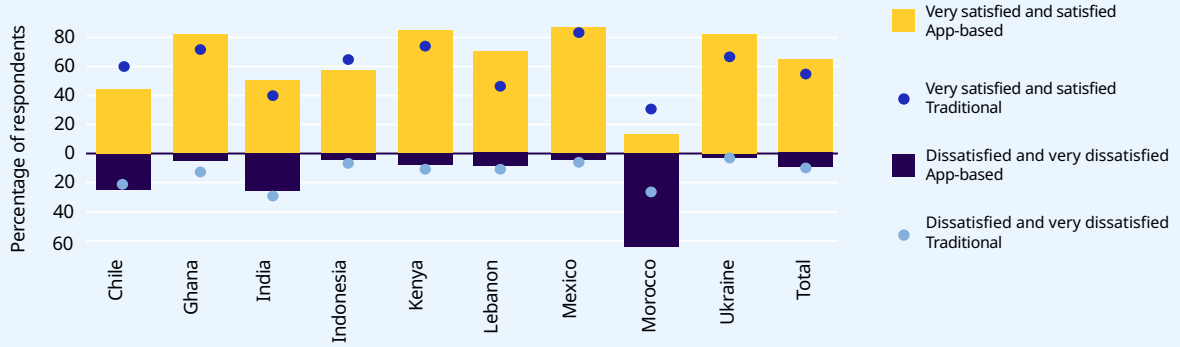
App-based taxi drivers in Morocco stand out as an outlier with high dissatisfaction levels (68 per cent), which could be associated with a strike during the period of data collection that is likely to have created higher awareness levels among the drivers about working conditions and pay. At the same time, while a single-measure job satisfaction indicator may provide some insights, concerns have been raised regarding its reliability and prevalent anomalies (Brown, Charlwood and Spencer 2012; Rose 2003; Oshagbemi 1999). Responses to single-measure job satisfaction questions have been observed to overestimate satisfaction levels in comparison with multiple-item measures

► **Figure 4.7 Worker satisfaction levels, by occupation and country**

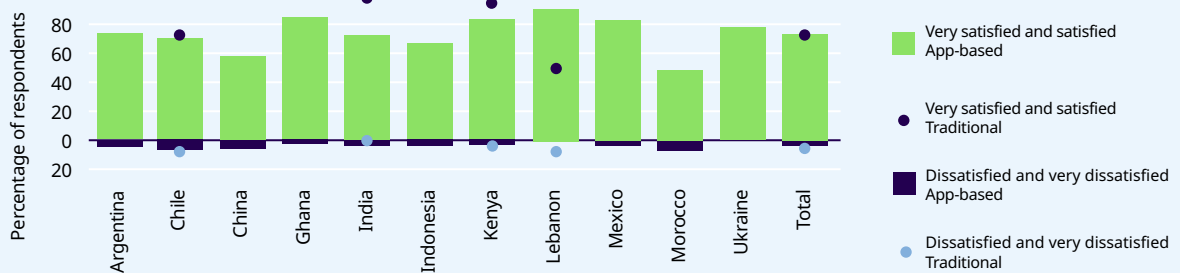
Online work



Taxi sector



Delivery sector



Sources: As for table 4.1.

(Oshagbemi 1999). These responses are determined more by “intrinsic” characteristics (such as flexibility, among others), rather than “extrinsic” characteristics (such as pay, contractual status or prospects for promotion, among others) (Rose 2003, 526–527). In Kenya, app-based taxi drivers have reported high levels of satisfaction (see figure 4.7) yet have undertaken strikes regarding pay and lack of consultation (Ochieng 2019; Nyawira 2019). Moreover, when asked about pay or regularity of work, respondent dissatisfaction was evident across both location-based and online web-based platforms. Notably, 44 per cent of app-based taxi drivers and 38 per cent of app-based delivery workers felt that they were paid unfairly.

**The work is very stressful and I think we deserve better pay – Male respondent on app-based taxi platform Yango (Ghana)**

Given such challenges with the single-measure indicator, research has emphasized the importance of complementing it with other dimensions or multiple-item measures (Brown, Charlwood and Spencer 2012; Oshagbemi 1999). In this regard, understanding the granularity of the working conditions and how work is being organized on platforms is fundamental to a better appreciation of both the worker experience and the opportunities and challenges that are emerging.



## 4.2 Worker experience and the quality of work on digital labour platforms

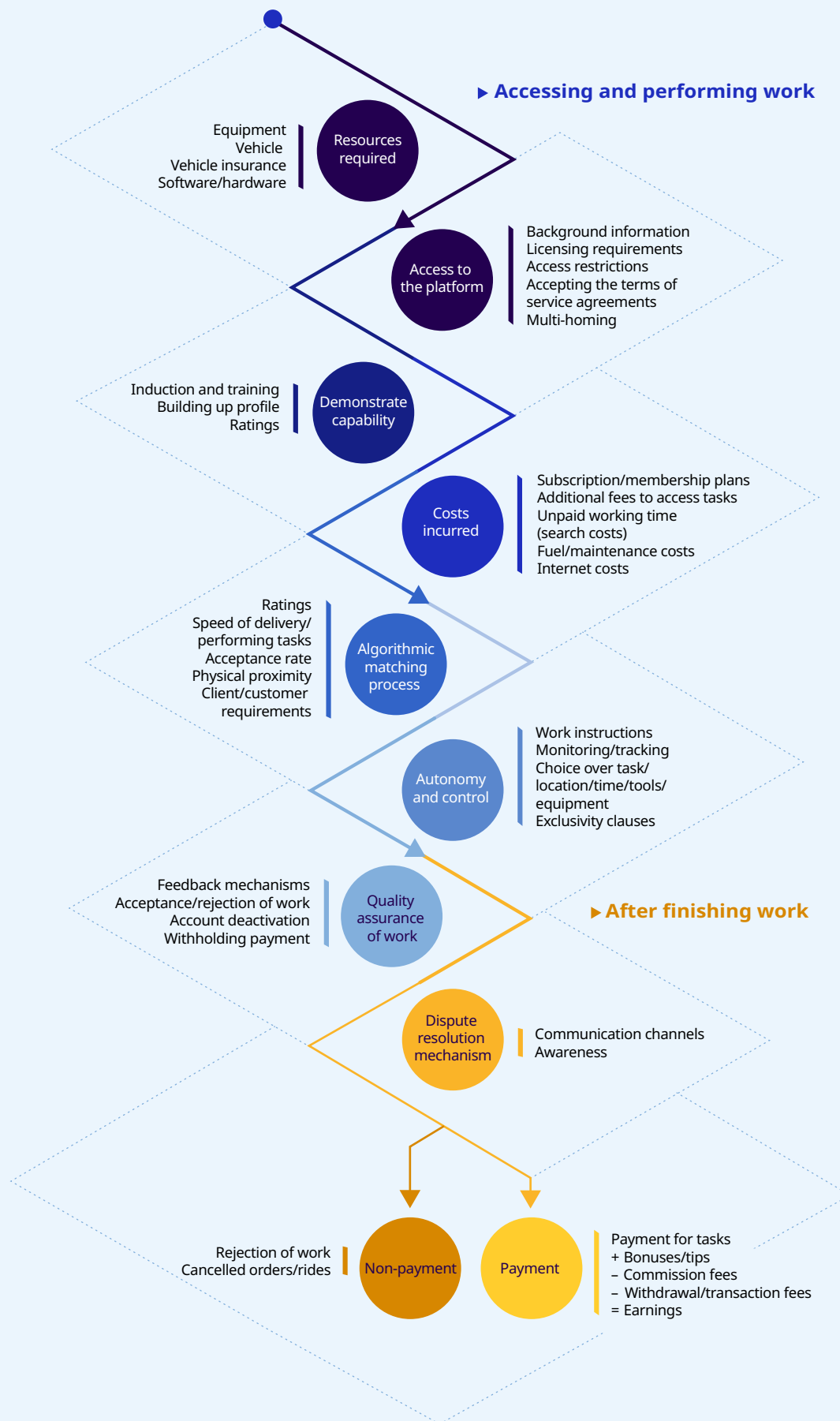
The working conditions and worker experience on digital labour platforms can vary considerably. They are linked to and shaped by the relationship of the worker with the platform, and the way in which work is organized and managed by the platform. Initially, the experience may appear seamless, where tasks or clients are connected to workers via the platform for pay. Navigating through a digital labour platform and ultimately receiving payment for work done can, however, be fraught with barriers and challenges. Figure 4.8 captures the worker experience on digital labour platforms, both online web-based and location-based, from obtaining access to and performing work, to receiving feedback and payment. It also demonstrates the degree to which a worker is responsible for both the resources required (equipment, vehicle, vehicle insurance, software and hardware), and the costs incurred (subscription and membership plans, additional fees to access tasks, working time, fuel and maintenance costs and internet costs). The rest of the chapter relates the experience of workers and describes their working conditions, based on the new data collected for selected sectors.

### 4.2.1 Access to a sufficient amount of work

A major challenge in the labour market is matching jobs and workers with corresponding skills. The rise of digital labour platforms has been seen as a way to connect workers directly to work opportunities. However, the experience of many workers on digital labour platforms is nevertheless marred by several challenges to accessing a sufficient amount of work.

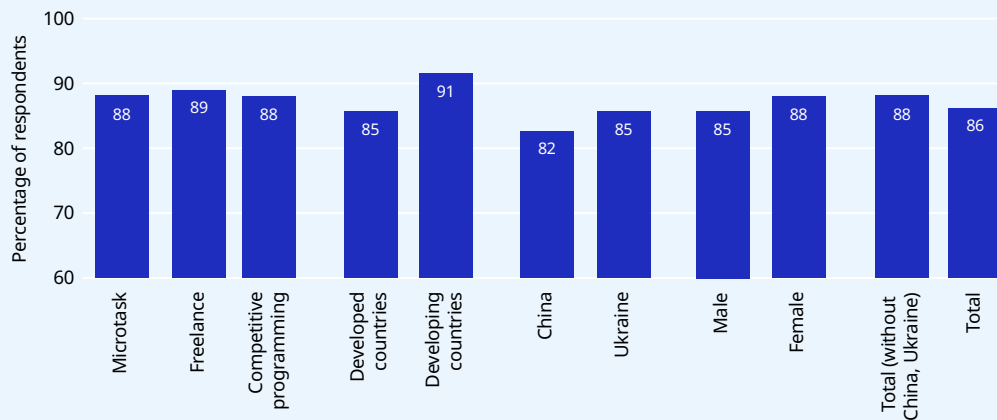
The majority of workers on **online web-based platforms**, particularly in developing countries, would like to undertake more online work. Of the respondents engaged in online work, 86 per cent expressed this desire (see figure 4.9), with very small differences between male and female respondents. A higher proportion of respondents from developing countries (92 per cent) reported the desire to do more online work compared to those in developed countries (85 per cent). This is the case despite the fact that many respondents have another paid job, in developed (56 per cent) and developing countries (41 per cent), and the country-level surveys show these proportions to be quite high in Ukraine (68 per cent).

► Figure 4.8 Design of a platform: The worker experience



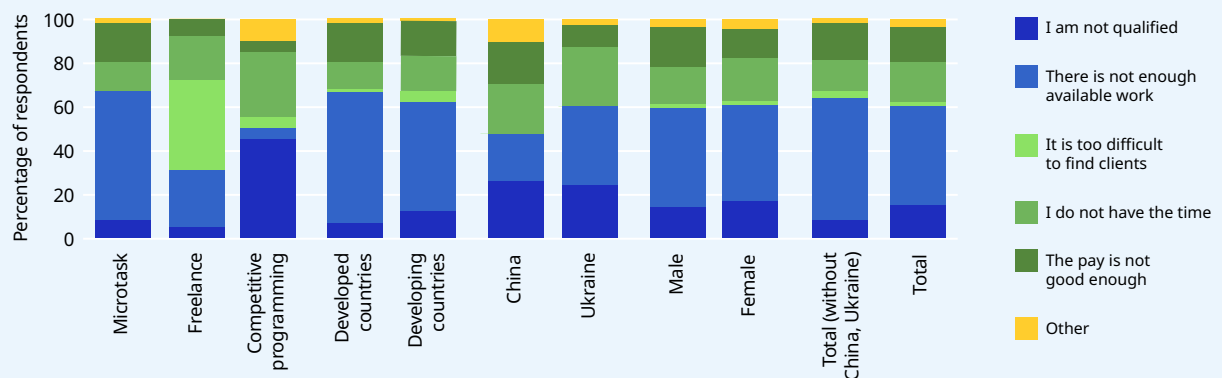
Source: ILO elaboration based on United Kingdom, Department for Business, Energy and Industrial Strategy (2018a).

► **Figure 4.9 Proportion of workers who would like to do more online work, by type of platform, development status and sex**



**Sources:** ILO global surveys of crowdworkers (2017) and workers on freelance and competitive programming platforms (2019–20); ILO surveys of platform workers in China (2019) and Ukraine (2019).

► **Figure 4.10 Most important reasons for not being able to undertake more online work, by type of platform, development status and sex**



**Note:** Figures presented refer to workers who reported that they would like to undertake more online work.

**Sources:** As for figure 4.9.

One key factor preventing people from doing more work on online web-based platforms is lack of availability of sufficient work. About 45 per cent of respondents reported this to be the case (see figure 4.10). A similar trend was visible across developed and developing countries, and in both sexes. Other reasons for not doing more work include not finding well-paid tasks (18 per cent) on microtask platforms and difficulty in finding clients (41 per cent) on freelance platforms. Furthermore, the amount of experience a worker has on platforms often does not necessarily

translate into having a greater amount of online work. Irrespective of experience (less than one year to more than three years), over 40 per cent of the workers on online web-based platforms who would like to undertake more work find it difficult to access a sufficient amount.

**Experience does not matter, but if you have fulfilled orders, this is the only way to get a client – Female respondent on freelance platform Freelancehunt (Ukraine)**

Competition on platforms can be strong, and one task or project can attract 100 to 200 or even more workers, as observed in China (Chen, forthcoming). This is also rooted in increasing labour supply (see section 1.3), partly due to initiatives undertaken by governments to train people and promote digital labour platforms as a source of income generation (Galpaya and Senanayake 2018; Graham, Hjorth and Lehdonvirta 2017; Graham et al. 2017).

**More and more people are working on the platform, in all industries, and the competition is fierce – Male respondent on freelance platform ZBJ (China)**

Workers on online web-based platforms may use multiple platforms in an attempt to find a sufficient amount of work. Workers in developed countries are more likely to use multiple platforms (52 per cent) compared to those in developing countries (44 per cent). This may be due to limited financial means among workers in developing countries to pay platform fees or subscriptions. In the case of freelance platforms, the majority of respondents use only one platform (59 per cent), which may be due to the cost of building their profile, reputation or qualifications and establishing a client base across multiple platforms.

**Working on different sites has made it possible to earn an income that is greater than what traditional companies offer – Female respondent on freelance platform Text (Ukraine)**

Freelance platforms often do not allow workers to accept work off-platform from clients they meet on platforms, thus limiting their ability to create a client base (Green et al. 2018). For instance, a majority of respondents reported that platforms attempted to restrict them from working with clients off-platform (69 per cent), or that they had never worked off-platform with the clients met on the platform (74 per cent). While some platforms offer the option of paying an additional fee to work with clients off-platform (see section 2.5), workers may face repercussions (for example being blocked from the platform) for undertaking off-platform work without informing the platform and paying the corresponding fees.

**I have never paid the fee to move away from the platform. I generally don't move off the platform unless the client requests it, as Upwork are very strict about it – Male respondent on freelance platform Upwork (Malaysia)**

The ability of workers on online web-based platforms to access a sufficient amount of work is also shaped by the platform design. Platforms often provide subscription plans or charge an additional fee to enable workers to have enhanced access to work. This can allow workers to apply for tasks faster than non-paying members, to have their proposals reviewed quickly and to ensure that their profiles appear at the top of the list when potential clients search for workers (United Kingdom, Department for Business, Energy and Industrial Strategy 2018a; see section 2.3). However, these practices can also prove to be a serious entry barrier, particularly for workers from developing countries who have limited financial capacity for such investments, and illustrate a context wherein skills do not necessarily define access to work.

**There is the option to upgrade and become a premium member, which provides more benefits to freelancers – Female respondent on freelance platform Upwork (Albania)**

Workers from certain developing countries in particular face barriers to accessing tasks due to exclusion by the platform or by the clients based on nationality or language spoken (Rani and Furrer, forthcoming; Graham, Hjorth and Lehdonvirta 2017; Beerepoot and Lambregts 2015; see section 4.5). There is also a perception that associates low quality of work with workers from developing countries, which leads to them being less likely to receive well-paid tasks (Galperin and Greppi 2017; Lehdonvirta et al. 2014). To circumvent these barriers, workers have adopted mechanisms such as using virtual private networks (VPNs) or remote desktop computers (RDCs) to mask their location (see box 4.1). “Glitches” or inefficiencies on platforms, low or inconsistent internet speeds and high costs of internet access in some countries are other barriers for workers, especially when clients request large files (such as videos) or when tasks have to be performed in a short time (Galpaya and Senanayake 2018; Berg et al. 2018).



#### ► Box 4.1 Circumventing geographical barriers to accessing work

There is a widely held belief that a worker with the requisite skills can perform tasks from any place and at any time around the world on online web-based platforms. However, several platforms do not allow workers to open an account if they reside in certain developing countries. Even when accounts are created, challenges persist in accessing work, as these workers are not able to perform the better-paid assignments that are often reserved for workers in developed countries.

To circumvent the geographical barriers introduced by the platforms, some workers stated that they resorted to “innovative” means, such as using VPNs and RDCs to mask their real location and instead provide the most favourable one. Respondents reported that by using a VPN they could open accounts on the platforms, clear the qualification tests, which they would otherwise fail, and also access better-quality and higher-paying assignments. For example, one respondent who had an undergraduate degree in economics and statistics noted that using Connecticut, United States, as a location instead of her own country allowed her access to academic writing assignments, and to an average income of about US\$490 per month. The respondent said, “I think they [clients] believe that I am in the United States because otherwise I don’t think they would give me work.”

Some workers also used VPNs to create or open accounts to sell to other workers through informal online groups such as Facebook or WhatsApp. The price of such accounts was determined by their quality, which included ratings, client reviews and so on. Faced with exclusion in accessing work due to platform design, many workers in developing countries have no option but to purchase accounts through such informal groups. Several such accounts were created using false documentation and information, raising legal and ethical concerns. They could sometimes be deactivated by the platform without notice. In this situation, the workers who bought those accounts had to bear the entire loss and also forgo their access to work.

**Source:** ILO interviews with workers in developing countries.

**Sometimes I may not be able to complete work because of a power blackout. So nowadays some clients prefer to hire people from places that don’t experience blackouts – Female respondent on freelance platform Upwork (Kenya)**

Accessing a task often requires demonstrating skills, particularly through ratings from previous customers, test scores and work history, and algorithmic matching can play a crucial role here. About 79 per cent of respondents on freelance platforms reported that reviews and feedback from previous clients were key factors in obtaining new work; other factors included previous work portfolios (54 per cent), and the number of completed jobs (53 per cent). This can create challenges, particularly for new entrants, as was observed on freelance platforms in several

developing countries, where the platform algorithms did not prioritize them owing to their low ratings (Galpaya and Senanayake 2018). On microtask platforms, new entrants may have to complete unpaid tasks to demonstrate skills or earn qualification and face competition from experienced workers who may use tools and scripts on some platforms that notify them about the availability of tasks so that they can take them rapidly (Hanrahan et al. 2019).

On freelance platforms, experienced workers or those with higher spending capacities may have an advantage in accessing work. On Upwork, for example, some experienced workers or those with high ratings can remove or hide a certain number of low ratings, while others, including new entrants, may have to pay for arbitration if they do not agree with their ratings.

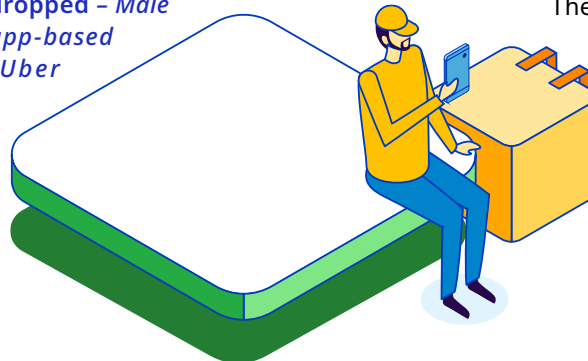
**Upwork allows “Top Rated” freelancers to remove/hide one review/rating from their profile. I simply requested to remove a particular low rating – Male respondent on freelance platform Upwork (Pakistan)**

Lack of sufficient work was already a concern in 2019 for many workers on **location-based platforms**, a situation which has been exacerbated for many during the COVID-19 pandemic (see box 4.2). In 2019, about 69 per cent of respondents in the app-based delivery sector reported that they would like to complete a greater number of deliveries; these workers indicated that the key reason for not being able to do so was the lack of availability of work (83 per cent). This could be due to increased competition and enhanced labour supply; a majority of respondents reported an increase in the number of platform companies (56 per cent) and delivery workers in the area (62 per cent).

**There are many couriers and therefore I don’t receive many orders – Male respondent on app-based delivery platform Rappi (Mexico)**

In the traditional delivery sector, workers who wanted to increase the number of deliveries (58 per cent) similarly indicated that not enough work was available (90 per cent), partly due to the competition from app-based delivery workers. Many app-based and traditional taxi drivers also reported an increase in the number of platform companies in this sector (about 72 per cent), resulting in greater competition for the work available, and some drivers were therefore also engaging in both app-based and traditional work from time to time.

**I used to work for a traditional taxi company but stopped because demand for traditional companies has dropped – Male respondent on app-based taxi platform Uber (Lebanon)**



Platform design features affect location-based workers’ ability to access a sufficient amount of work through ratings and acceptance rates. Most app-based workers engaged in the taxi and delivery sectors use only one platform to access work (about 85 per cent each), and the rate is almost 100 per cent in Indonesia and Morocco. A significant reason for this could be the need to maintain their ratings, which allow them to access work and obtain bonuses (see sections 4.2.2 and 4.3.2). A high proportion of respondents in the app-based taxi and delivery sectors (over 70 and 60 per cent respectively) in most countries reported that both their ratings and acceptance rates had an impact on the amount of work they received. Similar proportions reported that their acceptance rate had an impact on the amount of work they received. Maintaining ratings and a high acceptance rate limits the capacity of workers on location-based platforms to use multiple platforms (“multi-homing”), as they can only fulfil one order at a time.

**When I decline a request for a ride, my acceptance rate decreases and the app sends fewer trips in the future – Male respondent on app-based taxi platform DiDi (Mexico)**

Platforms can also have strict rules regarding multi-homing. For instance, in China some delivery platforms make it mandatory for workers to share their location, take a selfie in their work clothes, and upload the picture on social media groups to demonstrate they are on duty, and workers can be fined one day’s earnings if they do not respond within 15 minutes. Similarly, in India and Lebanon for example, more than 90 per cent of app-based delivery workers noted that they were either given or expected to buy the uniforms and bags necessary for working with the platforms.

These tend to have insignias or logos that indicate to customers the association of the worker with a specific

► **Box 4.2 COVID-19 impact on availability of and access to work**

To assess the impact of the COVID-19 pandemic on workers in the taxi and delivery sectors (both app-based and traditional), rapid-assessment surveys were conducted by the ILO in Chile, India, Kenya and Mexico. The interviews were conducted by telephone in August 2020 with 182 delivery workers and 222 taxi drivers who had participated in the 2019 survey (see [Appendix 4A](#)). Of these workers, 14 per cent (56 respondents) had permanently stopped working in their respective sector. Among these, 32 per cent (18 respondents) had left the sector for reasons related to COVID-19 (such as work restrictions during lockdown, or fear of the virus), and the remainder had left for reasons not related to COVID-19 (found another job; dissatisfaction with pay or working conditions; or, in the case of Chile, low demand and heightened risk related to the social unrest that started in October 2019).

**I stopped working for Ola because the income was very low and they charged a very high commission and taxes. I was working for 12 hours and still wasn't able to make my monthly loan payments – Male respondent previously working on app-based taxi platform Ola (India)**

Boxes 4.4, 4.5 and 4.6 on the impact of COVID-19 on income, social protection and occupational safety and health draw on findings from the surveys conducted with the remaining 348 respondents who were still working, or planned to return to work, in the taxi (197 respondents) and delivery (151 respondents) sectors in August 2020. Of these, 68 per cent of respondents had to take a break from working, while 32 per cent worked throughout the pandemic because of economic necessity, and often despite feeling very concerned that they were at risk of contracting COVID-19 while at work. For some, the break lasted less than one month (24 per cent), while for the majority it lasted two or more months (59 per cent). The reasons that led to work interruption in the taxi and delivery sectors (both app-based and traditional) included lack of demand, restrictions on movement and fear of contracting the virus, or, in a few cases, the fact that respondents or their family members had contracted it. At the time of the interviews, 26 per cent (89 respondents) had not yet returned to work but were planning to do so once the situation would allow it.

**Because I'm a foreigner, if I don't work, I don't eat, and my family needs me – Male respondent on app-based delivery platform PedidosYa (Chile)**

**It is my main source of income and I support my family – Male respondent on app-based taxi platform Uber (Kenya)**

The majority of workers who continued working throughout the pandemic were in the app-based delivery sector where demand levels were mixed: a few of them reported an increase (13 per cent) or no change in demand (15 per cent), while many reported a decrease (72 per cent). Some app-based delivery workers were transporting parcels and purchases from supermarkets or pharmacies, whereas before the pandemic it was mainly food from restaurants.

Several app-based taxi companies, such as DiDi, Beat and Uber (in Chile and Mexico), have added delivery of parcels or goods to their services, in addition to passengers, since the pandemic started. However, both app-based and traditional taxi drivers (76 and 83 per cent respectively) were still more likely than delivery workers (52 and 65 per cent respectively) to have stopped working (or to have been forced to stop) at some point. Among the app-based taxi drivers, a vast majority (89 per cent) reported a decline in demand, which may have been due to restrictions on movement, limitations on providing their services during the lockdown and the shock to the tourism industry.

**Source:** ILO rapid-assessment surveys (2020).

platform, and can also have relevance for accessing insurance benefits, making it more difficult for the worker to multi-home. This often leads to a situation where the worker is accessing the market solely through one platform or is directly tied to a platform, thereby raising concerns with regard to employment relationships (see section 5.3.10).

*Sometimes, the team leader makes visits in the field to check delivery bags and uniform – Male respondent on app-based delivery platform Zomato (India)*

*Someone hit me with a motorcycle and I got injured. Toters company did nothing to help me only because I wasn't wearing their uniform – Male respondent on app-based delivery platform Toters (Lebanon)*

### 4.2.2 Worker earnings on digital labour platforms

The heterogeneity of work undertaken through digital labour platforms – from software development to delivery services – is also reflected in worker earnings, which vary considerably from high- to low-skilled work.<sup>2</sup> Work on **online web-based platforms** is the primary source of income for many, particularly in developing countries, and especially for many women. About one third of respondents reported that online work was their main source of income (see figure 4.11), and this proportion was particularly high among those

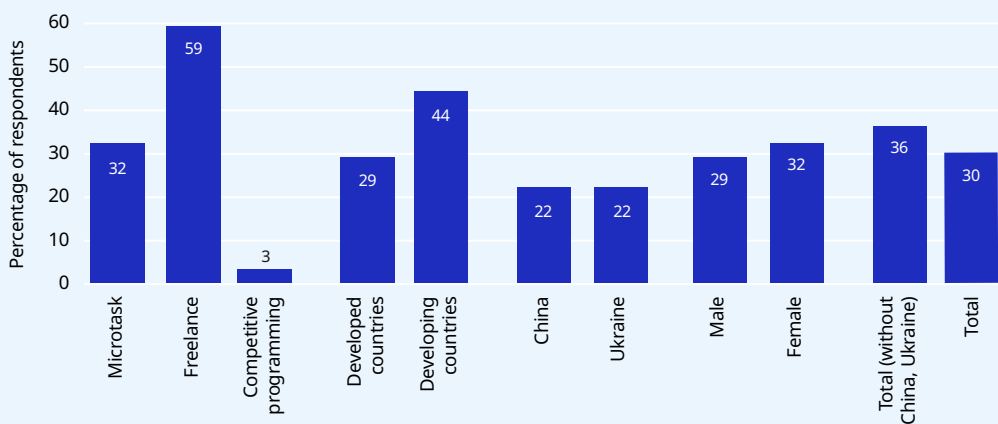
engaged on freelance platforms (59 per cent). It is also the primary source of income for many workers in developing countries (44 per cent), and especially among women in these countries (52 per cent). However, low and unstable incomes are a concern for some of these workers.

*I think it's a great thing that people can make an income in this way, I just wish I had a bit more financial stability – Female respondent on freelance platform Upwork (Greece)*

The vast majority of respondents on competitive programming platforms (97 per cent) do not rely on competitive programming as a source of income. Only 12 per cent of the respondents reported having won any financial prize from competitions in the past year, and of these, it was mostly a case of one or two competitions. The prize amount varies depending on the competition, and respondents reported participating in competitions where they were offered anything between a few US dollars and US\$10,000.

Earnings on online web-based platforms are impacted by time spent doing unpaid tasks, and vary across different types of platforms. Average hourly earnings (paid) in a typical week for those engaged in online work is US\$4.9 (see table 4.2), with the majority of workers (66 per cent) earning less than the average. This does not take into account the fact that workers spend a lot of time accessing online work, especially given the over-supply of workers on some platforms (Graham et

► **Figure 4.11 Share of respondents who identify online work as their primary source of income, by type of platform, development status and sex**



Sources: As for figure 4.9.

2 The earnings analysis in this section excludes competitive programmers who earn prizes.

► **Table 4.2** Hourly earnings on online web-based platforms, by type of platform, development status and sex (in US\$)

	Paid hourly earnings			Total hourly earnings (paid and unpaid)		
	Mean	Median	Number of observations	Mean	Median	Number of observations
Freelance	11.2	7.2	296	7.6	5.3	297
Microtask	4.4	3.0	2026	3.3	2.2	2021
Developed countries	6.1	4.5	1413	4.5	3.3	1405
Developing countries	4.1	2.0	908	2.8	1.4	913
China	4.2	2.9	1036	2.7	1.8	1039
Ukraine	4.7	2.3	651	3.2	1.4	652
Male	5.0	3.0	2451	3.5	2.2	2452
Female	4.8	2.9	1557	3.4	1.9	1556
<b>Total (without China and Ukraine)</b>	<b>5.3</b>	<b>3.3</b>	<b>2322</b>	<b>3.9</b>	<b>2.5</b>	<b>2318</b>
<b>Total</b>	<b>4.9</b>	<b>3.0</b>	<b>4009</b>	<b>3.4</b>	<b>2.1</b>	<b>4009</b>

**Note:** Data is trimmed at 1 and 99 per cent by sector.

**Sources:** ILO global surveys of crowdworkers (2017) and workers on freelance platforms (2019–20); ILO surveys of platform workers in China (2019) and Ukraine (2019).

al. 2017). If the unpaid time (see section 4.2.3) is factored in, total average hourly earnings (paid and unpaid) decline to US\$3.4, with the majority of workers (66 per cent) earning less than the average (see figure 4.12).

The average hourly earnings (paid) in a typical week are higher for workers on freelance platforms (US\$11.2) than those on microtask platforms (US\$4.4). On freelance platforms, when unpaid time is accounted for, the total average hourly earnings (paid and unpaid) drop to US\$7.6, with 64 per cent earning below the average. On microtask platforms, when unpaid time is accounted for, the total average hourly earnings (paid and unpaid) decline to US\$3.3, with 63 per cent earning below the average.

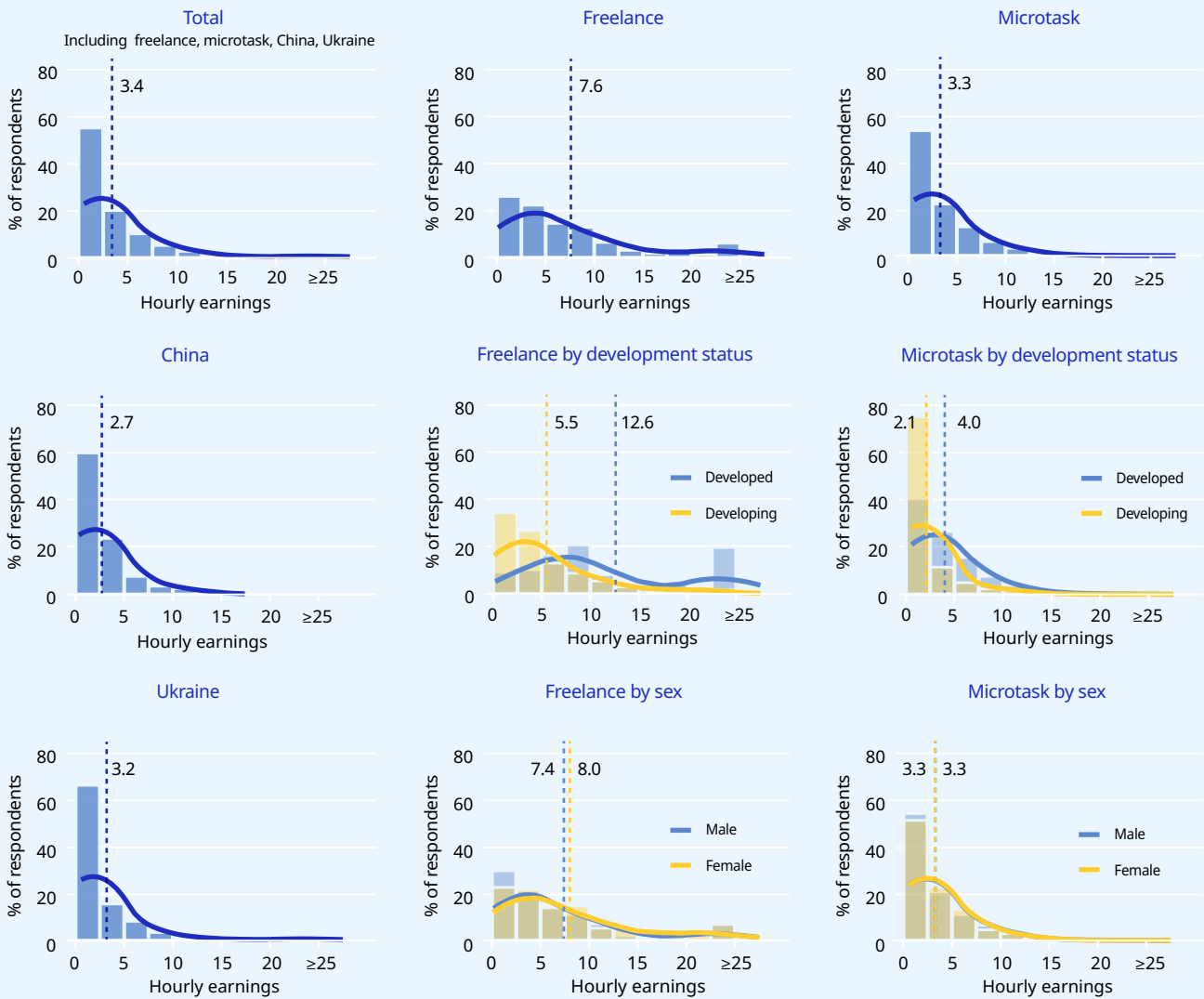
Furthermore, a statistical analysis shows that workers on microtask platforms earn significantly less than their counterparts who undertake

similar activities in the traditional labour market, after controlling for basic characteristics (see [Appendix 4B](#)). Microtask workers earn 64 per cent less in India, and 81 per cent less in the United States than in the traditional labour market. In both countries, this gap is wider for female workers than for male workers (see figure 4.13).

Major differences exist between the earnings of workers on online web-based platforms in developed and developing countries. For workers in developing countries, as well as those in the country-level surveys in China and Ukraine, average hourly earnings (both paid, as well as paid and unpaid) are lower than for those in developed countries (see table 4.2).

**It has been very great so far but it's sad Nigerians don't get high paying jobs – Male respondent on microtask platform Microworkers (Nigeria)**

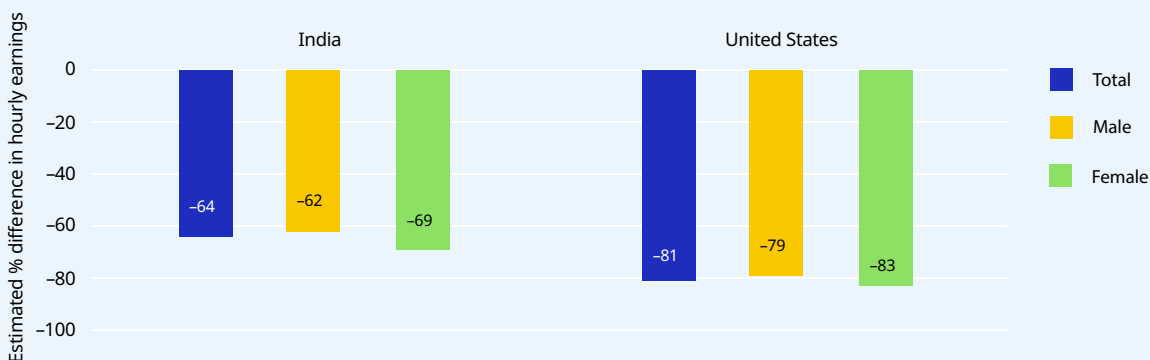
► **Figure 4.12 Hourly earnings (paid and unpaid) on online web-based platforms, by type of platform, development status and sex (in US\$)**



**Note:** Data is trimmed at 1 and 99 per cent by sector. Vertical dashed lines indicate mean values.

**Sources:** As for table 4.2.

► **Figure 4.13 Hourly earnings of survey respondents on microtask platforms compared to their counterparts in the traditional labour market, India and the United States, by sex (estimated percentage difference)**



**Sources:** ILO global survey of crowdworkers (2017); India, NSSO Periodic Labor Force Survey, 2017–18; United States, Census Bureau, Current Population Survey, 2017.

On microtask and freelance platforms the average hourly earnings (paid and unpaid) for those in developed countries are also much higher (US\$4 and US\$12.6 respectively) than for those in developing countries (US\$2.1 and US\$5.5 respectively). This disparity is quite high on freelance platforms even after controlling for basic characteristics and type of task performed; workers in developing countries tend to earn 60 per cent less than their counterparts in developed countries (see [Appendix 4B](#)). The analysis also shows that workers in developed countries tend to earn more when they have a regular client than those with no regular clients. This could indicate that the higher-paying tasks are being performed by those in developed countries. The lower pay associated with workers from developing countries may be due to the perceptions of clients and platform design, which prevents these workers from accessing higher-paying tasks (see section 4.5).

Findings on the gender pay gap on online web-based platforms are mixed. Previous studies have shown that women continue to earn less than men even in the virtual world (Aleksynska, Shevchuk and Strebkov 2021; Liang et al. 2018; Foong et al. 2018; United Kingdom, Department for Business, Energy and Industrial Strategy 2018b; Adams-Prassl and Berg 2017). The ILO surveys reveal that when looking at averages, a gender pay gap can often be observed, but this may not always be significant when a statistical analysis is undertaken. The average hourly earnings (paid and unpaid) for female online workers (US\$3.4) are slightly lower than for male (US\$3.5), and they are also lower for women in developed countries (US\$4.2) than for men (US\$4.8). In developing countries, however, the average hourly earnings (paid and unpaid) for women are higher (US\$3.4) than for men (US\$2.6). These higher earnings among women in developing countries could be due to their higher education levels compared to those of men (see section 4.1.6), allowing them to perform better-paid tasks.

However, controlling for all basic characteristics, the statistical analysis shows that there is no significant difference between the hourly earnings (paid and unpaid) on freelance platforms for male and female respondents, and this holds true in both developed and developing countries. The analysis of the country-level surveys on freelance

platforms shows a significant gender pay gap, with women earning 26 per cent less in Ukraine, while in China they earn 32 per cent less on platform 680 (it is not significant on other platforms in China) (see [Appendix 4B](#)).

Competition among workers on online web-based platforms, high commission fees and non-payment for tasks have implications for earnings. On freelance platforms there is intense competition between workers. To increase their exposure and build their profiles many respondents reported accepting low-paying work (62 per cent); lowering their bids to get work (60 per cent); or performing tasks for free (13 per cent). Instances of underbidding were also reported in China and Ukraine (44 and 20 per cent respectively). Moreover, during the COVID-19 pandemic, there has been an increase in the number of workers registered on online web-based platforms (see section 1.3), and many have had to bid below their target rates so as to secure work (Stephany et al. 2020).

**The problem is competition through underbidding, which generates a price war culture – Female respondent on freelance platform Upwork (France)**

Earnings are also affected by the different types of fees (commission or service fees, subscription fees, bidding charges and so on) charged by platforms (see table 4.3). A considerable proportion of respondents on freelance platforms reported paying a per-task service fee, varying between 36 per cent (Russian and Ukrainian platforms other than Kabanchik) and 65 per cent (Upwork) of respondents. The amount of commission or service fees charged differs across platforms. For instance on Upwork, Freelancer and PeoplePerHour commission fees vary between 3.5 and 20 per cent (see also section 2.2.1). Furthermore, a substantial proportion of respondents (69 per cent) also reported paying a fee to submit and receive proposals on Upwork, where some are required to buy “connects” to bid for projects.

**I tried paying monthly to get more bids and now pay to buy connects to place bids. Ten connects cost US\$1.50 but some bids need you to pay six connects, so those don't last long. Sometimes I've paid US\$20 within a week or two and not gotten jobs – Female respondent on freelance platform Upwork (United States)**

► **Table 4.3 Fees paid by respondents on freelance platforms, by platform (percentage of respondents)**

Fees paid	Freelancer	Upwork	Kabanchik	Other Russian/ Ukrainian platforms
One-time registration	22	4	16	15
Annual registration	24	5	2	8
Premium membership	0	5	–	–
Fees to submit/receive proposals	22	69	29	27
Fees to appear first in search	7	10	6	9
Per-task service fees	48	65	42	36
Transaction/payment fees	24	41	14	21
Withdrawal fees	24	61	21	29
Foreign currency exchange	15	24	4	8
Other	0	2	0	0
None	7	0	15	23

**Sources:** ILO global surveys of workers on freelance platforms (2019–20); and ILO survey of platform workers in Ukraine (2019).

**I am charged by Upwork when I apply for a job, when I get paid for a job, and when I withdraw my payments – Female respondent on freelance platform Upwork (Philippines)**

In addition, workers also pay fees for withdrawing money and for changing currency (see table 4.3), which also impacts earnings. The high transaction costs have led some workers from developing countries to circumvent the platform itself and instead use social media channels such as LinkedIn or Facebook to access work and improve their earnings (see box 4.3).

Non-payment for tasks undertaken, including unfair rejections, also has an impact on earnings. On microtask platforms for instance, where the entire process of allocating and evaluating work is done through algorithms, unfair rejections are common, often without any feedback (see section 4.3.2). This not only leads to lost earnings for completed work but also reduces workers' ratings,

thereby limiting their ability to access more work. Moreover, on freelance platforms where creative contests are common, competitions are designed to enable clients to select one of several designs developed by a number of professionals. As a result, the worker who submits the winning design is paid, while the work undertaken and submitted by the "losing" individuals is unpaid. A similar situation may also be the case for freelancers in the offline world, although in the case of an agency the risk would not fall on the worker.

**App-based taxi and delivery platforms** are the main source of income for 84 and 90 per cent of respondents respectively in these sectors. These proportions are slightly higher in the traditional sectors (around 92 per cent each). An overwhelming majority of women in the app-based taxi (76 per cent) and delivery sectors (86 per cent) are also dependent on this work as their main source of income.



### ► Box 4.3 Overcoming low pay and payment barriers

A number of workers from developing countries on online web-based platforms who were interviewed were concerned about low pay due to high commission fees, withdrawal charges and instances of non-payment for completed tasks. Workers also faced payment barriers on some platforms due to embargos on online payment gateways in some countries.

**I receive emails that there are opportunities for translation but I can't accept because there are no ways to receive payments – Female interviewee (Syrian Arab Republic)**

To overcome such situations, many respondents reported that they resort to finding clients directly through LinkedIn, Facebook and other social media platforms, as well as informal channels. Some were also using labour platforms that cater to their specific region and that are built in the regional language, thereby reducing competition from other regions of the world. Directly interacting with clients enabled some workers to negotiate better pay, use payment options that were not embargoed and develop trust with clients. Yet this also created challenges, as it can be time-consuming to build connections in order to find work on a regular basis.

**I thought of directly choosing clients. I started on LinkedIn and started by adding people. It takes more effort but it's convenient for the clients and we get to personally know each other – Female interviewee (Occupied Palestinian Territory)**

**Source:** ILO interviews.

Hourly earnings (including waiting times) for workers in these sectors vary across countries (see figure 4.14). They range between US\$1.1 (India) and US\$8.2 (Lebanon) for app-based taxi drivers, and between US\$0.9 (Ghana) and US\$3.5 (Ukraine) for app-based delivery workers. Furthermore, in all countries the majority of workers earn less than the average in these sectors. Moreover, incomes of workers on location-based platforms have been severely impacted by the COVID-19 pandemic (see box 4.4).

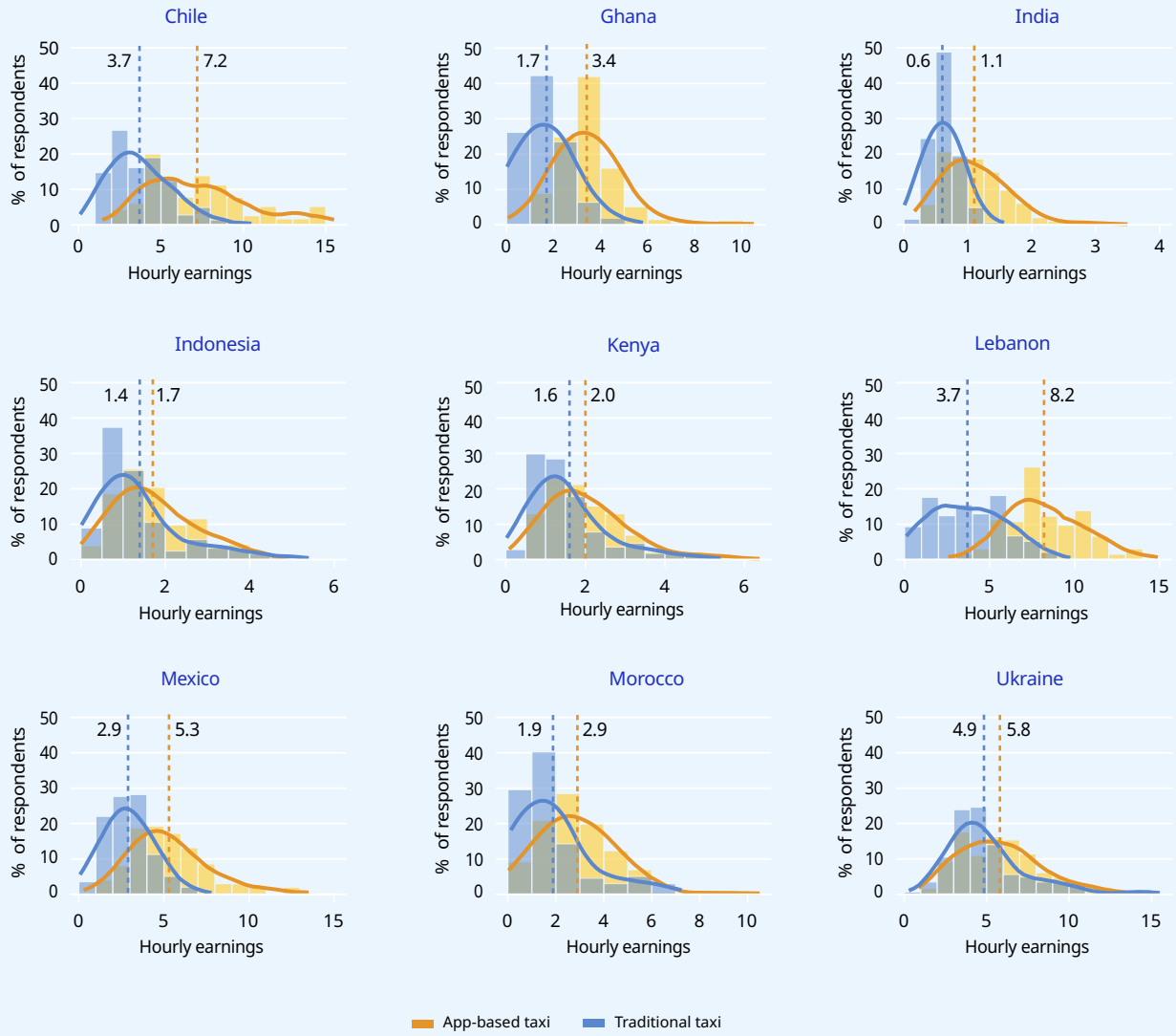
Earnings in the app-based sectors tend to be higher than in the traditional sectors, although the differences vary considerably across countries. A statistical analysis (see [Appendix 4B](#)) controlling for basic characteristics shows that app-based taxi drivers earn between 22 per cent (Ukraine) and 86 per cent (Ghana) more than their traditional counterparts (see figure 4.15). In the delivery sector however, whereas app-based workers earn more in Kenya (39 per cent more) and Lebanon (25 per cent more) than their traditional counterparts, they earn less in Chile (24 per cent less).<sup>3</sup>

Platform design and the business model have implications for earnings in both the app-based and traditional sectors. In the app-based sectors, the earnings include bonuses and incentives. The majority of respondents across app-based taxi and delivery sectors reported being offered bonuses (over 76 per cent), as well as receiving them (over 60 per cent). For over 85 per cent of respondents, these bonuses form an important part of their income. Therefore, higher earnings in the app-based sectors may be related to higher economic incentives or bonuses provided by platforms.

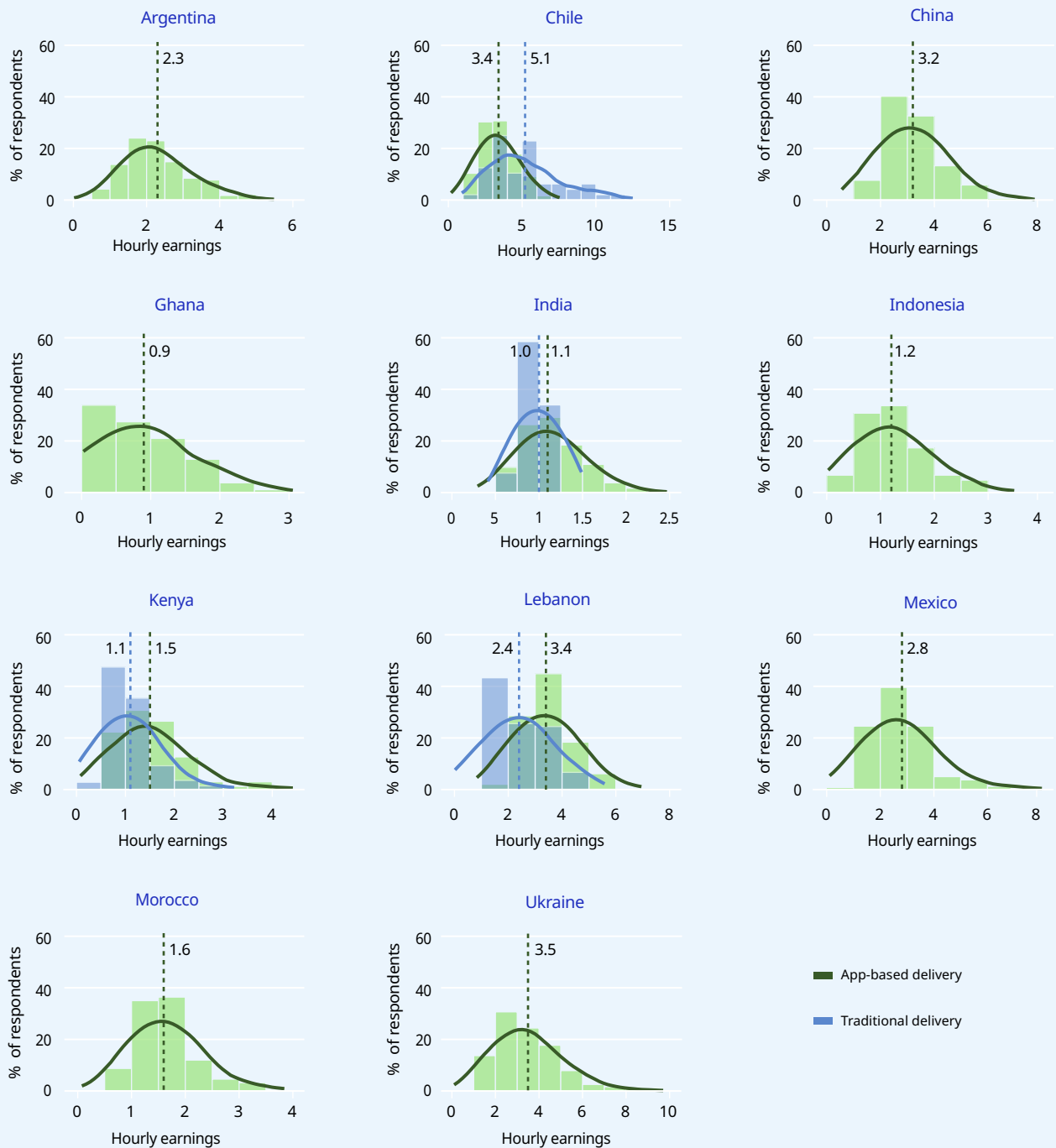
Offers of bonuses tend to depend on the platform companies and the countries where they operate. For instance, in Morocco only 15 per cent of app-based taxi drivers reported being offered bonuses, a majority of whom were engaged with the platform Careem; while in Indonesia nearly all the app-based taxi drivers (99 per cent) who were engaged with Gojek or Grab were offered bonuses. Where they are available, bonuses have created a strong incentive structure through gamification that encourages workers to work long hours and with high intensity.

<sup>3</sup> India was excluded from the regression analysis for delivery workers as the survey of traditional delivery workers was conducted among *dabbawalas* (those making traditional lunchbox deliveries) in Mumbai, while the app-based survey was conducted in Bengaluru and Delhi, which limits the comparability of income figures.

► Figure 4.14 Hourly earnings in the taxi and delivery sectors, by country (in US\$)

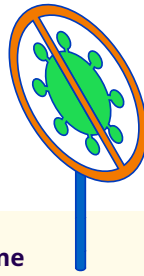


► Figure 4.14 (cont'd)



**Notes:** Data is trimmed at 1 and 99 per cent by sector and country. Vertical dashed lines indicate mean values.

**Sources:** As for table 4.3.



#### ► Box 4.4 COVID-19 impact on income

In the countries considered in the COVID-19 rapid-assessment survey, and among workers who were active at the time of the survey, nine out of ten app-based and traditional taxi drivers and a varying number of delivery workers (45 per cent in Chile and 85 per cent in Kenya) reported a decrease in income since the start of the pandemic. In most instances this was due to decelerating demand, although in the delivery sector some reported an increase in demand (see box 4.2).

**I work fewer hours than before the pandemic because there are no trips available. As I didn't work for two months I finished my savings – Male respondent on app-based taxi platform InDriver (Mexico)**

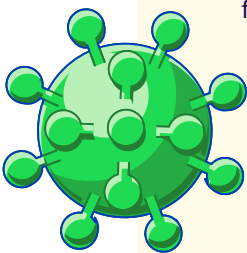
To compensate for the loss of income, some app-based respondents also reported providing additional taxi (31 per cent) or delivery (14 per cent) services through private contacts in addition to undertaking app-based work. For most, this was a small supplement to their income earned through app-based work, while in some instances it exceeded their usual earnings. For example, one app-based driver in India reported that while he was not driving for Uber during the lockdown, he was able to drive passengers from Delhi to their home villages, thereby earning more than five times the usual monthly amount via the app.

Some app-based workers also reported doing other jobs. Some had started a new job (7 per cent) or had carried out small tasks (4 per cent) since the beginning of the pandemic, while others had continued working in an existing job (8 per cent) or continued to carry out small tasks to earn extra money (3 per cent). In addition, 13 per cent of the workers reported that they used to have another job that they had lost since the start of the pandemic.

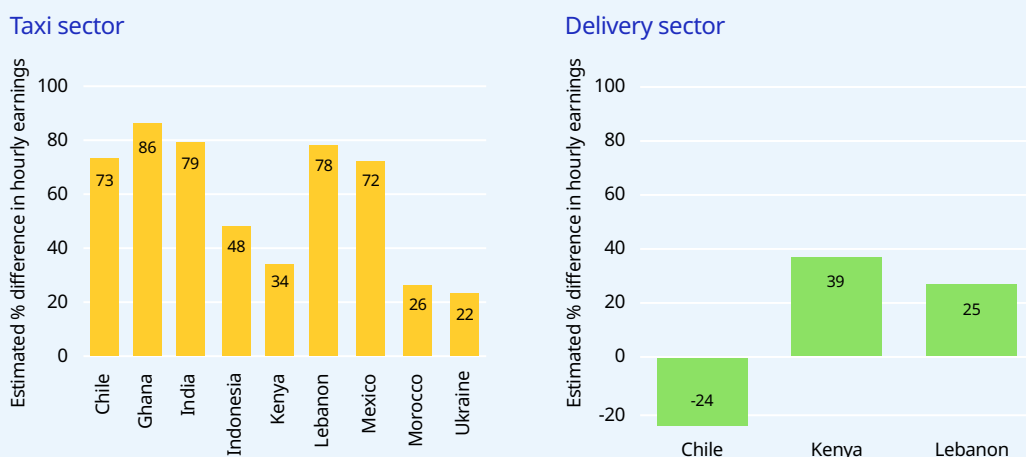
For over 90 per cent of respondents in the taxi sector and over 70 per cent of respondents in the delivery sector (both app-based and traditional), the pandemic has had consequences for the financial situation of their household. To manage their reduced financial capacity, 79 per cent of workers reported that they had reduced unnecessary expenditure; 65 per cent had used their savings; 48 per cent had deferred payment of bills; while 29 per cent had taken a loan from friends, family or neighbours, 13 per cent from a bank and 4 per cent from the app company. Some had also moved apartments or migrated back to their home village (11 per cent); sold possessions (10 per cent); started farming or keeping animals (7 per cent); or had taken other measures to reduce expenditures or earn extra income (7 per cent). In particular, for 43 per cent of app-based taxi drivers, loan repayments for their vehicles were also pending. While about half were able to reach an agreement to defer the payments in full or in part, the other half were still obliged to pay the same premiums as before the pandemic.

About one third of respondents across sectors received some form of aid from the government or their community. In Chile and India, a majority of respondents received in-kind support from the government and some also received financial support. Only a few respondents (9 per cent) received any financial or in-kind support from the app or company that they worked with, with some exceptions such as traditional delivery workers in Kenya (53 per cent) and app-based drivers in India (26 per cent).

**Source:** ILO rapid-assessment surveys (2020).



► **Figure 4.15 Hourly earnings of app-based workers compared to their traditional counterparts in the taxi and delivery sectors, by country (estimated percentage difference)**



Source: As for figure 4.3.

Location-based platforms, particularly in the taxi sector, are able to provide services to customers at low cost by providing bonuses and incentives to the workers (see section 2.3). This could potentially distort local labour markets and reduce income-generating opportunities for those in the traditional sectors. Across countries, about half the traditional taxi drivers reported that since they had started working the number of trips made in a typical day and their daily earnings had decreased, while about one third said that these had remained stable. In some countries (Chile, India and Mexico), as many as 70 per cent of the drivers reported a decrease in the number of trips and daily earnings.

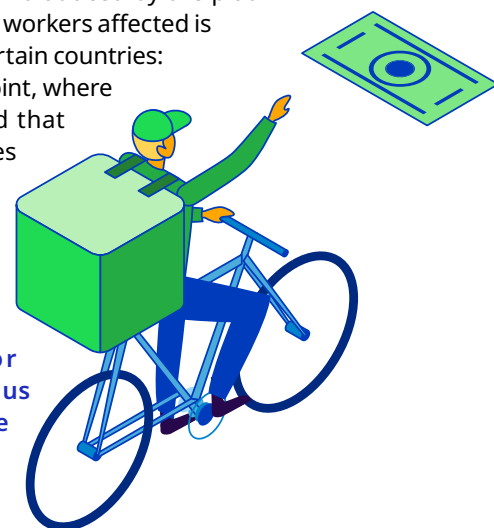
In addition, traditional taxi drivers often reported longer waiting periods between rides compared to app-based taxi drivers. For instance, in India traditional taxi drivers reported that they had to wait on average of 93 minutes between two rides, while for app-based taxi drivers the wait was only 16 minutes.

The bonuses offered by platform companies have attracted a large number of workers, thereby increasing labour supply, which can exceed the

expected demand and lead to intense competition. According to 43 per cent of app-based taxi drivers, it is becoming harder to qualify for bonuses over time due to changes introduced by the platforms. The number of workers affected is particularly high in certain countries: India is one case in point, where 84 per cent reported that qualifying for bonuses has become increasingly difficult.

**The changes to the bonus incentive scheme are burdensome for drivers and make us more tired if we work all day – Male respondent on app-based taxi platform Gojek (Indonesia)**

**Initially it was good to join Ola but now the bonuses are reduced, as are the earnings – Male respondent on app-based taxi platform Ola (India)**



Apart from bonuses, the incomes of app-based workers are also affected by commission fees charged by the platforms, especially for taxi drivers, or additional expenses for transferring money. The commission fees can vary within a platform and across countries (see table 4.4). For instance, Uber's commission fees vary between 5 per cent (Kenya) and 25 per cent in a number of countries. Even within a country, the commission fee can vary depending upon the vehicle and the distance, ranging between 5 and 40 per cent.

**Uber's commission is high so I don't get to earn much after deductions – Male respondent on app-based taxi platform Uber (Ghana)**

Other factors impacting worker earnings include payment for vehicle loans or rent. While many of the app-based taxi drivers own their vehicle

(69 per cent), a large majority of them (70 per cent) have taken out a loan for the purchase. In some instances, loans have been acquired from platform companies. This may lead to a lock-in of workers with the platform that sponsors the loan, and can cause financial problems as rates might be reduced over time.

**I took a loan for this car because at the start we used to earn a lot. But then Ola and Uber reduced their rates and now I can't make my monthly loan repayments – Male respondent on app-based taxi platform Uber (India)**

Furthermore, limited access to insurance in the event of an accident (see section 4.2.4) or damage to the vehicle, or faults in the vehicle or equipment hosting the application can also lead to additional financial burdens for workers and loss of access to work.

► **Table 4.4 Commission fees paid by app-based taxi drivers, by country and platform (percentages)**

Country	Uber	Beat	Bolt	Cabify	Careem	DiDi	Gojek	Grab	Ola
Chile	25 (18–35)	25 (20–30)	–	25 (15–25)	–	–	–	–	–
Ghana	25 (15–25)	–	15 (10–25)	–	–	–	–	–	–
India	20 (15–44)	–	–	–	–	–	–	–	20 (15–40)
Indonesia	–	–	–	–	–	–	20 (10–33)	20 (5–40)	–
Kenya	5 (5–25)	–	20 (5–22)	–	–	–	–	–	–
Lebanon	25	–	–	–	20 (15–25)	–	–	–	–
Mexico	25 (10–37)	25 (15–28)	–	15 (12–20)	–	10 (9–30)	–	–	–
Morocco	–	–	–	–	25 (10–40)	–	–	–	–
Ukraine	25 (5–35)	–	15 (10–40)	–	–	–	–	–	–

**Note:** The figures shown are the commission fees (at the time of research) that were mentioned most often by respondents per country and app, followed by the range of answers in parentheses.

**Source:** As for figure 4.3.

**I find that there are costs associated with the maintenance of the car that are not considered and the rates are very low, so it does not allow us to cover them – Male respondent on app-based taxi platform Beat (Chile)**

In addition, if clients cancel or return orders, the workers may have to pay out of pocket, or cover long distances without additional pay. About 70 per cent of the app-based delivery workers reported at least one cancellation in a typical week. In the event of last-minute cancellations, workers reported that they might have to return the order to the platform office (50 per cent), or to the restaurant or firm (42 per cent), or pay out of pocket (7 per cent), or that they might be able to keep it free of charge (3 per cent).

**Sometimes when an order is cancelled you have to return to give back the products and the time and expense of gasoline are not returned – Male respondent on app-based delivery platform PedidosYa (Chile)**

For workers in the app-based delivery sector, the nature of the contracts offered by the platforms also has implications for their earnings. Depending on the platform, some may receive a regular income while others may be more dependent on bonuses or the number of orders, making their incomes more unpredictable and volatile. For instance, in India delivery platforms may have workers on a full-time (working 10 to 12 hours a day) or part-time basis (working 4 hours a day), temporary shifts (2 or 3 days of work per week) or a per delivery basis. On Swiggy and Zomato, a substantial proportion of respondents were working on a full-time basis (74 and 96 per cent respectively). These full-time workers have a “minimum income guarantee”, which means that they receive a guaranteed income if they complete a minimum number of hours and orders. They may also have higher

bonus rates compared to part-time workers on these platforms. About 19 per cent of respondents on Glovo in Ukraine reported that they were regular employees, 14 per cent reported that they were temporary workers, and 67 per cent could be classified under self-employed or independent contractors. In Argentina, PedidosYa used to have full-time employees but now hires independent contractors, especially with increasing competition from other platforms (López Mourelo 2020).

**The minimum income guarantee will be paid if I log in for 12 hours, six days a week and complete 60 orders, without holidays on weekends. Then I receive 6,000 rupees (about US\$85) per week – Male respondent on app-based delivery platform Zomato (India)**

A gender pay gap exists in a few countries on location-based platforms. While few women are engaging in the app-based taxi and delivery sectors (see section 4.1.2), gender pay gaps can be observed in some countries where adequate data is available. In the app-based delivery sector, a significant gender pay gap can be observed in Argentina and Chile, where women earn about 17 per cent less than men, while there is no significant gender gap in earnings in Ukraine (see [Appendix 4B](#)). Gender pay gaps are also observed in some developed countries. A study in the app-based taxi sector in the United States based on data collected from over a million Uber drivers finds that men earn around 7 per cent more than women. This gender gap is attributed to differences in experience, preferences for location of work and driving speed (Cook et al. 2018). Women’s ability to access more work might also be restricted as they are cautious and less likely to work during night hours for fear of experiencing discrimination, harassment or violence (see section 4.5).

### 4.2.3 Working hours and work–life balance

Flexibility in setting one's work schedules in an effort to attain work–life balance is among the major reasons for choosing to work on platforms. ILO survey findings reveal that working hours can vary considerably across different types of platforms, with serious implications for work–life balance.

Workers on **online web-based platforms** spend a lot of time doing unpaid work. On average, they work 27 hours in a typical week, including both paid and unpaid work (see figure 4.16), with about one third of their time, or eight hours, spent on unpaid work. For every hour of paid tasks, workers spend about 23 minutes on freelance platforms and 20 minutes on microtask platforms doing unpaid work. While half the workers on online web-based platforms work for 20 hours a week or less, one out of five respondents reported working over 40 hours per week. On freelance platforms, the average number of hours worked was 30 hours, with almost a quarter working for more than 40 hours. Average working hours are comparatively low on competitive programming (18 hours) and microtask platforms (24 hours). However, while half of the workers on microtask platforms work 16 hours or less, 20 per cent of those surveyed were working over 40 hours, indicating considerable variations.

Workers on online web-based platforms spend their time doing both online work and other paid jobs. About half of online web-based platform workers have other paid jobs, which primarily includes salaried employees (45 per cent), employees working for an hourly or daily wage (23 per cent), and freelancers (21 per cent). They spend 28 hours on average in a typical week in those jobs. In addition, they work on average for 26 hours on online platforms, which can make their working week long. The need for such long working hours is indicative of low pay in both the online and offline labour markets. On microtask platforms, the majority of workers are engaged in other paid jobs (52 per cent) and on average work 30 hours in that job. The proportion of workers engaged in other paid jobs is lower on freelance

For every hour of paid tasks, workers spend about 23 minutes on freelance platforms and 20 minutes on microtask platforms doing unpaid work.

platforms (42 per cent) and competitive programming (23 per cent), where they work on average 22 and 27 hours a week, respectively.

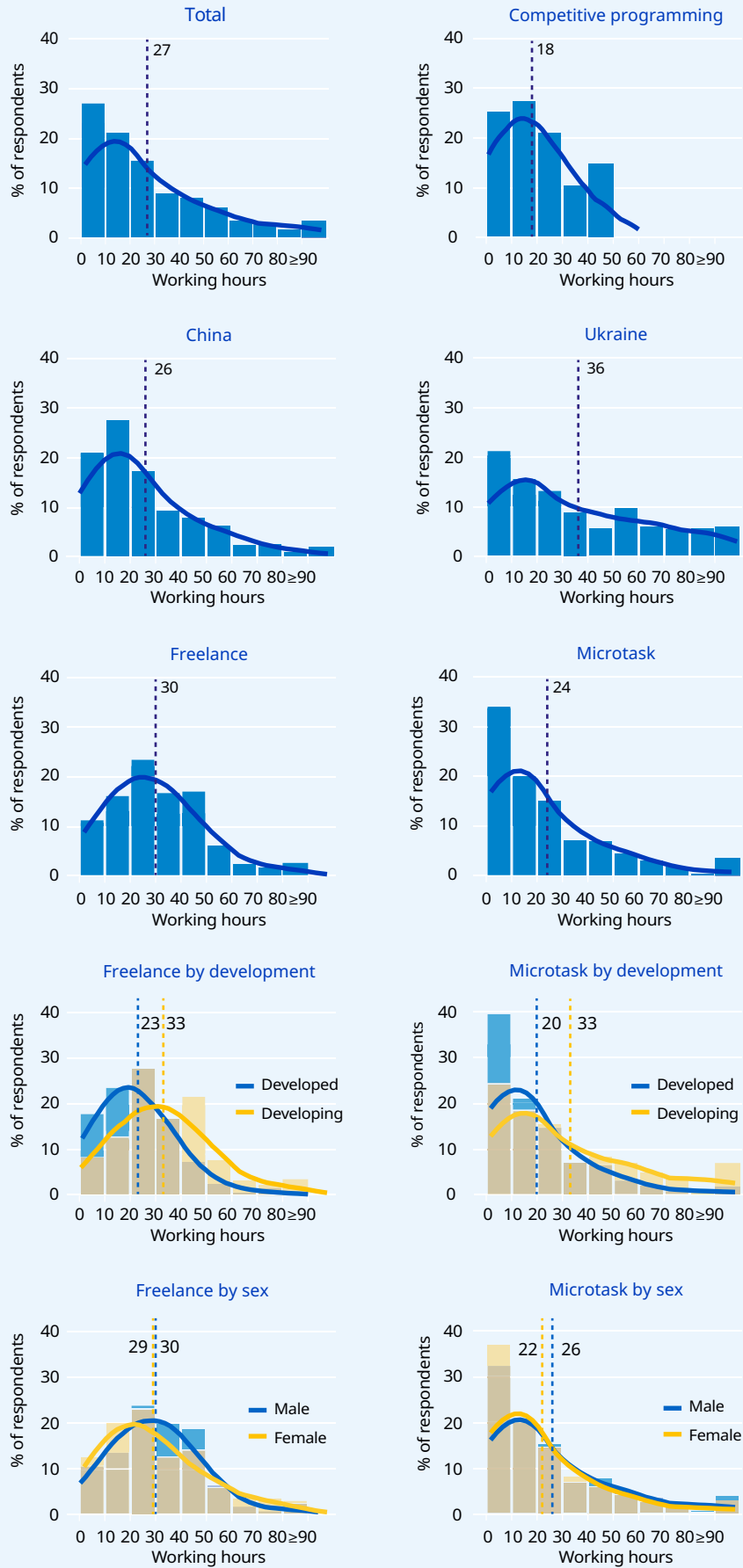
**I used to work 40 hours a week in a business and 20 hours a week in freelance – Male interviewee (Colombia)**

Workers in developing countries work longer hours on online web-based platforms. On average, respondents in developing countries work much more (32 hours) in a typical week (including paid and unpaid work) than their counterparts in developed countries (20 hours). This may be ascribed to their greater reliance on online work as a primary source of income (see section 4.2.2). In addition, workers in developing countries spend more time a week doing unpaid work (9 hours) than those in developed countries (5 hours). This discrepancy could be due to the restrictions that workers from developing countries can encounter on the platforms, such as exclusion from certain tasks (see section 4.5).

Some workers on online web-based platforms have unpredictable work schedules and unsocial hours, particularly in developing countries. While the platforms promote flexibility and freedom to work at any time, the ILO surveys show that workers in fact face limitations in choosing their work schedules. On freelance platforms, about 82 per cent of respondents indicated that clients request them to be available outside normal hours either sometimes or regularly (see also section 4.3.1). Such requests from clients are more common in developing (85 per cent) than in developed countries (76 per cent). About 63 per cent of respondents in China and 31 per cent in Ukraine reported that they receive such requests. This may be due to the fact that most clients tend to be based in developed countries (see section 1.3), with associated time differences.



► **Figure 4.16 Hours worked in a typical week (paid and unpaid), by type of platform, development status and sex**



**Note:** Vertical dashed lines indicate mean values.

**Sources:** As for figure 4.9.

**I am a full-time mother during the day and full-time freelancer during the night. My “night” is the US “day” so, besides that I need some sleep, everything works well for me – Female respondent on freelance platform Upwork (Romania)**

Similarly, on microtask platforms the majority of workers in developing countries (53 per cent) work during the night (10 p.m. to 5 a.m.); they have to adapt to the temporal distribution of jobs, as work is often posted during US business hours – evening or night time for workers in Africa and Asia (Rani and Furrer, forthcoming; O’Neill 2018).

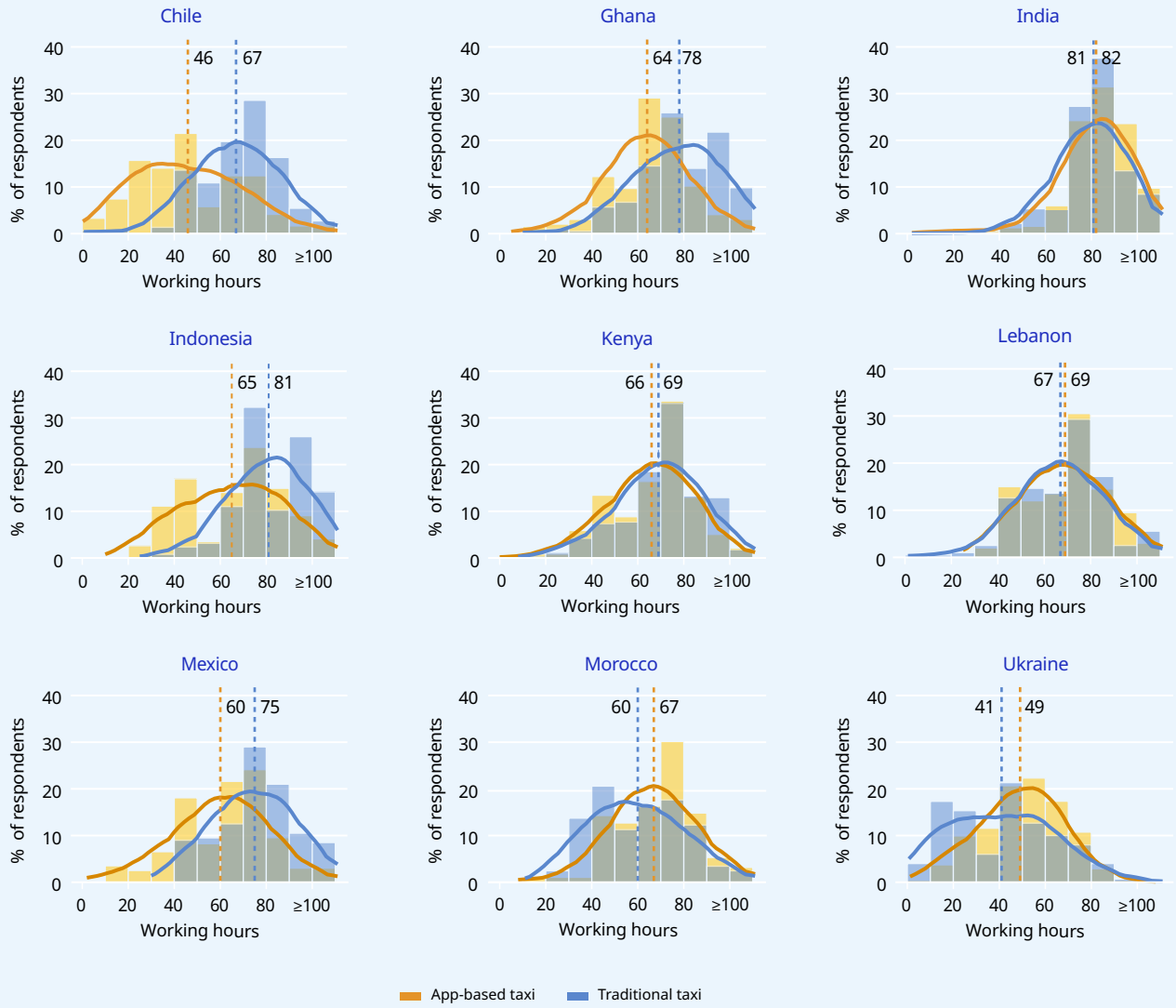
Most workers in the **taxi and delivery sectors** work long hours and have high work intensity. Long working hours in the transportation sector, particularly in traditional taxi services (Gwilliam 2005), have been an enduring concern in developing countries. This situation has also penetrated app-based platforms. While in the traditional taxi and delivery sectors average working hours are 70 and 57 hours per week respectively, they are 65 and 59 hours respectively in the app-based sectors, with over half of respondents working more than these averages.

In some countries, the weekly average is as high as 82 hours (India, app-based taxi) and 63 hours per week (Kenya and Lebanon, app-based delivery) (see figure 4.17).

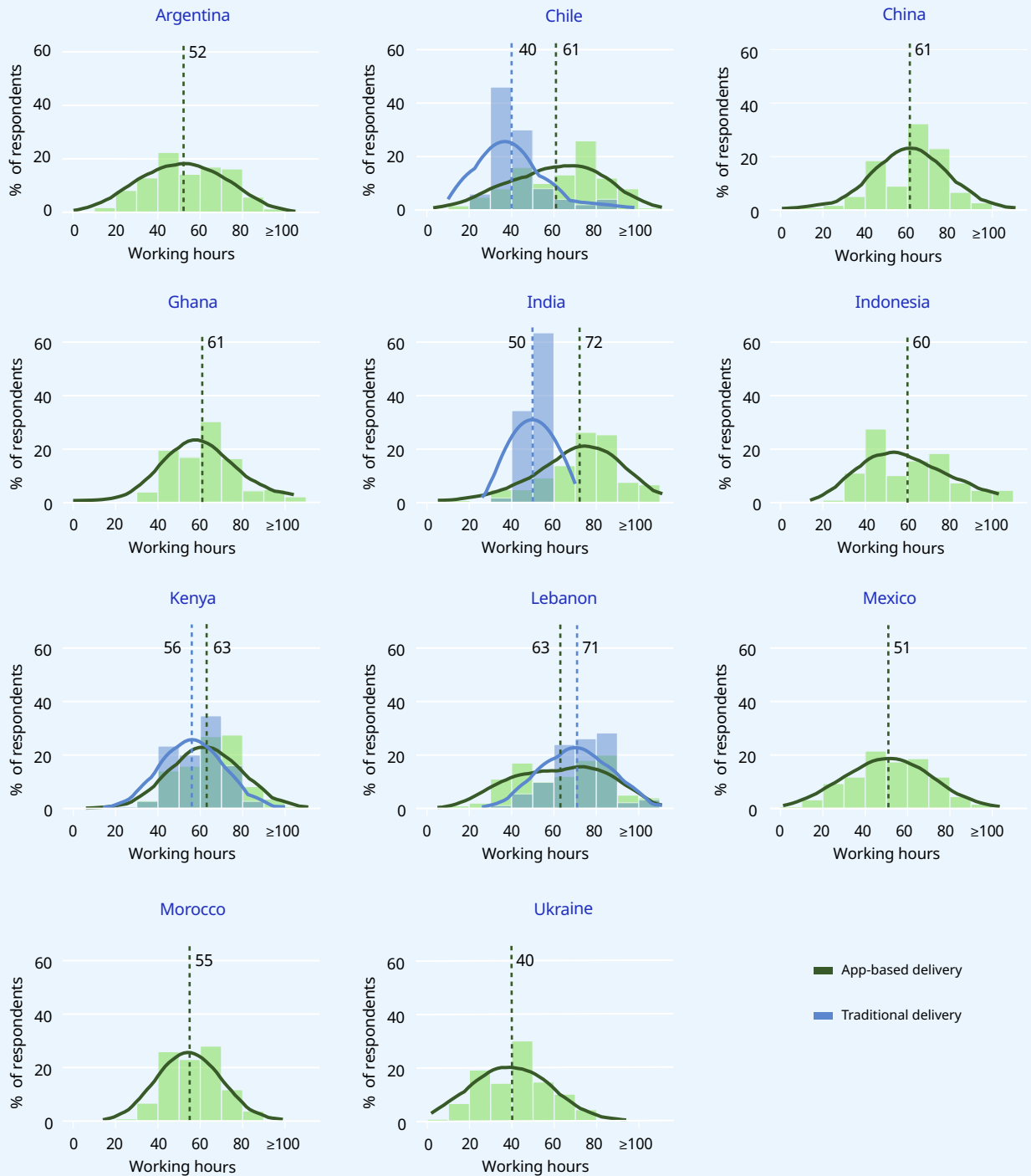
**We have to work for 12 hours and sometimes more but we don’t get paid accordingly – Male respondent on app-based taxi platform Ola (India)**

A sizeable proportion of workers in both the app-based taxi (41 per cent) and delivery (38 per cent) sectors work seven days a week. About 28 per cent of respondents in the app-based taxi sector reported working for over 12 hours, while half the respondents in the app-based delivery sector reported working for over 10 hours on three or more days per week. Through gamification, platforms have created opportunities to access higher earnings or bonuses, which incentivize workers to work long hours. This may also lead to high work intensity, as workers often do not take breaks in order to be able to meet their targets or due to the fear of losing a client or an order. On some platforms, workers’ break times are controlled by the algorithm, sometimes to the second, and workers can be fined for staying offline for too long.

► **Figure 4.17 Hours worked in a typical week in the taxi and delivery sectors, by country**



► Figure 4.17 (cont'd)



**Note:** Vertical lines indicate mean values.

**Source:** As for figure 4.3.

## 4.2.4 Occupational safety and health

On **online web-based platforms** the need to work unsocial hours not only limits platform workers' ability to be flexible in choosing their own working times but also has an impact on their work-life balance, and at times can also lead to social isolation (Anwar and Graham 2020; Dedeoglu, forthcoming). The survey of freelance platforms from Ukraine shows that for many respondents, work-life balance did not improve, or stayed the same, compared to their previous job situation (61 per cent). In addition, 23 per cent reported that they were either often or always stressed, and the majority (58 per cent) were worried about having enough work in the future. Such situations have implications for the health of these workers, many of whom are already confronted with long working hours in front of a screen.

**Freelancing work is done at night so this is a big problem. I am a hard worker and work over 16 hours per day. This has an impact on my health and mental stress. My family depends on my income – Male respondent on freelance platform Upwork (Bangladesh)**

On **app-based taxi and delivery platforms**, a high proportion of respondents (79 and 74 per cent respectively) reported feeling stressed by their work and working conditions. This is often due to traffic congestion, insufficient payment, lack of jobs, long

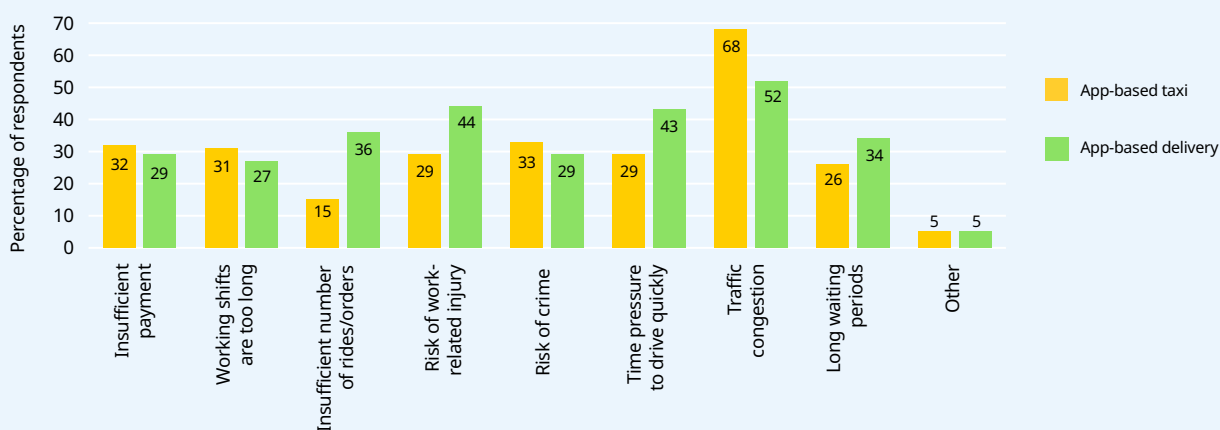
working hours, the risk of work-related injury and pressure to drive quickly (see figure 4.18). Worker movement is closely monitored by the platforms and can be tracked by the clients in real time, which further increases the pressure to reach destinations faster so as to ensure future orders or rides, which can be cancelled for even slight delays. This can also have severe implications for workers' occupational safety and health, notably since workers often do not have access to social protection coverage (see section 4.2.5) and can put the customer's safety at risk as well.

**I crashed once when I worked for 48 hours straight – Male respondent on app-based taxi platform Cabify (Chile)**

**Clients refuse to take the order if there are delays – Male respondent on app-based delivery platform Deliveroo (Kenya)**

Workers in the app-based taxi and delivery sectors, particularly women, also face several occupational safety and health risks. About 83 per cent of workers engaged in the app-based taxi sector and 89 per cent in the app-based delivery sector reported having safety concerns about their work, often relating to road safety, theft and physical assault (see figure 4.19). In countries with women in the sample, a larger proportion of women than men were concerned about physical assault in the app-based taxi sector, indicating that safety concerns, along with violence and harassment at work, remain issues to be addressed.

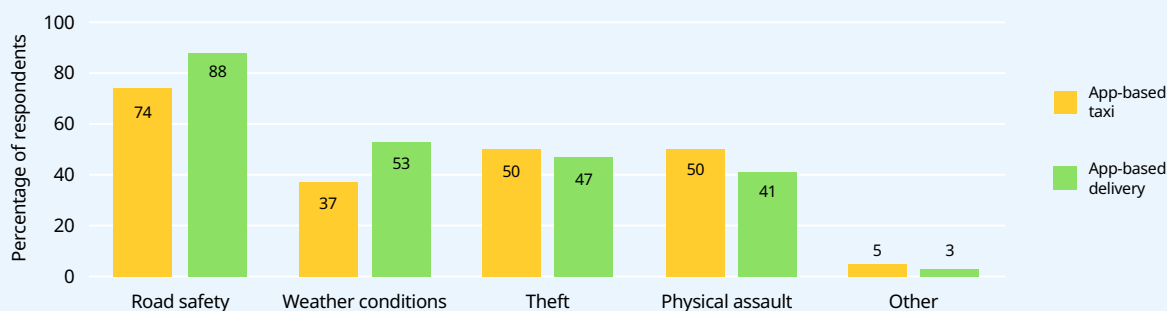
► **Figure 4.18 Main reasons for stress in the app-based taxi and delivery sectors**



**Note:** Figures presented refer to workers who reported their work-related stress level to be 5 or more on a scale from 0 to 10.

**Source:** As for figure 4.3.

► **Figure 4.19 Main concerns regarding personal and physical safety in the app-based taxi and delivery sectors**



**Note:** Figures presented refer to workers who reported their work-related personal and physical safety to be 8 or lower on a scale from 0 to 10, where 0 refers to not safe at all and 10 refers to being completely safe.

**Source:** As for figure 4.3.

**I was involved in a serious harassment case: A man started to watch a porn movie on his cell phone and then he invited me to see the film together, while offering money – Female respondent on app-based taxi platform Beat (Chile)**

**I was hit by another vehicle. I was admitted to the hospital and hence was not able to work for two weeks – Male respondent on app-based taxi platform Bolt (Ghana)**

About 10 per cent of workers engaged in the app-based taxi sector and 21 per cent in the app-based delivery sector reported having experienced a work-related injury or an accident. These proportions were high in Morocco (34 per cent of app-based taxi drivers), and Mexico (47 per cent of app-based delivery workers). A majority of respondents (over 80 per cent) reported that the

platforms did not take any measures to prevent workplace risks, which affected their ability to work and earn an income.

**I had an accident. I want Swiggy to take responsibility and give me support. No one picks up calls in the call centre. They should help me in emergency situations – Male respondent on app-based delivery platform Swiggy (India)**

In addition, the occupational safety and health risks associated with COVID-19 are further exacerbating the threats to workers' well-being, particularly for those in the taxi and delivery sectors (see box 4.5). In the United Kingdom, the occupation of taxi or cab driver, or chauffeur, was among those with the highest rates of death due to COVID-19 (United Kingdom, Office for National Statistics 2021).

► **Box 4.5 COVID-19 impact on occupational safety and health**

A majority of app-based workers (71 per cent) who were working at the time of the survey (see box 4.2) reported that the platforms had introduced measures to reduce health-related risks during the COVID-19 pandemic, although the proportions varied depending on the country and the platform. Among app-based taxi drivers, they ranged from 24 per cent (Kenya) to 81 per cent (India), and among delivery workers, from 48 per cent (Chile) to 92 per cent (Kenya). Such measures included compulsory mask wearing, contactless and cashless delivery, limiting the number of passengers, and sanitizing hands, equipment and vehicles, among others. Some of the taxi platforms also required that the car be equipped with a separation between driver and passengers, or offered to make the necessary modifications. While in certain cases this was provided free of cost, some companies charged the worker for the material.

**I have to log in and upload a photo two or three times a day, while wearing a mask. I also have to have the contact tracing app running – Male respondent on app-based taxi platform Uber (India)**

**Wearing masks, always carrying sanitizer, wearing gloves and keeping distance while delivering – Male respondent on app-based delivery platform Jumia (Kenya)**

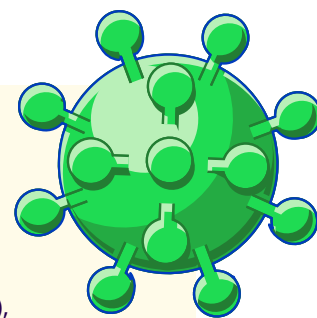
About half the app-based taxi drivers and 81 per cent of the app-based delivery workers further reported that the app shared information or provided safety training in response to COVID-19, which was considered useful by the large majority (89 per cent) of the workers who received it. Platform companies also provided personal protective equipment (PPE) such as masks, gloves or hand sanitizer to workers, as reported by 31 per cent and 67 per cent of app-based taxi drivers and delivery workers respectively. Of these, about half the workers reported that the quantity of PPE was insufficient, and one third reported that the quality was inadequate. Furthermore, 14 per cent of those who were offered this equipment did not manage to use it, and another 11 per cent reported that it was difficult to access the material as it often had to be picked up at certain locations and during certain times that could be inconvenient for workers.

**In order to avoid the crowds at the office where they distributed PPE, I started to buy it myself – Male respondent on app-based taxi platform DiDi (Mexico)**

**Every month I get one disposable mask, one 50ml bottle of sanitizer and one pair of gloves. For one month, one pair of gloves and one mask is not sufficient as they easily get torn – Male respondent on app-based delivery platform Dunzo (India)**

Almost all respondents in both the app-based and traditional taxi and delivery sectors (94 per cent) also took personal measures to reduce work-related risks of becoming infected with COVID-19. For 83 per cent of the app-based workers, this implied additional financial expenditure, especially when they had to buy face masks, gloves or sanitizer as they were not provided with any, or received insufficient amounts of, PPE from the platform company. Furthermore, while a large majority of app-based taxi (88 per cent) and delivery (96 per cent) workers working at the time of the survey considered themselves to be essential workers during the pandemic, many of them also reported being dissatisfied (24 per cent somewhat dissatisfied, 33 per cent very dissatisfied) with what the platform was doing to protect them from COVID-19.

**Source:** ILO rapid-assessment surveys (2020).



## 4.2.5 Access to social protection

Social protection, or social security, is a human right and includes benefits for unemployment, employment injury, sickness, old age, disability, survivors and health protection, as well as for maternity, children and families (ILO 2017a). The organization of work on digital labour platforms has raised considerable concerns regarding inadequate social protection coverage for workers engaged on such platforms (Behrendt, Nguyen and Rani 2019; Wood et al. 2019a; OECD 2018). These concerns have been magnified with the COVID-19 pandemic, as many platform workers have limited or no access to paid sick leave and sickness benefits or to unemployment benefits (ILO 2020a and 2020b; Ustek-Spilda et al. 2020; McGee 2020; see also box 4.6).

Only a small proportion of workers on **online web-based platforms** have social security coverage. Around 40 per cent of respondents reported that they had health insurance<sup>4</sup> (see table 4.5), with small differences by sex. A higher proportion of respondents on microtask platforms (61 per cent) reported that they had health insurance, which could mean that they were covered through their main job<sup>5</sup> or through their spouse; however, the proportions were quite low among respondents on freelance (16 per cent) and competitive programming platforms (9 per cent). A very small proportion of respondents (less than 20 per cent) on online web-based platforms reported being covered for employment injury, unemployment and disability insurance, or for old-age pensions or retirement benefits (both public and private pension plans), and the coverage is low across different types of platforms. There are

► **Table 4.5** Proportion of respondents on online web-based platforms covered by social protection benefits, by type of platform, development status and sex

	Health insurance	Employment injury	Unemployment insurance	Disability insurance	Pension
Freelance	16	1	2	2	6
Competitive programming	9	6	4	2	6
Microtask	61	21	16	13	35
Developed countries	61	17	17	15	35
Developing countries	43	18	9	7	23
China	30			18	6
Ukraine	12	5	5	4	4
Male	42	18	13	12	21
Female	39	11	10	11	18
Has other job	45	17	14	13	26
No other job	37	12	10	10	14
<b>Total (without China, Ukraine)</b>	<b>53</b>	<b>17</b>	<b>14</b>	<b>11</b>	<b>30</b>
<b>Total</b>	<b>41</b>	<b>15</b>	<b>12</b>	<b>12</b>	<b>20</b>

Sources: As for figure 4.9.

4 The survey question relates to health insurance, which could be public social health insurance or a private insurance. It should be noted that ILO social security standards promote social security mechanisms to ensure effective health coverage without financial hardship through collectively financed mechanisms based on the principle of solidarity, in particular social health insurance and tax-financed provision.

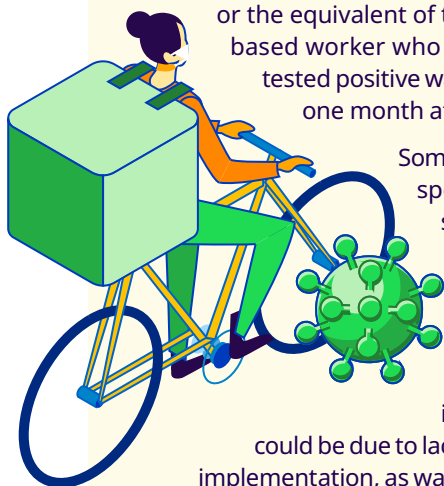
5 Where social protection coverage is related to a job in the “traditional” economy, concerns arise with regard to app-based platforms free-riding with regard to the financing of social security at the expense of the “traditional” economy, with implications for fair competition as well as for the equitable and sustainable financing of social protection systems (Behrendt, Nguyen and Rani 2019).



#### ► Box 4.6 COVID-19 and social protection

Access to paid sick leave and sickness benefits, or unemployment benefits, is quite limited for online and location-based workers, thereby creating unique risks during the COVID-19 pandemic. As many workers depend entirely on task-based work for their earnings, without paid sick leave and sickness benefits (ILO 2020b) they could not afford to self-quarantine even if COVID-19 symptoms were to appear, posing risks both to themselves and to others. At the same time, given the healthcare costs in some countries and the lack of health insurance coverage for platform workers, being tested and treated for COVID-19 may be challenging.

The ILO COVID-19 rapid-assessment surveys reveal that, of respondents who stayed in the taxi and delivery sectors (both app-based and traditional; see box 4.2), 8 per cent reported that either they or a household member had tested positive or had COVID-19-related symptoms. Although most of them took a break from working, and some app-based workers informed the app companies about their situation, only one app-based worker received a one-time financial compensation (US\$70 or the equivalent of two days of app-based work). In another case, an app-based worker who did not have symptoms but lived with someone who tested positive was sent on unpaid leave and had his account deactivated one month after informing the app company about his situation.



Some app-based taxi and delivery platforms have undertaken specific measures to mitigate financial and occupational safety and health risks among workers (see box 4.6), for instance, the provision of financial assistance or support for up to two weeks in the event a worker is diagnosed with COVID-19. However, about 70 per cent of app-based workers reported that they would be unable to take paid sick leave, or receive compensation, in the event they were to test positive for COVID-19. This

could be due to lack of or limited awareness about such provisions, or poor implementation, as was also observed in other studies (Fairwork Project 2020).

While the risks of contracting COVID-19 may be lower for workers on online web-based platforms than for those on location-based platforms, limited access to health protection nonetheless creates challenges in this instance as well. Workers on online web-based platforms who show symptoms often find it difficult to access adequate healthcare because of lack of health coverage, or they need to bear the healthcare costs themselves. In addition, the lack of sickness benefits discourages them from taking time off work. Such a situation in turn creates vulnerabilities for both workers and those dependent on them, while also potentially undermining public health efforts to curb the virus.

Some governments have introduced temporary measures to cushion the adverse impact of the pandemic on workers, such as guaranteeing their access to quality healthcare, enhancing their income security by increasing benefit levels, and extending coverage to previously uncovered groups of workers through ongoing or new programmes. While many countries have extended coverage of their ongoing programmes or schemes to self-employed workers, some countries have specifically highlighted platform workers as a target group for such measures. For example, in Ireland sickness benefits have been extended to all workers, and in Finland and the United States temporary unemployment benefits have been extended to include workers not covered by unemployment insurance, including self-employed workers in the platform economy (ILO 2020a; ISSA 2020).

**Source:** ILO rapid-assessment surveys (2020).

no differences with regard to social protection coverage across different age groups, leaving both younger and older workers vulnerable to socio-economic and health-related shocks.

Workers on online web-based platforms are less likely to have social protection coverage in developing countries than in developed countries. A low proportion of workers from developing countries undertaking online work reported having health insurance (43 per cent), old-age pension/retirement benefits (23 per cent), unemployment protection (9 per cent), disability insurance (7 per cent) or employment injury protection (18 per cent). Fewer than 10 per cent of respondents in the country-level surveys in China and Ukraine reported that they were covered for old age pension or retirement benefits. Such proportions are comparatively higher in developed countries, for instance for health insurance coverage (61 per cent) or old-age pension or retirement benefits (35 per cent) (see table 4.5). The findings clearly underscore that inadequate social protection coverage for workers on online web-based platforms is a concern across both developing and developed countries, although workers in developed countries have slightly better coverage due to certain well-established institutional structures (ILO 2017a).

In the countries surveyed, a majority of respondents engaged in the **app-based taxi and delivery sectors** do not have social protection coverage. Only a small proportion of respondents in the app-based taxi and delivery sectors are covered by unemployment protection, disability insurance (less than 10 per cent) and old-age pensions or retirement benefits (both public and private pension plans) (less than 20 per cent) (see table 4.6). Although a majority of these workers reported that they had access to healthcare in the event

Despite their exposure to high occupational safety and health risks, only about 30 per cent of respondents in the app-based taxi and delivery sectors reported that they were covered for employment injury.

of serious health problems (94 and 80 per cent respectively), only about half were covered by health insurance.

**We should have an accident insurance and social benefits – Male respondent on app-based delivery platform iVoy (Mexico)**

Despite their exposure to high occupational safety and health risks, only about 30 per cent of respondents in the app-based taxi and delivery sectors reported that they were covered for employment injury (see table 4.6). Workers in a number of developing countries reported having taken out the relevant private insurance in the absence of support from the company or adequate protection through public schemes. For instance, in Mexico 70 per cent of app-based taxi drivers reported being covered for employment injury, of whom over 91 per cent had private insurance. While some of the platform companies, such as Swiggy in India or Grab in Indonesia, provide accident insurance coverage (SwiggyBytes 2017; Grab 2017), several respondents who had suffered an accident reported that they did not receive any support from these companies. In addition, such measures may also create challenges in terms of portability of social protection entitlements between jobs.

► **Table 4.6 Proportion of respondents in the taxi and delivery sectors covered by social protection benefits**

	Health insurance	Employment injury	Unemployment insurance	Disability insurance	Pension
App-based taxi	51	27	5	4	18
Traditional taxi	52	23	3	3	14
App-based delivery	53	31	7	6	17
Traditional delivery	40	31	16	4	23

Source: As for figure 4.3.



## 4.3 Worker autonomy and control under algorithmic management

Platform work is often associated by its proponents with greater worker autonomy and control over how work is performed (Mulcahy 2016, MGI 2016). Concerns are being raised, however, regarding new forms of worker control resulting in loss of autonomy, facilitated by the design of platforms and their algorithms (Pichault and McKeown 2019; Wood et al. 2019b; Schorpf, Flecker and Schonauer 2017). These algorithms rely on data generated by workers on various aspects of work undertaken, and often workers lack any access to or control over their data (see section 1.4). This results in information asymmetry wherein the platform has large amounts of data on the workers, and the work being undertaken by the worker, while the worker has little information about how that data is being utilized by the platform.

Algorithmic management is defining the everyday work experience, performance and achievement for workers using the data generated by workers while working on the platform (Duggan et al. 2020; Jarrahi et al. 2019; Rosenblat and Stark 2016). It also has implications for how workers receive feedback and ratings, resolve disputes, and navigate payments or non-payments for the work undertaken.

### 4.3.1 Autonomy and control over work

Monitoring of work and determining working methods are common on **online web-based platforms**. Platforms provide clients and workers with various tools that are used to communicate, manage and monitor work in progress, especially on online freelance platforms (see section 2.5). The ILO surveys show that a substantial proportion of respondents are required by platforms or clients

to install specific software, or meet certain hardware and software requirements;<sup>6</sup> their working hours are monitored by clients; they are requested to be available during specific times by clients; and they are required to use a monitoring system for submitting screenshots of the work done (see table 4.7). Such mechanisms for monitoring and control tend to be more frequent for platform workers from developing countries and women. In some cases platform workers also reported signing non-disclosure agreements preventing them from working with others off the platform, which include detailed instructions for tools to be used for the work as well as requirements for forgoing any claim to intellectual property for the work they performed (Darkwah and Tsikata, forthcoming).

**I had to install the desktop app for time tracking – pretty intrusive app. Takes screenshots, photos from web cam, mouse clicks and keyboard usage – Male respondent on freelance platform Upwork (Argentina)**

Autonomy and control over work is limited for workers in the **app-based taxi and delivery sectors**. A key facet of autonomy and control over work is related to their ability to choose working hours and break times, as well as to decline certain orders, for reasons such as exhaustion or safety concerns. Their schedules and destinations can, however, be shaped by their ratings and “levels”, as well as by other incentive structures of the platforms such as surge pricing. A sizeable proportion of workers in the app-based taxi (37 per cent) and delivery (48 per cent) sectors are unable to refuse or cancel work, as such refusal or cancellation is likely to have negative implications for their ratings. This may result in reduced access to work, lost bonuses, financial penalties and even deactivation of the platform worker’s account (see figure 4.20).

<sup>6</sup> Hardware requirements relate to the speed of the central processing unit, the speed of the internet connection, webcam, microphone and so on. Software requirements relate to operating systems, software for specific tasks (such as transcription or photo editing) and time tracking software, among others.

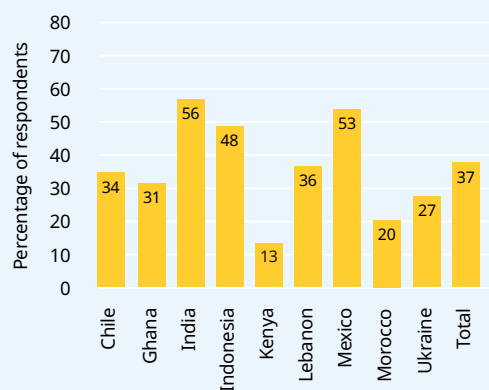
► **Table 4.7 Monitoring and organizing work on freelance platforms, by development status and sex (percentage of respondents)**

		Required by platform		Required by client		Monitoring by clients of hours worked		Screenshot of the work		Availability required during specific times	
		Hardware or software requirements	Installation of specific software	Hardware or software requirements	Installation of specific software	Regularly	Sometimes	Regularly	Sometimes	Regularly	Sometimes
Developed	Freelance	22	41	46	47	47	38	46	37	43	47
	Total	17	27	41	48	34	42	34	40	31	51
	Male	17	27	35	44	26	46	30	36	34	48
	Female	18	27	47	52	40	39	38	43	29	53
Developing	Total	24	48	48	47	53	36	51	36	49	46
	Male	23	47	43	46	52	37	53	34	50	44
	Female	28	48	55	49	55	34	47	39	46	50
	China	-	-	-	-	4	48	-	-	-	-
	Ukraine	-	-	-	-	7	17	12	28	13	32
	<b>Total</b>	<b>22</b>	<b>41</b>	<b>46</b>	<b>47</b>	<b>13</b>	<b>36</b>	<b>24</b>	<b>31</b>	<b>24</b>	<b>38</b>

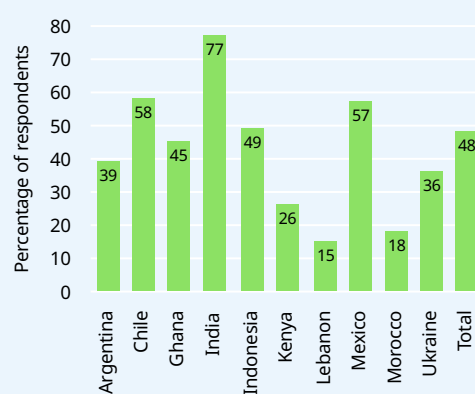
Sources: ILO global survey of workers on freelance platforms (2019–20); and ILO surveys of platform workers in China (2019) and Ukraine (2019).

► **Figure 4.20 Proportion of respondents in the app-based taxi and delivery sectors that are unable to refuse or cancel work without repercussion, by country**

#### App-based taxi sector



#### App-based delivery sector



Source: As for figure 4.3.

**If I reject orders I will not be able to choose a shift time that I want – Male respondent on app-based delivery platform Glovo (Ukraine)**

**If I refuse work the acceptance rate decreases, therefore the amount of orders decreases – Female respondent on app-based delivery platform Cornershop (Chile)**

**I cancelled three trips and I was deactivated for one hour – Non-binary respondent on app-based taxi platform DiDi (Mexico)**

In Chile, PedidosYa allows delivery workers to pre-book their shifts in advance, and the time slots for work are selected on the basis of the “level” assigned to each worker, which in turn depends on the number of hours worked and orders accepted during specific days or time slots. If workers work fewer hours or reject orders, they may not obtain the slot of their choice and they also receive fewer orders. On taxi platforms, in order to ensure the required numbers of drivers for their clients during peak hours, platform companies use surge pricing, which allows them to address supply and demand problems (Liu et al. 2019; Rosenblat and Stark 2016). Many workers indicated that they relied on surge prices to increase their incomes. As the fares are higher during peak hours in certain zones, they are incentivized to drive to these zones during specific times and accept a minimum number of rides to avail themselves of the benefits.

**To increase my income, I go to work to areas with dynamic pricing, work during peak hours, avoid heavily-travelled roadways – Male respondent on app-based taxi platform DiDi (Mexico)**

**You cannot refuse more than 10 per cent of the daily orders, otherwise they will downgrade you from the list – Male respondent on app-based delivery platform PedidosYa (Chile)**

In both the app-based taxi and delivery sectors workers are often also closely monitored by the platform and the clients with the help of GPS systems, and workers can be contacted at any time once an order is placed. Such tracking also enables platforms to define the routes that workers take to complete orders, and they carefully monitor the time spent. Moreover, respondents also reported that they tend to have very little time

to decide whether to accept or decline an order; on Uber, drivers receive a request and are given between 15 and 40 seconds to decide, based on limited information.

### 4.3.2 Ratings, evaluation and dispute resolution

Key uses of algorithms on platforms include matching workers and clients, evaluating the work performed and providing ratings (Duggan et al. 2020; Wood et al. 2019b; see also Chapter 2). Platforms also reject work or “deactivate” workers if their ratings fall below a certain threshold, and such rejections and deactivations are often algorithmically managed.

Ratings play a decisive role in accessing work on **online web-based platforms**. A high rating was reported as a key factor in obtaining new work by 83 per cent of the respondents on freelance platforms. A high proportion of respondents (87 per cent) in the country-level survey of Ukraine also reported that their rating was either very or somewhat important to them. Almost half of the respondents on competitive programming platforms reported that a high ranking was advantageous in their job search. While higher ratings play a role in facilitating access to work, lower ratings can sometimes lead to deactivation of worker accounts. Some workers on web-based platforms in China (6 per cent) and Ukraine (11 per cent) reported instances of accounts being deactivated. This can occur without any explanation provided to the worker, and with little opportunity for communication or contestation.



**Upwork relies heavily on feedback ratings from clients. If you do not receive feedback from a client or can no longer contact a client, Upwork thinks you did not complete the job. Therefore your success rating suffers. And unless you are already top rated you cannot dispute it – Male respondent on freelance platform Upwork (Philippines)**

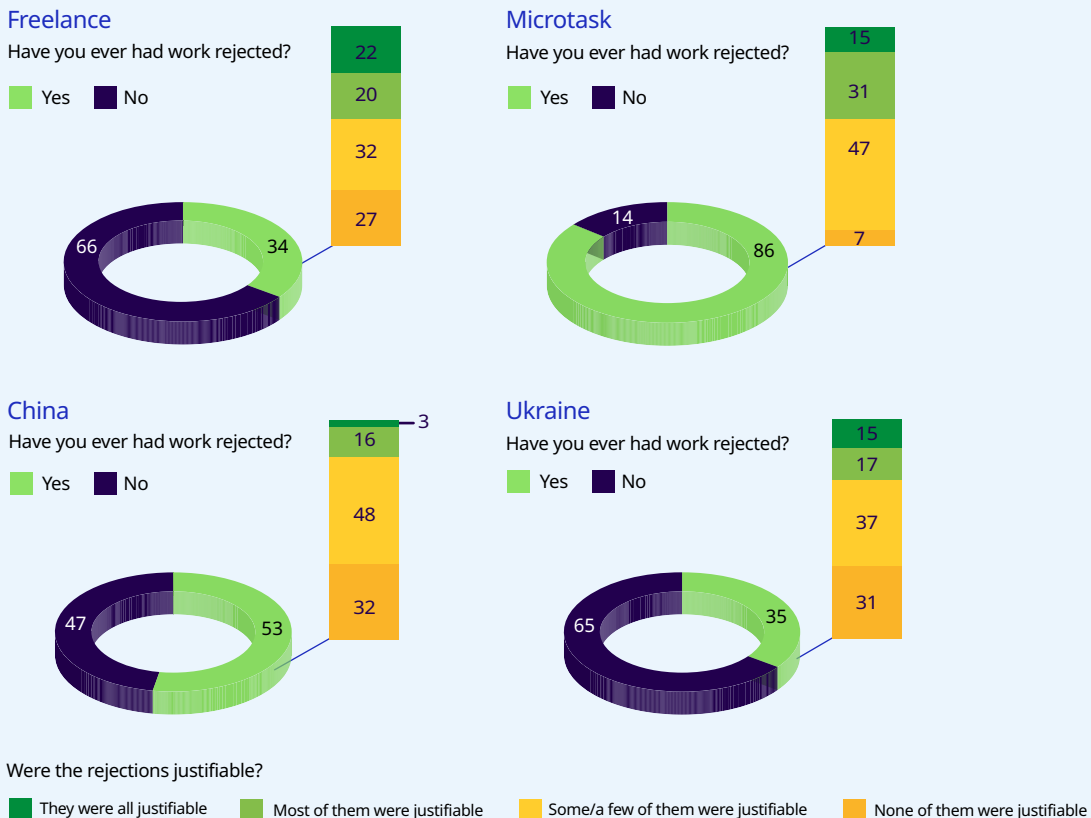
Over 60 per cent of respondents on freelance platforms, as well as in the country-level survey of Ukraine, reported that they did not receive any form of evaluation other than their rating. This is the case even if they were poorly rated, which limits their capacity to learn and perform better in future. A higher proportion of workers from developed countries (68 per cent) and especially women (71 per cent) did not receive any form of work evaluation.

Worker ratings are influenced by both the clients and the platform’s algorithms. For instance, a low

rating or rejection of work by a client, which may be unfair or fraudulent but will nevertheless be factored into the algorithms can affect a worker’s overall ratings. In China, 62 per cent of respondents on freelance platforms reported exposure to deception or fraudulent treatment at least a few times by clients or platforms.

Rejection of work is common on online web-based platforms although not all rejections are justifiable, particularly on microtask platforms. Respondents on microtask (86 per cent) and freelance (34 per cent) platforms reported having had work rejected by clients, and only a minority reported that the rejections were justifiable (see figure 4.21). The high rates of unfair rejections, particularly on microtask platforms, reflect the fact that work tends to be supervised by algorithms rather than by humans. These algorithms can be designed in such a way that they approve tasks done by multiple workers based on the majority of responses, independently of the correct response, a practice that can lead to

► **Figure 4.21 Rejection of online work, by type of platform and country (percentage of respondents)**



Sources: As for table 4.2.

unfair rejections of work. Moreover, such unfair rejections and the consequent denial of payment for the work can result in lower ratings for the worker, with implications for future work opportunities, and can also lead to deactivation of the worker's account (Berg et al. 2018).

**The clients didn't accept the work for reasons that were not in the requirements initially. In my opinion, they just wanted the work to be done for free – Female respondent on freelance platform Upwork (Belarus)**

**Some requesters reject work randomly without convincing reasons, maybe to get work done without paying the compensation – Male respondent on microtask platform AMT (India)**

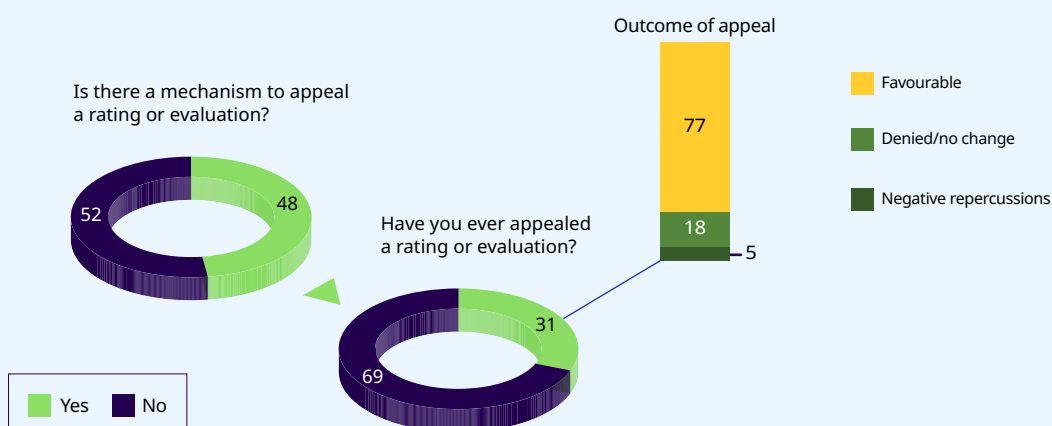
About half of the respondents on freelance platforms reported that they were not aware of a formal process available to file a complaint or seek help (see figure 4.22). Among respondents who were aware of such processes, 31 per cent reported that they had contested or appealed a rating or evaluation. Of these, 77 per cent reported a favourable outcome, 18 per cent reported that their appeal was denied and no change was made to their rating or evaluation, and 5 per cent reported that their rating or evaluation worsened or that they were faced with some form of retribution. A higher proportion of men (79 per cent) than women (73 per cent) had a favourable outcome.

Ratings are critical for most workers in the **app-based delivery and taxi sectors**. A majority of respondents in the app-based taxi and delivery sectors reported that their ratings had an impact on the amount of work (72 and 65 per cent respectively) and the type of work (for instance in terms of earnings or distance: 58 and 47 per cent respectively) they received. About one in four workers engaged in these sectors believed that their current rating was not an accurate reflection of how well they performed. This was particularly high in Lebanon among app-based taxi drivers (47 per cent) and in India among app-based delivery workers (43 per cent). Sometimes these ratings were influenced by factors beyond the worker's control, such as delays in receiving a food order from a restaurant, or traffic congestion.

**They lowered my rating and it wasn't my fault: the user didn't want to pay for the trip, and they didn't pay me for the trip. My account was then suspended for three days – Male respondent on app-based taxi platform Bolt (Mexico)**

A sizeable proportion of workers in the app-based taxi and delivery sectors are also unaware of any formal process for filing a complaint or seeking help, which was reported by 42 and 32 per cent of app-based taxi drivers and delivery workers, respectively. Moreover, this was also reported by the majority of respondents in both sectors in

► **Figure 4.22 Knowledge and use of appeal mechanisms on freelance platforms (percentage of respondents)**



Source: ILO global survey of workers on freelance platforms (2019–20).

Indonesia and Morocco. As discussed in Chapter 2, dispute resolution mechanisms are often specified in the platform's terms of service agreement. However, many workers in the app-based taxi (58 per cent) and delivery (49 per cent) sectors reported that they had not seen their platform's terms and conditions. Of those who had seen the terms of service agreements applicable to them, almost one third reported not having read, not remembering or not having understood them.

Some workers in both sectors had complained or requested assistance from the platform company: 28 per cent in the taxi and 36 per cent in the delivery sectors. These complaints were mainly related to payment issues (48 and 41 per cent respectively); conflict with the customer (35 and 24 per cent respectively); technical problems with the app (23 and 31 per cent respectively); and cancelled rides or orders (12 and 36 per cent respectively). When workers do seek assistance or file complaints, a sizeable proportion in both the app-based taxi (49 per cent) and delivery (37 per cent) sectors reported not being satisfied with the outcome, with some even reporting being punished, through the imposition of fines, for example.

**They answer to you but at the end, you always get adversely affected. They charge everything to you, even the shipping rates – Male respondent on app-based delivery platform SinDelantal (Mexico)**

**I was not satisfied with the platform's response to my complaint. They punished me and I had to pay the fine – Female respondent on app-based taxi platform Beat (Chile)**

Some workers in the app-based taxi and delivery sectors have experienced deactivation of their accounts: this was the case for about 19 and 15 per cent of workers in the app-based taxi and delivery sectors respectively (see figure 4.23). The proportions were particularly high in Ghana and Morocco (37 per cent of app-based taxi drivers) and Mexico (45 per cent of app-based delivery workers). The reasons for deactivation included low ratings, non-acceptance of work, taking leave and complaints from customers. Among those

▲▲ About 19 and 15 per cent of workers in app-based taxi and delivery sectors respectively reported having experienced account deactivation.

who reported occurrences, deactivation lasted for up to seven days for the majority in both the taxi (73 per cent) and delivery (69 per cent) sectors, while it was permanent for some (7 and 15 per cent respectively).<sup>7</sup> Thus workers were effectively blocked from accessing any work through the platform, sometimes permanently.

**Uber Eats deactivated my account for three days because I cancelled an order that was far away – Male respondent on app-based delivery platform Uber Eats (Mexico)**

**My account was deactivated permanently because I went back to my home village – Male respondent on app-based taxi platform Gojek (Indonesia)**

About 65 per cent of workers in the app-based taxi and delivery sectors who reported deactivation considered that it was unjustified, and a substantial proportion (69 and 83 per cent respectively) had appealed against it, with 48 and 59 per cent respectively reporting dissatisfaction with the outcome. This proportion was quite high (over 60 per cent) among app-based taxi drivers in Mexico and Morocco.

**I was deactivated for one year. When I went to the app offices they ignored me. Because the app only believes the client when there's a problem and ignores the driver – Male respondent on app-based taxi platform Uber (Mexico)**

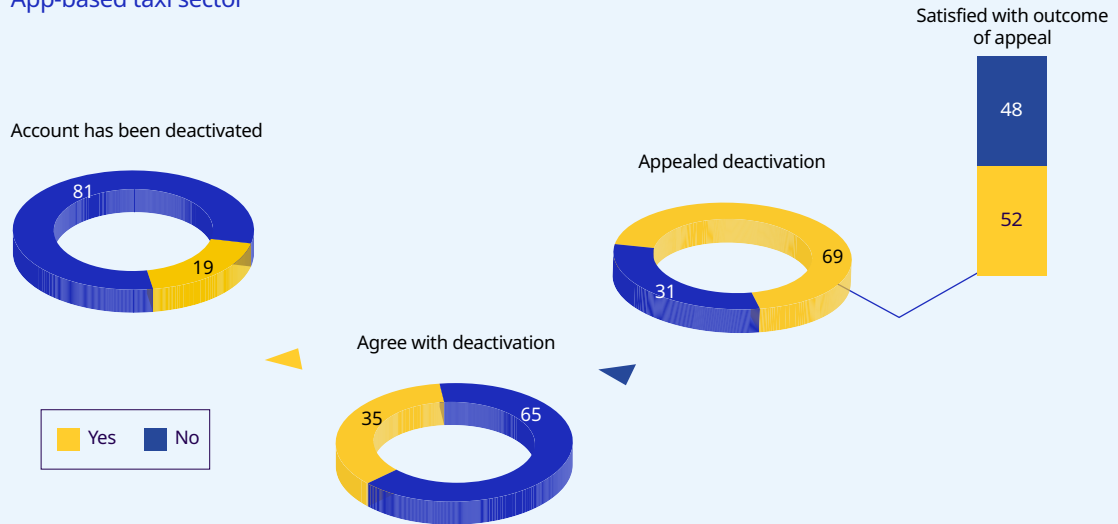
**I don't know why the account was deactivated. I appealed and there were no results. My problems were solved only after our association intervened – Male respondent on app-based taxi platform Careem (Morocco)**

<sup>7</sup> Workers whose accounts had been permanently deactivated on one platform were using another platform at the time of the survey.

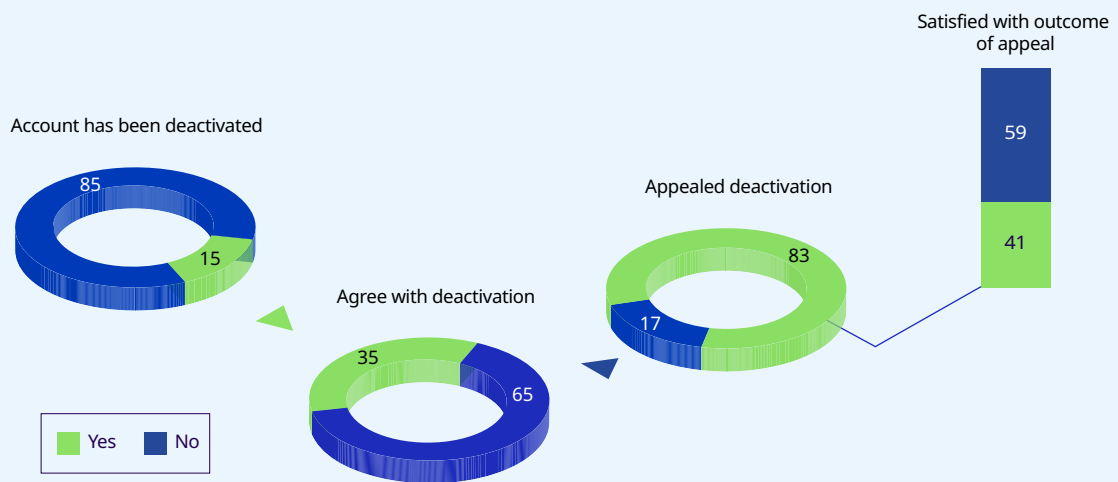


► **Figure 4.23 Deactivation of accounts in the app-based taxi and delivery sectors (percentage of respondents)**

App-based taxi sector



App-based delivery sector



Source: As for figure 4.3.

## 4.4 Skills acquisition and mismatch

Digital labour platforms provide work opportunities ranging from low-skilled, short-term, repetitive tasks or delivering goods to high-skilled website development or data analytics. Despite the diversity of tasks available, there are challenges with regard to skills mismatch, training requirements or accumulation of skills on platforms.

Platforms are redefining the relationship between formal education and access to work (Teubner, Adam and Hawlitschek 2019; see section 4.3.2). The relevance of skills and qualifications acquired through formal education varies on **online web-based platforms**. Workers often do not have to provide their educational qualifications on online platforms; instead it is their profile, ratings or reputation which are vital for accessing well-paid tasks.

That said, a statistical analysis shows that there is some correlation between educational qualifications and earnings (see [Appendix 4B](#)). Workers on freelance platforms with a postgraduate degree and above in developed countries tend to earn 70 per cent more than their counterparts without

a university degree, when controlling for basic characteristics. In developing countries there is no significant difference between workers with different education levels. The statistical analysis also shows that respondents holding a bachelor's degree are not associated with significantly different hourly earnings than those without a university degree, and this is true in both developed and developing countries. Other studies have also indicated that workers' education is not necessarily correlated with their income levels on platforms; rather, it is previous work experience and reviews obtained from clients that influence their earnings (Herrmann et al. 2019a and 2019b).

Moreover, workers in developing countries with a postgraduate degree and above tend to have lower average hourly earnings than workers from developed countries with only secondary education or below (see table 4.8). This difference is more pronounced when looking at median incomes.

In addition, on some platforms, such as PeoplePerHour or Freelancer, workers can improve

► Table 4.8 Hourly earnings (paid and unpaid) with different education levels on online web-based platforms, by type of platform, development status and sex (in US\$)

	Mean				Median			
	Secondary and below	Higher secondary	Bachelor's degree	Postgraduate degree and above	Secondary and below	Higher secondary	Bachelor's degree	Postgraduate degree and above
Freelance	–	7.8	7.3	8.1	–	5.8	4.7	6.5
Microtask	3.4	3.1	3.6	2.9	1.7	2.2	2.5	1.9
Developed	3.8	3.8	5.1	4.5	2.3	2.9	3.9	2.7
Developing	2.7	2.1	2.8	3.5	1.0	1.1	1.6	1.9
China	–	2.6	2.7	3.4	–	1.6	1.8	3.0
Ukraine	–	2.2	3.0	3.7	–	1.2	1.5	1.5
Male	–	3.0	3.7	4.0	–	2.0	2.3	2.3
Female	2.6	2.8	3.6	3.7	2.1	1.7	2.3	1.7
Total (without China and Ukraine)	3.5	3.4	4.1	4.0	1.7	2.3	2.6	2.3
<b>Total</b>	<b>3.5</b>	<b>2.9</b>	<b>3.6</b>	<b>3.9</b>	<b>1.7</b>	<b>1.9</b>	<b>2.3</b>	<b>2.0</b>

– indicates there were not enough observations to yield any meaningful analysis.

**Note:** Data is trimmed at 1 and 99 per cent by sector.

**Sources:** As for table 4.2.

their access to work by paying for additional services and increased visibility (see sections 2.3 and 4.2.1), rather than through the skills and qualifications they have acquired via formal education.

To enable workers to improve their skills and enhance their profiles, several platforms are increasingly providing opportunities through skills certification schemes (see section 2.3.3). About 20 per cent of respondents on freelance platforms reported that they had completed classes or training to obtain such certification. These have demonstrated some positive impact on earnings, primarily for relatively new entrants, although verified work history and ratings tend to have greater impact for experienced workers (Kässi and Lehdonvirta 2019).

Competitive programming platforms in particular provide an opportunity for workers to learn new skills or upgrade their current skill sets, establish networks and improve their employability. About 76 per cent of respondents on competitive programming platforms reported that they competed regularly (more than once a month) in programming contests. The contests also help these workers to solve interesting challenges that the platforms are confronting. Furthermore, they often complement and help to overcome limitations in formal academic training, and assist workers to adapt to the changing needs of the market (Brito and Gonçalves 2019). Some platforms, such as CodeChef, Kaggle, HackerEarth and HackerRank, also offer real-time problem-solving contests or challenges for universities as part of their academic curricula. Workers are further motivated to participate in these platforms to improve their ratings or rankings, which reflect their ability to program, with many platforms such as HackerRank, Topcoder and others providing recruitment services to large companies (Grooms 2017; see section 3.1.1).

**Competitive programming helps me prepare for challenging questions and these are often asked in interviews by big companies, hence it serves as a valuable preparation tool – Male respondent on competitive programming platform HackerRank (India)**

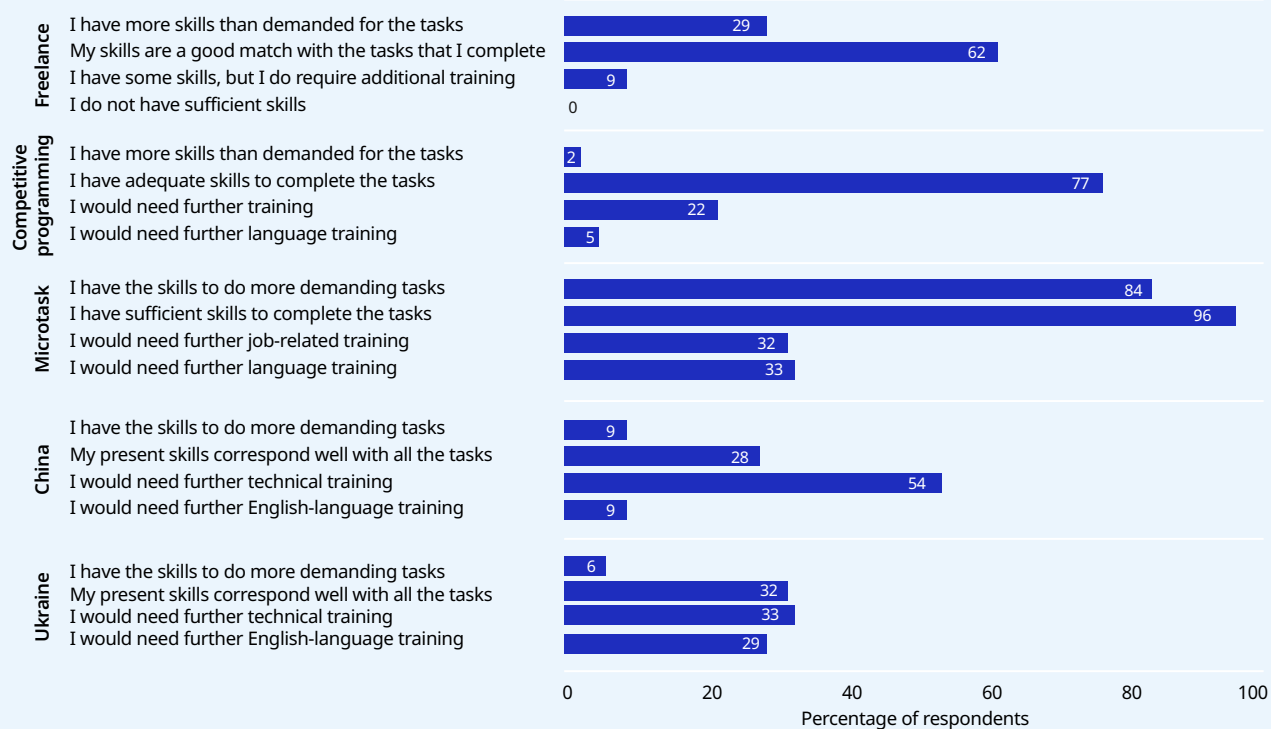
**I participate in competitive programming to work on interesting problems while learning new skills along the way – Male respondent on competitive programming platform HackerRank (United States)**

Varying degrees of vertical and horizontal skills mismatch can be observed on online web-based platforms. Workers with higher educational achievements are not necessarily finding work commensurate with their skills. Many respondents on online web-based platforms reported that they have more skills than demanded for the tasks (see figure 4.24), with small differences by sex. The skills mismatch is quite pronounced for those engaged on microtask platforms, where many (57 per cent) have a university degree, of whom a majority have a specialization in STEM (science, technology, engineering and medicine), but undertake tasks such as responding to surveys and experiments, content access, data collection and so on, which tend to require few or no specific skills. On freelance platforms, a sizeable proportion of respondents (29 per cent) reported that they had more skills than were demanded for the task. A higher proportion of women (68 per cent) than men (59 per cent) reported that their skills were a good match. On competitive programming platforms, an overwhelming majority of respondents (77 per cent) reported that their skills were adequate for doing well on the platform. The need for more technical training was prominent among respondents on web-based platforms in China (54 per cent) and Ukraine (33 per cent).

**I have the necessary skills for the jobs I do but additional skills will definitely allow me to be more successful – Female respondent on freelance platform Upwork (Ukraine)**

On some online web-based platforms, horizontal skills mismatch is not prevalent. On freelance platforms many respondents undertook tasks potentially related to their field of study (see table 4.9). For example, 60 per cent of respondents with a university degree in the arts completed creative work, and 61 per cent of those with an IT and computer degree performed technology-related tasks. However, several instances of horizontal

► **Figure 4.24 Skills in relation to tasks on online web-based platforms, by type of platform (percentage of respondents)**



**Note:** The responses relating to skill requirements for tasks vary across the different platforms, as the questions were formulated differently. In addition, respondents on microtask and competitive programming platforms were asked to multi-select their response, while in the cases of freelance platforms and country surveys of China and Ukraine the respondents were asked to select only one response.

**Sources:** As for figure 4.9.

► **Table 4.9 Types of tasks performed by respondents on freelance platforms, by field of study**

Field of study	Number of respondents	Type of task performed (%)						
		Business services	Technology-related	Data analytics	Creative	Sales and marketing	Professional services	Other
Arts	25	40	16	20	60	20	68	4
Communication and media	15	20	7	13	47	13	80	27
Economics, finance and accounting	85	64	14	36	26	25	59	20
Engineering	35	34	31	20	51	17	74	26
Formal and natural sciences	30	47	23	43	17	33	77	17
IT and computers	61	31	61	28	41	21	36	10
Law	11	55	9	9	0	18	100	9
Medicine and health	18	50	11	28	22	28	83	33
Social sciences	84	57	7	21	25	21	77	33
<b>Total</b>	<b>364</b>	<b>48</b>	<b>22</b>	<b>27</b>	<b>32</b>	<b>23</b>	<b>66</b>	<b>21</b>

**Note:** Figures presented refer to workers with a university degree. Types of tasks include: Business services: accounting, administrative support, customer service, business consulting; Technology-related: IT and network administration, mobile development, general programming, software development, web development, website development; Data analytics: analytics, data sciences, database management; Creative: design, graphics, music and audio, video and animation, other creative activities; Sales and marketing: general sales and marketing, digital marketing; Professional services: architecture, legal, translation, transcription, writing, editing, general consulting.

**Source:** ILO global survey of workers on freelance platforms (2019–20).

skills mismatch can also be observed where workers performed tasks that were unrelated to their field of expertise. For instance, 22 per cent of respondents with a university degree in medicine and health performed creative tasks. A survey of workers on Russian-language freelance platforms also shows that about one third of the workers (36 per cent) were engaged in tasks that were absolutely unrelated to their field of study (Shevchuk and Strebkov, forthcoming). Horizontal skills mismatch was particularly prevalent in developing countries (see also box 4.7).

**There are very few tasks that match my skills, especially tasks related to civil engineering work and civil 3D work – Male respondent on freelance platform Upwork (Pakistan)**

Gender-based occupational segregation of tasks was common on freelance platforms. The proportion of female respondents on freelance platforms performing tasks related to technology and data analytics (8 and 22 per cent respectively) was lower than for men (32 and 29 per cent respectively). A higher proportion of women performed tasks related to business services, particularly in developing countries (70 per cent). Women were also more engaged than men in professional services such as in the legal field, translation, writing and editing or sales and marketing. In China and Ukraine, 50 and 52 per cent of female respondents respectively undertook work in professional services, which was considerably higher than for male respondents (34 and 29 per cent respectively). The proportion of women engaged in technology-related tasks was far lower in both

#### ► Box 4.7 Underutilization of skills

Many platform workers in developing countries are unable to access opportunities aligned with their skill sets. As a result, a number of highly educated platform workers in these countries are performing academic writing tasks on online web-based platforms to assist students with their assignments and theses, a situation which also in fact leads to legal and ethical concerns. One respondent with a degree in accounting, for example, was completing student assignments for US\$50, while sometimes also being involved in the writing of Master's and PhD theses. Often posted by anonymous students based in developed countries, the topics for such theses ranged from social sciences to biological sciences, and could also be extremely specific. Platform workers needed to perform such assignments rapidly and struggled to gain expertise on the issues, as seen in one comment: "You don't master one subject. So you adapt as a journalist."

Workers also spend many hours completing these writing tasks. One respondent highlighted that ten pages for a Master's thesis can take about ten hours, while seven pages for a PhD thesis can take about nine hours. In this regard, there were concerns about rejections, with reported instances of work being rejected without grounds provided and no revision requested, which results in lost time and effort for the worker without any earnings for work accomplished.

**Quite a number of times work has been rejected. After you are done with the work, they reject the work and then they send you the rejection notice and then they don't repost the work – Male interviewee (Kenya)**

In the case of content moderation, interviews with workers in call centres revealed that over 95 per cent of those hired are IT professionals with a university degree in engineering or computer science. These workers are primarily tasked with monitoring and removing offensive, obscene, false or illegal content from online platforms. These tasks had no relation to their qualifications, and the workers did not see any learning or career advancement in these jobs. The major reason for pursuing this kind of work was the lack of alternative employment opportunities. While IT professionals are recruited to perform these tasks, research has shown that a number of sectors, including the ICT sector, are facing a shortage of such workers (ILO, 2020g). This clearly demonstrates the need to address skills mismatches and ensure that the expertise of IT professionals is used efficiently.

**Source:** ILO interviews with workers in developing countries.

China (5 per cent) and Ukraine (2 per cent), with almost a quarter of male respondents reporting that they performed such tasks.

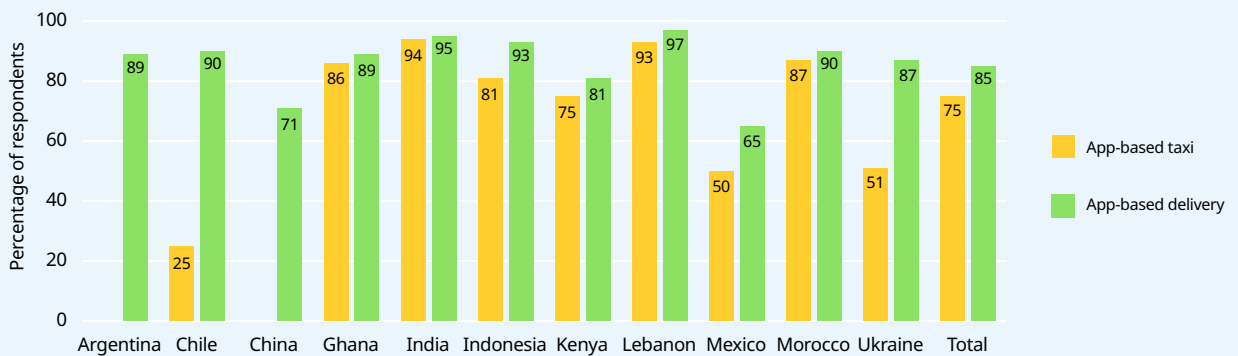
Most workers in the **app-based taxi and delivery sectors** have access to some sector-specific training, although the quality has been questioned by some. High educational levels among workers in these sectors (see section 4.1.6) could be indicative of a skills mismatch, given that they are considered low-skilled. Nevertheless, specific training can be beneficial to good work performance in these sectors. In this regard, a large majority of respondents in both the app-based taxi (75 per cent) and delivery (85 per cent) sectors reported receiving some degree of training, with significant variations at the country level (see figure 4.25). Training they received included information on how to use the

app, followed by customer service and safety guidelines (see figure 4.26). Some respondents were critical about the quality of training offered by the platforms, which they did not consider to be very helpful for their work. With the spread of the COVID-19 pandemic, many platforms have also started to raise awareness and deliver training in occupational safety and health, including through digital means (Fairwork Project 2020; see box 4.6).

**Training is useless and most delivery workers that finish the training don't know what to do – Male respondent on app-based delivery platform Rappi (Chile)**

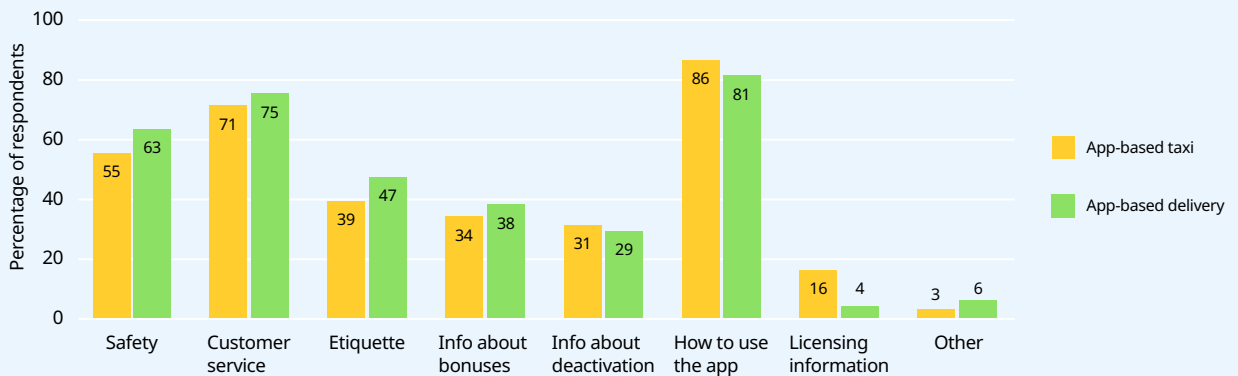
**For training, I receive videos on the app. I learn only through these – Male respondent on app-based taxi platform Uber (India)**

► **Figure 4.25 Proportion of respondents who received training from app-based taxi and delivery platforms, by country**



Source: As for figure 4.3.

► **Figure 4.26 Types of training provided by app-based taxi and delivery platforms**



Note: Figures presented refer to workers who reported having received training from location-based platforms.

Source: As for figure 4.3.

## 4.5 Platform design and discrimination

A considerable proportion of workers on **online web-based platforms** have experienced discrimination, particularly women and workers in developing countries. About 19 per cent of respondents on freelance platforms reported that they had experienced discrimination. This proportion was lower in developed countries (12 per cent) than in developing countries (22 per cent), where it was also particularly high among female respondents (25 per cent) (see figure 4.27).

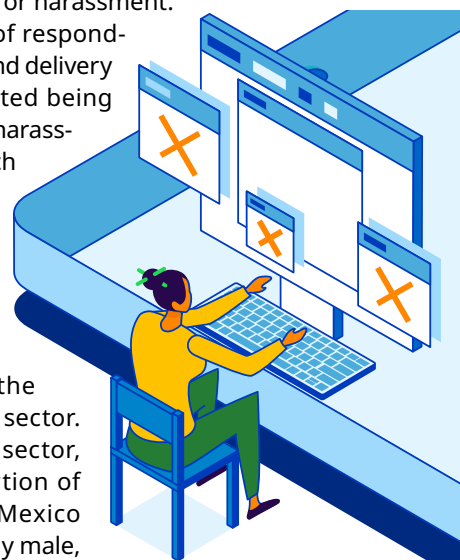
The qualitative responses from respondents in developing countries further reflect the fact that discrimination often takes the form of exclusion from work opportunities or low pay. This was observed on several platforms where certain higher-paying tasks were allocated to workers from developed countries through the platform design. Discrimination based on other factors, such as gender, ethnicity, age or language spoken, was also reported.

**Some job postings specify that you cannot apply if you are a non-native speaker, even if you are qualified – Female respondent on freelance platform Upwork (Nicaragua)**

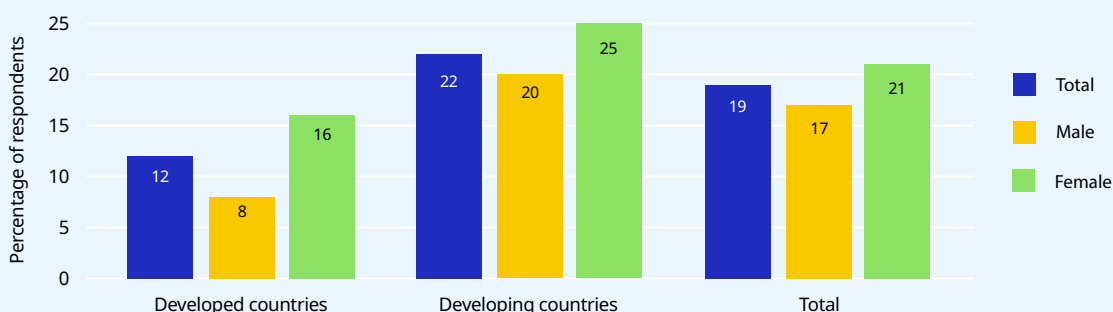
**I have had a male client imply that a certain task may go over my head because I am a woman – Female respondent on freelance platform Upwork (South Africa)**

**While being interviewed for the job some clients plainly state a preference for some localities more than others. These are mostly jobs you could have openly competed on – Female respondent on freelance platform Upwork (Malawi)**

A considerable proportion of workers in the **app-based taxi and delivery sectors** have also experienced discrimination or harassment. About 20 and 29 per cent of respondents in the app-based taxi and delivery sectors respectively reported being subject to discrimination or harassment, or were aware of such instances faced by their peers while performing work (see figure 4.28). A higher proportion of women (where they were present in the sample) than men reported this to be the case in the app-based taxi sector. In the app-based delivery sector, a particularly high proportion of respondents from India, Mexico and Morocco (predominantly male, as few women are present in the sector in these countries) reported facing discrimination or harassment.

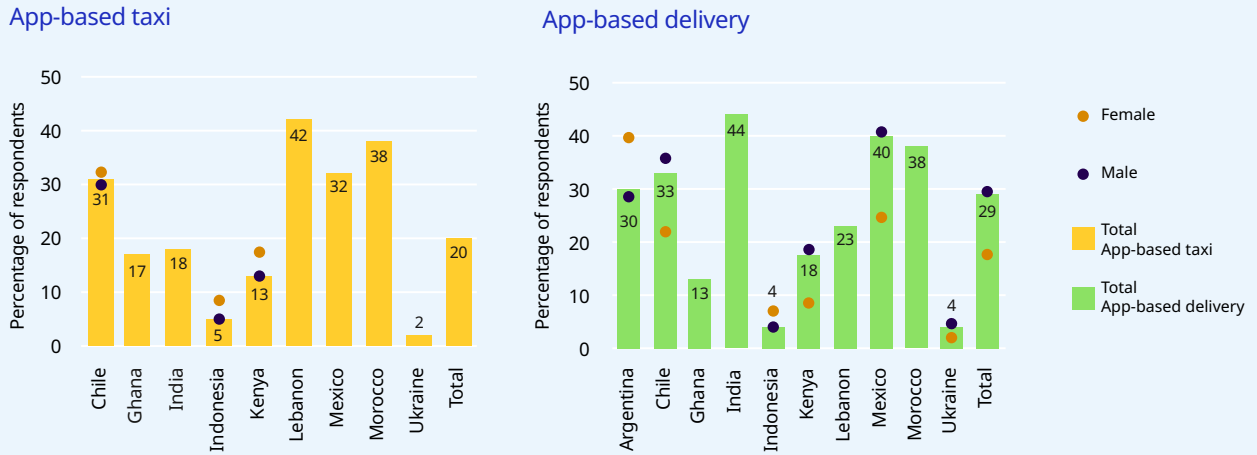


► **Figure 4.27 Proportion of respondents on freelance platforms who have experienced discrimination, by development status and sex**



Source: ILO global survey of workers on freelance platforms (2019–20).

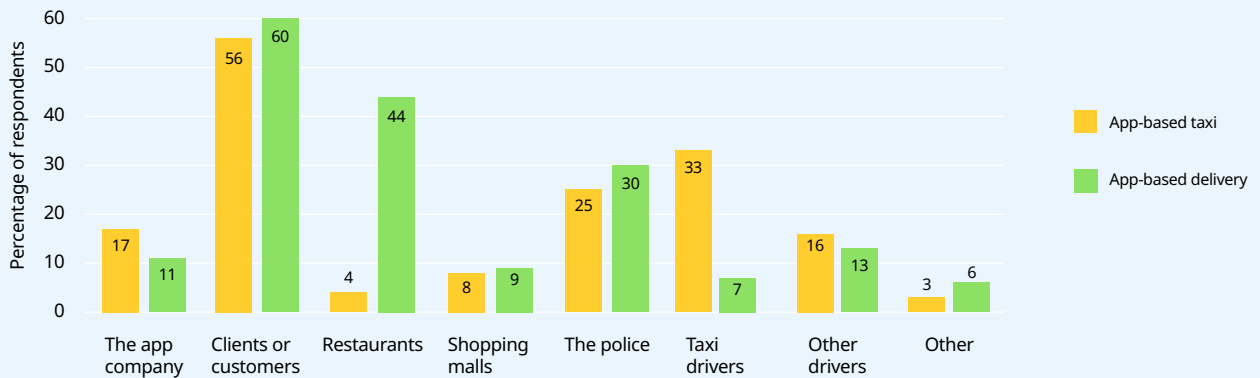
► **Figure 4.28 Proportion of respondents on app-based taxi and delivery platforms who have experienced or witnessed discrimination or harassment, by sex and country**



**Note:** Disaggregation by sex is displayed only for countries where the sample contained at least ten female respondents.

**Source:** As for figure 4.3.

► **Figure 4.29 App-based taxi drivers and delivery workers having faced or witnessed discrimination or harassment from different entities**



**Note:** Figures presented refer to workers who reported that they or one of their colleagues had suffered discrimination or harassment while performing work.

**Source:** As for figure 4.3.



**A lot of discrimination, especially from restaurants and some customers. We are discriminated against because of our clothes and for the work we do – Male respondent on app-based delivery platform Rappi (Mexico)**

**I was involved in a sexual harassment situation by a passenger, where he offered money for sex – Female respondent on app-based taxi platform Uber (Chile)**

Among those subject to or having witnessed such instances, a majority in both sectors reported discrimination or harassment from the client (see figure 4.29). Many platforms provide workers' names and photographs to clients, which can allow for discriminatory client behaviour. This has also been observed during the COVID-19 pandemic, when customers have cancelled drivers belonging to certain communities (Chapman and Frier 2020). Some workers also reported instances of

discrimination from the platforms as well, across both the app-based taxi (17 per cent) and delivery (11 per cent) sectors. Furthermore, in the delivery sector, 44 per cent of respondents reported that they had faced or witnessed discrimination or harassment from restaurants or businesses where they would go to collect food or goods (see figure 4.29). In the taxi sector, 33 per cent reported that they had faced or witnessed discrimination or harassment from other taxi drivers.

**I am stressed by the harassment by traditional taxi drivers who accuse us of driving them into poverty – Male respondent on app-based taxi platform Uber (Lebanon)**

**We face discrimination in restaurants, they don't let us sit inside, can't even use their washrooms, or have any water – Male respondent on app-based delivery platform Uber Eats (India)**

## ► Conclusion

This chapter, drawing on data from around 12,000 workers, has shown that digital labour platforms (both online web-based and location-based) are the main source of income for many workers. The majority of workers on these platforms are young (35 years and below) and highly educated. While women, including those with care responsibilities, also find work on digital labour platforms, fewer women than men participate in such platforms, especially in developing countries. Furthermore, location-based platforms, especially in the delivery sector, provide an important source of work opportunities for migrants in some countries. The motivations of workers to perform tasks on online web-based platforms are often to complement pay from other income sources, job flexibility or preference to work from home, while on location-based platforms they engage due to a lack of alternative employment opportunities as well as better pay when compared to other available jobs.

While digital labour platforms provide opportunities to workers, a granular focus on working conditions and the organization of work on the platforms reveals that they present many

challenges to worker well-being. Many workers, on both online web-based and location-based platforms, reported that they would like to work more than they do but that factors such as excess labour supply and unavailability of enough work or well-paid tasks prevent their greater engagement. In addition, workers from developing countries often face additional barriers due to exclusion by platforms or clients, or fee charges that exceed their financial capacities.

Earnings on online web-based platforms are influenced by time spent on unpaid tasks. Workers on these platforms, on average, work 27 hours in a typical week (including both paid and unpaid work), with one third of their time, or eight hours, spent on unpaid work. The average hourly earnings (paid and unpaid time) on these platforms are US\$3.4, and half of these workers earn less than US\$2.1 per hour. While findings on the existence of a gender pay gap are mixed, there is a clear gap between the earnings of workers in developing and developed countries. Earnings on these platforms are also impacted by intense competition, high commission charges and non-payment for tasks completed.

Hourly earnings (including waiting times) vary across countries in the app-based taxi and delivery sectors, and tend to be higher than in the traditional sectors. Bonuses and incentives offered by platforms attract a large number of workers. This has led to an oversupply of workers, which has implications for earnings in both the app-based and traditional sectors. Earnings are also affected by order cancellations, and, particularly in the taxi sector, loan repayments, declining bonuses and commission charges. Most workers in the taxi and delivery sectors work long hours and endure high work intensity to meet their income needs and targets for bonuses.

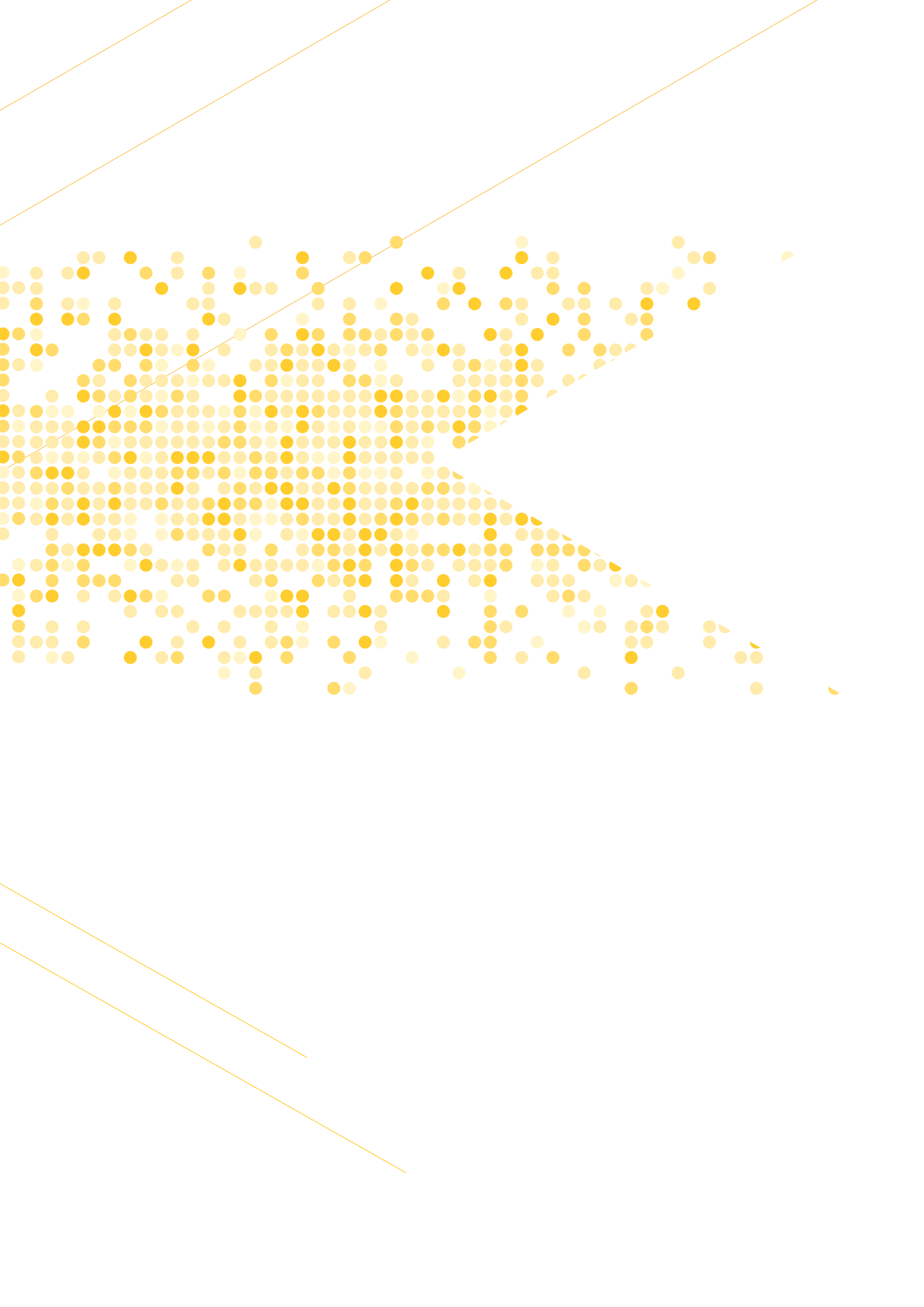
Social protection stands out as a major concern, with the majority of workers on digital labour platforms not having coverage. This has serious implications for workers, in particular workers on location-based platforms who are exposed to occupational safety and health risks. This situation has further been exacerbated since the outbreak of the COVID-19 pandemic.

The everyday experience of workers is defined by platform design and algorithmic management. Platforms use algorithms to match workers with clients or customers, for which worker ratings are decisive. These ratings are also algorithmically determined, using a number of metrics which include acceptance and rejection rates. This practice ultimately limits workers' freedom and ability to make work-related decisions, and particularly to reject assigned work. Furthermore, client-generated ratings and evaluations are not always fair or transparent, and negative ratings can lead to deactivation of worker accounts. Despite such serious implications for workers, they have limited awareness about options available for dispute negotiation or resolution. Moreover, new forms of platform and client monitoring and control limit the flexibility and autonomy of workers. Workers on online web-based platforms also report that the platforms or clients require them to be available at specific times or to install software that captures their work habits and times. For workers on location-based platforms, algorithmic management is shaping scheduling, working hours and access to future work, while the worker is penalized for task cancellations.

Platforms are redefining the relationship between formal education and access to work, as worker profiles, ratings and reputation are now important for accessing work. Varying degrees of vertical and horizontal skills mismatches can be observed on digital labour platforms. A high proportion of workers on freelance and competitive programming platforms reported that their skills were a good match with the tasks they were performing, and many were undertaking tasks that were potentially related to their field of study. Skills mismatch is, however, quite prevalent for those engaged on microtask platforms, where a highly educated workforce is engaged to perform tasks that tend to require few or no specific skills. Similarly, a sizeable proportion of workers on platforms in the taxi and delivery sectors are highly educated. This points to a substantial challenge related to skills mismatches and underutilization of worker skills, especially in developing countries.

The findings also reveal that a considerable proportion of workers on digital labour platforms experience discrimination or harassment. In some instances platform design exacerbates exclusion, in particular of workers from certain developing countries, by preventing workers from accessing higher-paid tasks on online web-based platforms, or through features on location-based platforms that allow for discriminatory behaviour by clients. Such a situation is intensified by inherent structural problems, particularly for female workers on location-based platforms, where they may be exposed to insecurity, violence and harassment.

The challenges brought to the fore on digital labour platforms through the granular exploration of platform worker experience underscore the urgency of re-evaluating platform work while it is still in its nascent stages. Its potential for creating decent work opportunities for workers, including women, persons with disabilities, migrant workers, and indigenous and tribal peoples, among others, is significant. Addressing the challenges highlighted in this report will be vital for transforming digital labour platforms to ensure that they become and continue to evolve as sustainable and inclusive avenues for decent work opportunities.





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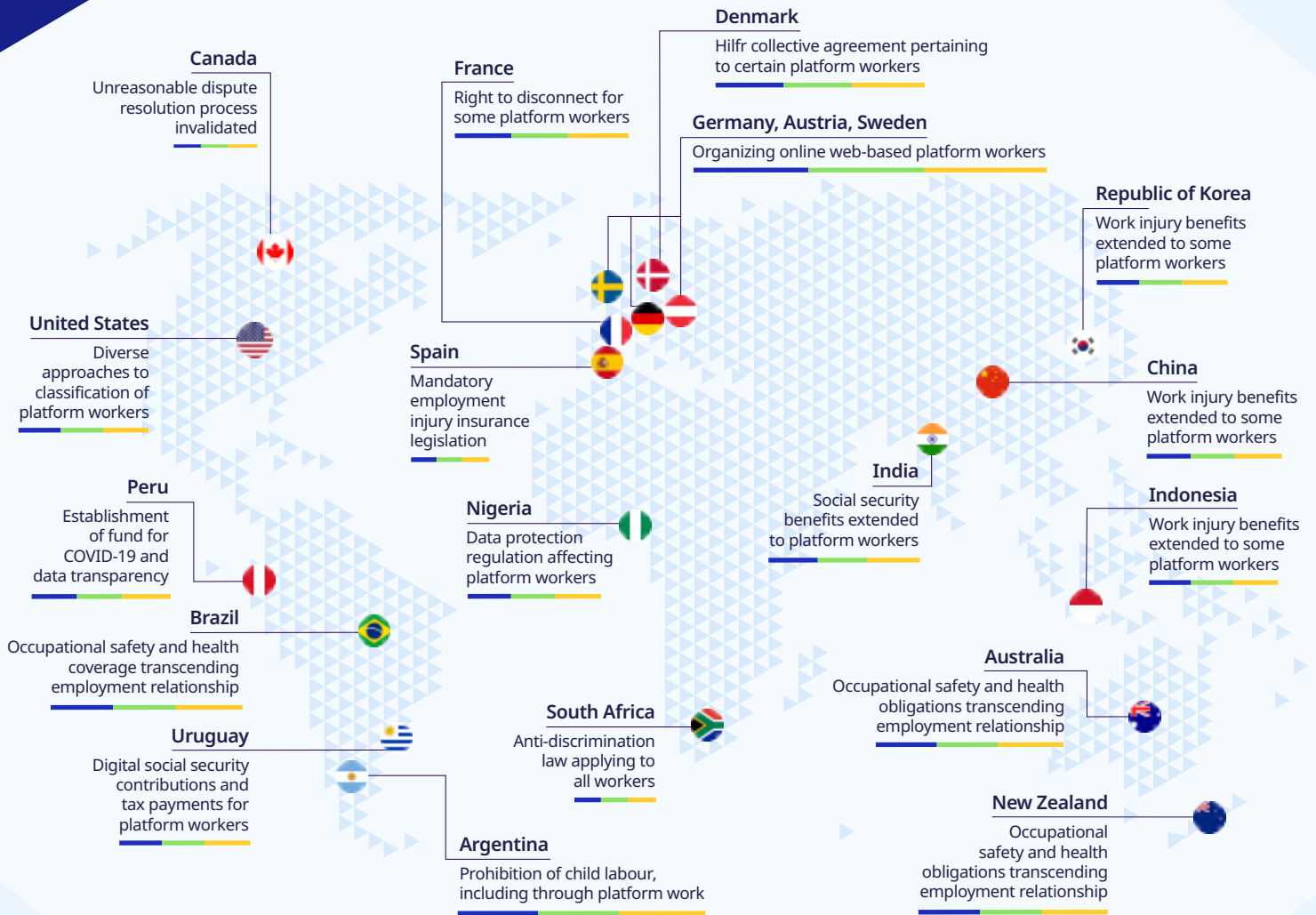


5

**Ensuring decent  
work on digital  
labour platforms**

# Ensuring decent work

## Diverse practices of regulation for platform workers across the world



### Fundamental principles and rights at work

- ▶ Freedom of association and collective bargaining
- ▶ Elimination of discrimination
- ▶ Elimination of forced labour
- ▶ Effective abolition of child labour

### Labour standards in other ILO instruments of general application

- ▶ Occupational safety and health
- ▶ Social security
- ▶ Job creation policies
- ▶ Access to labour inspection

### Labour standards in other ILO instruments relevant to platform work

- ▶ Payment systems
- ▶ Fair termination
- ▶ Access to data and privacy
- ▶ Clear terms and conditions
- ▶ Job mobility
- ▶ Access to dispute resolution

## ► Introduction

Digital labour platforms provide new opportunities for economic growth and job creation, and have the potential to contribute to the realization of the United Nations Sustainable Development Goals, particularly Goal 8, which is to “[p]romote inclusive and sustainable economic growth, employment and decent work for all”. These platforms have also facilitated the inclusion of many businesses, including small and medium-sized enterprises, into the digital economy, thereby improving their productivity and enhancing their market base.

As previous chapters have shown, the conditions of work are unilaterally determined by the platforms, which raises a number of challenges. The broad discretionary power over working conditions exercised by many platforms is apparently not yet adequately counterbalanced by initiatives from governments and other stakeholders (Kapczynski 2020; Berg et al. 2018; Agrawal et al. 2013). The regulatory capacity of the platforms, mediated through service agreements, is buttressed by the ability of the platforms to rapidly collect extensive data on workers and their performance at low cost. This information can be harnessed so as both to craft rules that best benefit the platforms and to give effect to them.

The extensive power of the platforms to monitor and control work relationships can, at least in principle, be exercised so as to create more and better jobs. For example, both individual and aggregated worker data might be used to reduce excessive working hours, improve safety and health at work, identify discriminatory hiring patterns, or maintain efficient and accurate payment systems (Rogers 2018). However, observations in the previous chapters have suggested that this is not yet generally the case.

This chapter examines the regulation of digital platforms, focusing on labour and social protection. It covers not only regulation emanating from the platforms themselves but also initiatives from governments and the social partners – employer and worker organizations. The chapter is informed

by major ILO instruments and declarations, including the ILO Centenary Declaration for the Future of Work which calls on ILO Member States to: “Promot[e] sustained, inclusive and sustainable economic growth, full and productive employment and decent work<sup>1</sup> for all through ... policies and measures that ... respond to challenges and opportunities in the world of work relating to the digital transformation of work, including platform work” (ILO 2019a, III C (v)).

This chapter first considers how digital labour platforms use service agreements to set the rules for work mediated through them (section 5.1). In section 5.2 the discussion turns to what “decent work” for platform workers means, grounding the analysis in ILO Conventions and Recommendations. As there are frequently gaps between the current rules for digital platform work and what they should be from a decent work perspective, section 5.3 proceeds to examine initiatives from governments and the social partners that try to bridge those gaps.

Before turning to the substantive discussion, one important point about scope must be made. The chapter is grounded in a broad concept of “regulation” and is not confined to legislation and court judgments only. “Regulation” does not refer here simply to a rule made by a government (Black 2002, 28; see also Black 2001). The inquiry extends beyond state-based rules and processes to interventions by social partners and other non-state actors that “influence the course of events” (Parker and Braithwaite 2003, 119). So, regulation in the sense used here encompasses not only legislation, court judgments, decisions of administrative agencies and government policy statements, but also collective agreements, multi-lateral accords, codes of conduct, contracts and even informal arrangements. They all influence, or at least potentially influence, the “regulatory space” (Hancher and Moran 1998; Scott 2001) in which digital labour platforms operate.

Of course, this is not to say that these different forms of regulation are equivalent; they have

<sup>1</sup> See also the ILO Declaration on Social Justice for a Fair Globalization, adopted by the International Labour Conference at its 97th Session, Geneva, 10 June 2008.

different levels of authority and different modes of enforcement. Regulations emanating from governmental institutions, including legislatures, administrative agencies and courts, prevail over private regulation through contracts. Collective agreements, too, generally prevail over individual contracts, although the precise legal status of collective agreements varies from jurisdiction to jurisdiction. And depending on the jurisdiction, all of these may have binding legal effects whereas codes of conduct and informal arrangements may not.

There are two major advantages to examining regulation in a broad sense, rather than state-based laws alone. First, the significant role of

digital labour platforms in setting the rules through terms of service agreements becomes apparent since such agreements are a form of (contractual) regulation. This role is examined in section 5.1 based on an analysis of terms of service agreements of 31 major digital labour platforms (see [Appendix 2](#)). Second, the analysis reveals the important part that organizations of workers and employers have played, sometimes together with governments, in developing responses to platform work through social dialogue and tripartism.<sup>2</sup> These responses have taken the form, for example, of innovative collective agreements and initiatives of labour law reforms. These initiatives are examined in sections 5.2 and 5.3.



## 5.1 Regulation by digital labour platforms: Terms of service agreements

As described in Chapter 2, the way in which digital labour platforms draft their terms of service agreements, and implement them through technology, determines the working conditions of the workers they engage and mediate (Berg et al. 2018; De Stefano 2016; Pasquale 2015). This section examines the effect of those agreements, drawing on a sample of 31 major digital labour platforms (online web-based and location-based) that has been compiled and analysed by the ILO ([Appendix 2B](#)).

### 5.1.1 Platform terms of service agreements

On most digital labour platforms, terms of service agreements serve as the first major point of regulatory engagement between the workers and the platform. The agreements invoke the law of contract to give legal effect to their stipulations (Berg et al. 2018).

On most digital labour platforms, terms of service agreements tend to be “contracts of adhesion”.

This means that their content is determined unilaterally by the platform; the other party is able only to accept or refuse. There is little or no negotiation (Berg et al. 2018). The users, both workers and clients, must accept the terms of service before accessing the platform or building their profiles on it (Pasquale 2015). While adhesion contracts offer great efficiencies and savings through the reduction of transaction costs, the frequent inequality of bargaining power can lead to unfair terms (Kessler 1943; Hillman and Rachlinski 2002). Moreover, as Chapter 2 demonstrated, the obligations set out in the terms of service are frequently monitored and assessed through algorithmic management and workflow tools provided by the platforms (see also Duggan et al. 2020; Rosenblat and Stark 2016).

While the wording of terms of service agreements often differs from platform to platform and from jurisdiction to jurisdiction, there is an underpinning business logic (Sanders and Pattison 2016). The business organization aspects of the agreements (including the ratings) have been analysed in Chapter 2. This section of the report builds on

<sup>2</sup> On the significance of tripartism in regulatory theory, see the pioneering work of Ayres and Braithwaite (1992, 54–100).



## Terms of service agreements tend to be “contracts of adhesion”.

that analysis by considering how the agreements seek to define the nature of the relationship between platforms and workers, to construct methods of control, and to shape the dispute resolution process in favour of the platforms.

First, the characterization of the contractual relationship between the platform and the worker as other than one of employment is a striking feature of many terms of service agreements. The ILO analysis in [Appendix 2](#), table A2.3, reveals various expressions used to avoid the creation of employment relationships. The workers engaged through the platforms are described as “independent contractors”, “independent third-party providers”, “drivers”, “captains”, “delivery partners”, “driver partners”, “freelancers”, “click-workers”, “hackers”, and so on (see also Malin 2018; Xie 2018; Rodríguez Fernández 2017; Pinsof 2016; De Stefano 2016; Aloisi 2016).

**You acknowledge and agree that this Agreement is not an employment agreement (under labor law, tax law and/or social security perspectives). Therefore, you understand that this Agreement shall not, in any means, be interpreted as an industrial relation between you and Grab – Terms of Use, Grab (Indonesia), English version as of 30 November 2020**

However, the ILO surveys of app-based taxi drivers and delivery workers show that some platform workers do not understand their work in these terms. The consequence of this characterization is that, assuming it is upheld as valid in legal proceedings, platform workers are denied many employee entitlements. These entitlements may include minimum pay, maximum working hours, leave and some social security entitlements, all of which may be (depending on the jurisdiction) related to the establishment of an employment relationship (Berg et al. 2018; De Stefano 2016).

Second, on the basis that they have excluded the application of these entitlements through

their terms of service agreements, in regulating conditions pertaining to remuneration, hours of work and other issues, the platforms are largely unconstrained by labour protection legislation. And notwithstanding the denial of an employment relationship, terms imposed on workers by many service agreements frequently entail restrictions on worker autonomy and flexibility. These restrictions are enforceable through potential account deactivation (Lobel 2016). They were discussed at length in Chapter 2 and in section 4.3.1.

For instance, the ILO analysis shows that many online web-based platforms include in their terms exclusivity or “non-circumvention” clauses binding workers and their clients to the platform for up to two years (see also section 2.5). Some microtask platforms also limit the use of automated processes to perform tasks (see section 2.4). Location-based platforms stipulate matters such as route instructions, working time and GPS tracking. Both online web-based and location-based platforms commonly have terms regulating the acceptance and rejection of work and the manner of communication between the worker and client or customer, as well as customer service etiquette (see Chapter 2, [Appendix 2B](#)). These rules are monitored through data received by the platforms and processed by algorithms. For example, in delivery service agreements, the worker may be required to be reachable by the client at any time during delivery and may be subject to real-time tracking.

Some of these terms are quite explicable (such as customer service etiquette and limitations on excessive working hours) or indeed essential (as in terms designed to ensure customer safety or prevent discriminatory action by the worker). But others may be unduly restrictive.



## ▶▶ The platforms are largely unconstrained by labour protection legislation.

Third, many agreements inhibit the capacity of workers to contest the decisions of platforms, including automated decisions. Many terms of service agreements are not fully accessible or readily comprehensible to workers. This means that they may not be aware of their rights and obligations. For instance, some platforms do not systematically link terms of service documentation to their homepage or the FAQ (frequently asked questions) sections, and link to them only mid-way through the sign-up process (Berg et al. 2018). The ILO analysis shows that terms of service agreements tend to be long, sometimes exceeding 10,000 words, and that they are complicated and legalistic (see also Venturini et al. 2016; Bygrave 2015; Bakos, Marotta-Wurgler and Trossen 2014).

The extent to which these complexities give rise to a lack of comprehension among platform workers varies according to the platform, the sector and the workers' education level. Some terms of service are relatively abstruse; others are set out in relatively accessible and clear language. Accordingly, empirical research can produce widely divergent findings. In the ILO global and country surveys of workers conducted on online web-based platforms, 80 per cent of workers read the terms of service, and of those, around 79 per cent indicated that they understood the content. About 48 per cent of the location-based workers (42 per cent of the app-based taxi drivers and 51 per cent of the app-based delivery workers) reported that they had seen a copy of the terms of service. Out of those, 70 per cent said that the terms and conditions were clear to them, while others said they were unclear, or that they did not remember or had not read them.

The terms of service agreements are not static; their content can vary over time as the platforms make unilateral changes within the scope of the contract. A majority

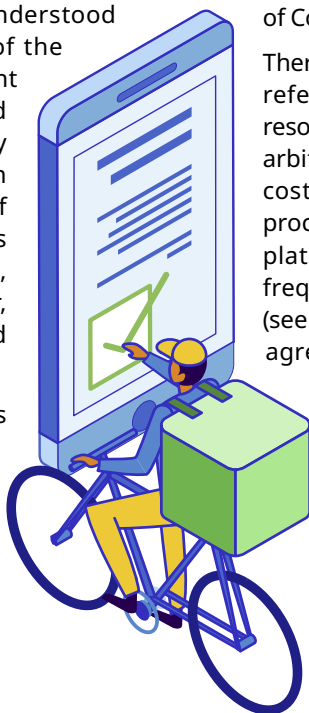
of the terms of service agreements in the ILO analysis stipulate that the platforms reserve the right to amend terms at any time, the amendments becoming effective upon posting online. Keeping track of these amendments is often not an easy task for platform workers.

Furthermore, a prominent feature of the contracts analysed by the ILO is that the methods of dispute resolution are, to the extent legally possible, chosen by the platforms. These are methods which are cost-effective to the platforms and/or maximize their prospects of success. As the terms of service are contracts of adhesion, it is of no avail for the platform worker to seek legal advice in a bid to negotiate a different arrangement which might better reflect both parties' preferences.

What are these dispute resolution methods? One is that, where the jurisdiction permits, arbitration is generally preferred over court proceedings for matters involving contractual disputes, statutory entitlement claims, discrimination complaints and safety and health at work incidents. For example, the Upwork terms of service examined in the ILO analysis refer disputes to Judicial Arbitration and Mediation Services (JAMS), a private arbitration provider, with respect to users located within the United States. The terms of service of Amazon Mechanical Turk and HackerEarth commonly refer disputes to arbitrators selected by the American Arbitration Association, while Uber commonly refers them to the International Chamber of Commerce.

There is nothing inherently untoward about referring disputes to alternative dispute resolution processes, since mutually agreed arbitration is often more efficient and less costly than immediate access to judicial proceedings. Indeed, for workers on some platforms, internal grievance processes frequently provide satisfactory outcomes (see section 4.3.2). In several of the service agreements, the platforms agree to pay part or all of the arbitration fees.

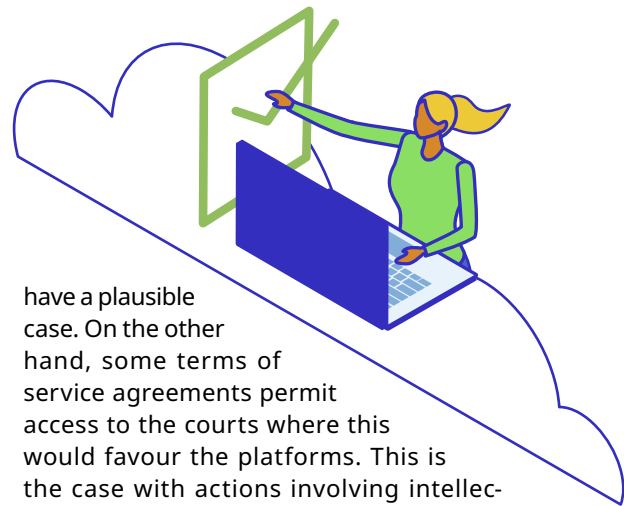
This may be because mandatory employment arbitration must satisfy certain criteria so as to permit the enforcement of statutory rights (Halegua 2016).



However, some terms of service agreements purport to require a worker to use an institution (arbitration or court) based in another country. And in some jurisdictions, notably the United States, judicial proceedings examining substantive claims can often be excluded altogether through clauses in agreements, provided certain procedures are complied with. This is highly problematic: Estlund (2018) shows that workers in the United States are much more likely to be deterred from pursuing their claims by mandatory arbitration clauses than they are if the ordinary court system is available to them (see also Colvin 2019; Halegua 2016). Reviewing the empirical evidence, Estlund (2018, 707) comments: “It now appears that, by imposing mandatory arbitration on its employees, an employer can ensure that it will face only a miniscule chance of ever having to answer for future legal misconduct against employees”.<sup>3</sup>

Moreover, private arbitration does not contribute to the development of the law the way judicial decisions generally do (through binding precedents, guiding cases or other influential judgments). This development is particularly important given that the state-based regulation of digital platforms is inchoate. Furthermore, private arbitration can lack transparency; it is generally not open to the public the way that court processes normally are.

Another method used in service agreements to shape dispute resolution is to prevent “class” or “representative” actions where these are provided for in national legislation. These are actions in which many plaintiffs (for example, platform workers) with a similar interest in the subject matter of a legal proceeding are represented collectively against a common defendant (for example, a platform). This creates economies of scale for the plaintiffs by enabling multiple claimants to pool resources and launch proceedings which might be too complex or expensive for any one individual. Prohibiting class actions, although economically rational from the perspective of the platforms, may have the effect of suppressing disputes because individuals give up, even if they



have a plausible case. On the other hand, some terms of service agreements permit access to the courts where this would favour the platforms. This is the case with actions involving intellectual property rights. Access to the courts in intellectual property cases enables platforms to access powerful judicial remedies (such as injunctions) which are beyond the powers of private arbitrators.

The extent to which the digital labour platforms shape rules and processes therefore depends on how much regulatory space governments and judges are prepared to yield to them. The responses of legislatures, courts and stakeholders to the impact of these terms of settlement clauses are considered further in section 5.3.9 below.

### 5.1.2 Will the digital labour platforms improve terms of service by themselves?

Before considering regulation external to the platforms, it is important to first consider ways in which the platforms themselves have sought to address many of the problems currently emanating from their business practices, including their service agreements. In January 2020, many of the prominent digital labour platforms, including Uber, Deliveroo and Grab, signed the World Economic Forum Charter of Principles for Good Platform Work (WEF 2020). The Charter of Principles commits the platforms to diversity and inclusion; safety and well-being; flexibility and fair conditions; reasonable pay and fees; social protection; learning and development; voice and participation; and data management.

<sup>3</sup> While this comment applies to employees, the reasoning applies to any worker, including self-employed, since they are similarly denied access to the courts through the mandatory arbitration clauses.

The Charter also provides that “[t]erms and conditions should be transparent, clearly stated, easily understandable, and provided to workers in an accessible form” (Clause 3.1) and that “[p]latforms should promote a culture of transparency and human accountability across use of algorithms, and ensure that fairness and non-discrimination are a priority in the design of algorithms” (Clause 3.4). These statements reflect a significant recognition of the problems and suggest a preparedness to address them.

Many of these Charter commitments could be further elaborated or adapted. For instance, to regulate through social dialogue rather than unilaterally, other affected parties (such as worker organizations) could also be represented among the drafting signatories. The Charter calls for “multi-stakeholder cooperation”, but at the time of writing other affected parties were not yet represented among the drafting signatories. The analysis in the next section suggests that it is not enough to leave the platforms alone in the regulatory space. Other actors need to shape it as well.



## 5.2 Regulating digital platforms for labour and social protection: What should be the goals?

If the rules set by platforms need to be complemented and counterbalanced by other regulatory initiatives, what sort of interventions are appropriate? The remainder of this chapter explores this question from both normative and descriptive perspectives. It examines the principles and standards that should shape interventions and then looks at real world examples, drawing on innovations from governments, courts and social partners in many different jurisdictions.

The discussion concentrates on the regulation of work. There are, of course, many other relevant fields – for example, competition (antitrust), tax, intellectual property, corporate governance, privacy,

data and, increasingly, the law of the internet and of algorithms. It is not possible within the bounds of this report to provide a comprehensive account of these matters; an overview of their application to digital platforms is provided in section 6.3.2.

A broad range of jurisdictions is surveyed, identifying initiatives from various economic, institutional and social contexts. Given this diversity, it is not claimed that any one initiative – even where it is particularly successful – can be “transplanted” into a different context and operate in a similar way. Such transplantations often take unexpected turns (Teubner 1998), at least without careful adaptation to local circumstances (Berkowitz, Pistor and Richard 2003).

Nor is it possible to explain at length the particular settings in which each initiative has taken effect; that would bog down the discussion in the details of many national peculiarities. The purpose of the survey is to point to developments as potential stimuli for future actions, not as models to replicate or impose. These future actions should be shaped by their domestic and multilateral contexts and by the involvement of the relevant social partners. They will also need to address the limitations in many of the initiatives that will be identified – for, as will be seen, some are yet to have a clear or lasting impact.

### ► Worker

The term “worker” has different legal meanings in different jurisdictions. As mentioned in Chapter 1, the term is used in the broad sense contemplated by the ILO instruments discussed, in light of comments of the ILO supervisory bodies. Unless otherwise specified, the term includes both the employed and the self-employed (including independent contractors).

Much of the literature concerning labour protection and digital labour platforms deals with whether a worker is employed by a platform, is self-employed, or, in some jurisdictions, falls into an intermediate category (Cherry and Aloisi 2017; Waas et al. 2017). This is because the terms of service agreements generally deny that platform workers are employees, preventing access to statutory entitlements such as minimum wage and some forms of social security. This gives rise to what is commonly described as the “misclassification issue”.

The misclassification issue is a critical one and is often discussed early on in publications about the regulation of platform labour. However, the analysis in this chapter will defer that discussion because it will first focus on standards that are, from the perspective of the ILO Constitution and ILO instruments, applicable to all workers irrespective of their contractual status. These are principles for which the touchstone is simply *working* (Countouris 2019). In other words, as the expression “decent work” suggests, the principles apply not only to employment relationships but to all work arrangements, including work mediated through digital labour platforms undertaken in a self-employed capacity.

There have been many scholarly and stakeholder efforts to identify which labour and social security protections should apply to all workers (see, for example, Risak and Lutz 2020; Rodríguez Fernández 2019; Xie 2018; Davidov 2014; Fudge, McCrystal and Sankaran 2012; Freedland and Countouris 2011; Supiot 2001; and the Frankfurt Declaration on Platform-Based Work<sup>4</sup>). Those efforts inform this chapter. However, the analysis is primarily grounded in the “decent work” concept as stated in the ILO’s Centenary Declaration for the Future of Work and the Declaration on Social Justice for a Fair Globalization, as well as Goal 8 of the Sustainable Development Goals. Other international instruments are also directly relevant but a proper examination of them is beyond the scope of this chapter.

“Decent work” principles apply not only to employment relationships but to all work arrangements, including work mediated through digital labour platforms.

### 5.2.1 Labour standards for all working people: ILO instruments

The decent work objectives in the key ILO declarations connect to the ILO Conventions and Recommendations as well as its Constitution. They make clear that certain fundamental principles and rights apply to all working people. In particular, it is well established that the principles and rights set out in tables 5.1 and 5.2 apply to all workers. This would include workers howsoever described engaged through digital labour platforms (De Stefano and Aloisi 2019).

Table 5.1 lists the ILO fundamental principles and rights at work, consisting of eight fundamental Conventions. To cite a recent statement by the ILO Committee of Experts on the Application of Conventions and Recommendations (CEACR): “the full range of fundamental principles and rights at work are applicable to platform workers in the same way as to all other workers, irrespective of their employment status” (ILO 2020h, Para. 327).

The labour standards in table 5.2, while not included in the fundamental rights and principles at work, are also critical to the provision of decent work; the ILO supervisory bodies have stated that they, too, apply to all workers.

<sup>4</sup> <http://faircrowd.work/unions-for-crowdworkers/frankfurt-declaration/>.

► **Table 5.1 Decent work for platform workers: Fundamental principles and rights at work applicable to all workers, irrespective of contractual status**

Fundamental principles and rights	Scope of application of Conventions and Recommendations
Freedom of association and effective recognition of the right to collective bargaining	The Freedom of Association and Protection of the Right to Organise Convention, 1948 (No. 87), provides that “[w]orkers [...] without distinction whatsoever, shall have the right to establish and, subject only to the rules of the organisation concerned, to join organisations of their own choosing” (Art. 2). This includes the self-employed (see ILO 2012, Para. 53; ILO 2018b, Paras 328–330, 387–389). The Right to Organise and Collective Bargaining Convention, 1949 (No. 98), provides that all workers should enjoy protection against discrimination (including victimization and retaliation) on the basis of their union activities and employer interference in their organizations. All workers, including platform workers, should also enjoy the right to bargain collectively. <sup>1</sup>
Non-discrimination and equal remuneration	Both the Equal Remuneration Convention, 1951 (No. 100), and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111) (which applies to “employment and occupation”) apply to “all workers, both nationals and non-nationals, in all sectors of activity, in the public and the private sectors, and in the formal and informal economy” (see ILO 2012, Paras 658, 733).
Elimination of forced labour	The Forced Labour Convention, 1930 (No. 29), and its Protocol of 2014, as well as the Abolition of Forced Labour Convention, 1957 (No. 105), are applicable to “all workers in the public and private sectors, migrant workers, domestic workers and workers in the informal economy” (see ILO 2012, Para. 262).
Elimination of child labour	The Minimum Age Convention, 1973 (No. 138), and the Worst Forms of Child Labour Convention, 1999 (No. 182), cover all branches of economic activity and all types of employment or work regardless of employment status (which includes self-employment) as well as informal employment in both the formal and informal economy (see ILO 2012, Para. 339).

<sup>1</sup> Articles 5 and 6 contain qualifications concerning the armed forces and the police, as well as public servants engaged in the administration of the State. See also ILO 2012, Para. 168; ILO 2018b, Para. 1285; and Direct Request (CEACR) – adopted 2019, published 109th ILC Session (2021) Right to Organise and Collective Bargaining Convention, 1949 (No. 98) – Belgium (Ratification: 1953) (which specifically refers to platform workers). The CEACR had a diverse debate and discussion on collective bargaining rights of self-employed workers in 2016 with respect to Ireland. In its consensual conclusion the “committee suggested that the Government and the social partners identify the types of contractual arrangements that would have a bearing on collective bargaining mechanisms” [Individual Case \(CAS\) – Discussion: 2016, Publication: 105th ILC Session \(2016\)](#).

The ILO Constitution<sup>5</sup> and Conventions impose binding obligations on Member States that ratify them. They do not bind individual enterprises or workers directly, although many of them still illuminate good practice. Recommendations provide non-binding guidelines. They are primarily directed at Member States, although they may

also contain provisions relevant to employers, workers and their organizations. Member States, working with organizations of employers and workers, incorporate the principles and obligations into their domestic law, adapting them to national conditions. For example, they may pass a law on anti-discrimination consistent with the

<sup>5</sup> In the 1998 Declaration on Fundamental Principles and Rights at Work, the International Labour Conference declared that “all Members, even if they have not ratified the Conventions in question, have an obligation arising from the very fact of membership in the Organization to respect, to promote and to realize, in good faith and in accordance with the Constitution the principles concerning the fundamental rights which are the subject of those Conventions”.

► **Table 5.2 Decent work for platform workers: Other key labour standards applicable to all workers irrespective of contractual status**

Labour standards	Scope of application of ILO instruments
Occupational safety and health	The Occupational Safety and Health Convention, 1981 (No. 155), “applies to all branches of economic activity” and to “all workers” in these branches (Arts 1 and 2). Other key occupational safety and health instruments include the Protocol of 2002 to the Occupational Safety and Health Convention, 1981; and the Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187) (see also ILO 2009, Para. 33; ILO 2017b). The Violence and Harassment Convention, 2019 (No. 190), also applies to all workers (including jobseekers and ex-workers) (Art. 2) and addresses violence and harassment involving third parties (Art. 4). These Conventions deal not only with physical harm but with psychological health, which may be particularly at risk as a result of online activities or isolation. The standards establish a defined set of responsibilities with regard to the creation and maintenance of a safe and healthy working environment. The ILO Centenary Declaration for the Future of Work also recognizes that safe and healthy working conditions are fundamental to decent work.
Social security	The Social Security (Minimum Standards) Convention, 1952 (No. 102), and other ILO social security instruments set minimum benchmarks for the protection of economically active persons, including the self-employed (see ILO 2019b). These benchmarks pertain to sickness, medical care, disability, maternity, employment injury, unemployment and old age, and include support for family members. The Social Protection Floors Recommendation, 2012 (No. 202), calls for a set of basic social security guarantees pertaining to essential healthcare and basic income security. These should ensure “universality of protection, based on social solidarity” throughout the life course (Para. 3).
Employment and job creation policy	The Employment Policy Convention, 1964 (No. 122); the Employment Policy (Supplementary Provisions) Recommendation, 1984 (No. 169); and the Transition from the Informal to the Formal Economy Recommendation, 2015 (No. 204), are relevant to all workers, including the self-employed and those in informal economies (see ILO 2020h, Para. 29).
Labour inspection	The principal relevant instruments which apply to the protection of workers and conditions of work are the Labour Inspection Convention, 1947 (No. 81); the Protocol of 1995 to the Labour Inspection Convention, 1947; and the Labour Inspection Recommendation, 1947 (No. 81). Certain limited exceptions apply: for example, the armed forces may be excluded (see also ILO 2006, Paras 44–49).

constitutional arrangements in their countries. Further regulatory forms of incorporation, depending on the topic covered by the instrument, include collective agreements, arbitration awards and court decisions.

In some cases (such as unemployment benefits, employment policy and labour inspection) the responsibility for implementing the standards in ILO instruments falls on governments, rather than digital labour platforms (although the latter could be required to contribute to a particular benefit scheme). In most cases, though, giving effect to the Conventions and Recommendations entails regulation which requires digital labour platforms

to act (or refrain from acting) in a particular way. Thus, digital labour platforms should, for example, be prohibited from impairing freedom of association (such as through adverse treatment of union organizers). They should be prevented from discriminating between workers on protected grounds such as sex or race (including by relying on an algorithm they have generated). They should not be permitted to engage workers involuntarily or below minimum working age. And they should be required, so far as is reasonably practicable, to ensure that workers are not exposed to unsafe and unhealthy working conditions, or to violence and harassment.

While these obligations can be stated simply in the abstract, the practical implications can be more difficult to specify. One major problem is that, as is the case with many contemporary business models (Goldman and Weil 2020; ILO 2020i; Weil 2014), digital labour platforms often interpose a party – such as a client, passenger or customer – between themselves and the workers (a form of “fissuring”). This provides the basis for an argument that the platforms are not responsible for the acts of that third party. Thus, where a passenger refuses to accept a driver engaged through a digital platform because of their race, or where a driver is injured through the acts of the passenger, the platform can allege that it has breached no obligation; it is the third party who has.

One answer to this problem is to impose responsibility by linking it not to a particular kind of contractual relationship, but to the capacity to materially *influence* outcomes (Johnstone and Stewart 2015; compare Goldman and Weil (2020) on the analogous concept of a “controlling employer” in the United States). Other legal formulations which extend responsibility beyond a direct contractual relationship include “permit to work”,<sup>6</sup> “involved in a contravention”,<sup>7</sup> and “ensure the safety and health of persons ... who may be affected by any undertaking”.<sup>8</sup> Many jurisdictions also provide for shared liability between a principal and a subcontractor, particularly at a sectoral level, in relation to wages and sometimes social security; China and several Latin American countries provide examples (Zou 2017a; ILO 2016; Cooney, Biddulph and Zhu 2013). The appropriate formulations vary from jurisdiction to jurisdiction.

The underlying point is to use language which ensures that a digital platform upholds labour rights where it is “in charge”.<sup>9</sup> Such language need not impose excessive responsibility – it can be qualified by well-known expressions such as “so far as is reasonably practicable”. This directs attention to the practical work arrangements that can be shaped by the platform.

## 5.2.2 Convention principles that could be adapted to all digital labour platform workers, irrespective of their status

The fundamental principles and rights, and standards set out in tables 5.1 and 5.2 do not exhaust the elements of decent work that regulation of digital labour platforms could aim to protect. There are further other standards that, while not as unequivocally rooted in ILO instruments, are applicable to all working people, and are important requirements of just working conditions for platform workers (Berg et al. 2018; Johnstone et al. 2012). The standards set out in table 5.3 are derived from ILO instruments which, while sometimes limited to specific categories of workers (such as waged employees, domestic workers, homeworkers or workers engaged through private employment agencies), give expression to principles that address the problems identified in earlier chapters (compare in relation to the European Union (EU), Kilhoffer et al. 2020; Cherry and Poster 2016).

Job mobility is relevant here because of the use of exclusivity or “non-circumvention” clauses and because of the lack of portability of ratings systems – the incompatibility of metrics used by the major platforms tends to lock workers into a single platform (Prassl 2018; De Stefano 2016). Both of these aspects were discussed in Chapter 2. A partial response to this second problem would be to develop interoperability mechanisms between platforms to enable platform workers to carry their ratings, work and financial histories across platforms in order to access work, and to also use them to access social security (Schmidt 2017). There is therefore a close link between portability of data and job mobility.

6 See, for example, The Child and Adolescent Labour (Prohibition and Regulation) Act, 1986 (India), section 3.

7 See, for instance, Fair Work Act, 2009 (Australia), section 550 (see also Johnstone and Stewart 2015).

8 See, for instance, Workplace Safety and Health Act, 2009 (Singapore), section 14 (in relation to “principals”, defined in section 4).

9 See the analysis of Prassl (2018, 101–102), who advocates a “functional” approach to assigning responsibility. See also Fudge (2006, especially 622–625); Davies and Freedland (2006); Prassl (2015); Prassl and Risak (2016).

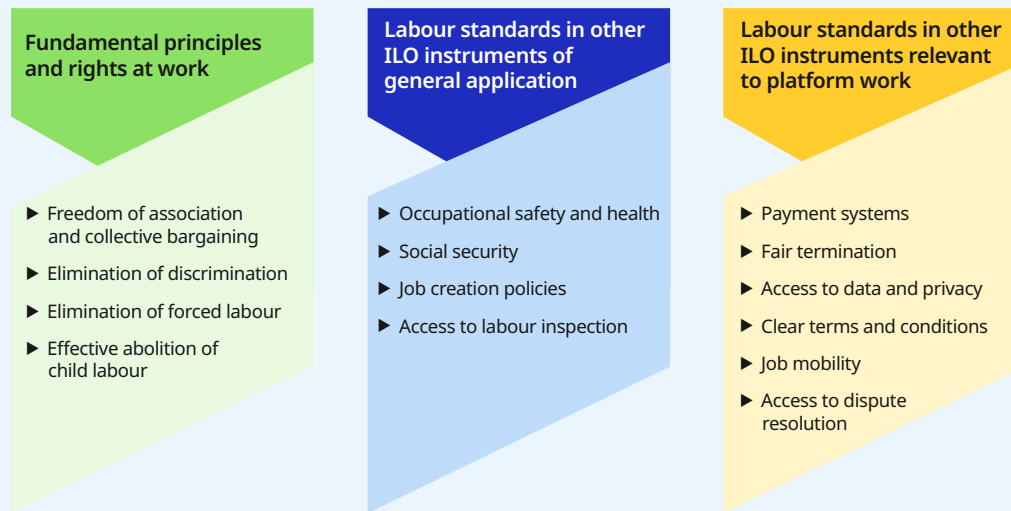


► **Table 5.3 Further elements of decent work for platform workers: Convention principles that could be adapted to all digital labour platform workers, irrespective of contractual status**

Labour standards	Comment on the application of ILO instruments
Payment systems	The principles in the Protection of Wages Convention, 1949 (No. 95), pertaining to: payments in legal tender; direct payments to workers; free disposition of wages; prohibition of improper deductions and bonds; regularity and timeliness of payment; full payment upon termination of the work contract; payment records; and information as to applicable pay rates, are all relevant to work organized through digital labour platforms. So are prohibitions preventing private employment agencies from charging fees, set out in Article 7 of the Private Employment Agencies Convention, 1997 (No. 181), a Convention of broad application. These principles need to be adapted to deal with specific characteristics of platform work, such as automatic monitoring, evaluation and rejection of work by the platforms' algorithms.
Fair termination	While the Termination of Employment Convention, 1982 (No. 158), is limited to the employment relationship, the core principle that a work relationship should not be terminated arbitrarily or unjustly is pertinent to arrangements between a digital labour platform and a worker, at least where arrangements have been ongoing and are likely to continue. <sup>1</sup>
Access to data and privacy	The processing of personal data by digital labour platforms should respect workers' privacy, a principle recognized in Article 6 of the Private Employment Agencies Convention, 1997 (No. 181). <sup>2</sup> The related Private Employment Agencies Recommendation, 1997 (No. 188), provides that "[m]easures should be taken to ensure that workers have access to all their personal data as processed by automated or electronic systems, or kept in a manual file" (Para. 12(2)). These measures should include the right of workers to obtain and examine a copy of any such data and the right to demand that incorrect or incomplete data be deleted or corrected.
Clear terms of engagement	The principle that workers should be informed of the terms and conditions of their engagement "in an appropriate, verifiable and easily understandable manner" and preferably in written contracts appears in Article 7 of the Domestic Workers Convention, 2011 (No. 189), and in Paragraph 5 of the Home Work Recommendation, 1996 (No. 184). <sup>3</sup> Again, that principle can be adapted to apply to contractual arrangements with digital labour platforms.
Job mobility	Job mobility here refers to the capacity of workers to leave their engagement with one platform and commence work with another, or to work independently of a platform. This principle is reflected in Article 1 of the Employment Policy Convention, 1964 (No. 122), which refers to "freely chosen employment". <sup>4</sup>
Grievance and dispute resolution	While there is no specific ILO Convention dealing comprehensively with grievance and dispute resolution processes, <sup>5</sup> such processes are essential to give effect to the standards in ILO instruments. Guidance on grievance processes can be found in the Examination of Grievances Recommendation, 1967 (No. 130). Adapting these processes to digital labour platforms would include enabling workers to contest ratings and evaluations. Grievance and dispute resolution processes should be efficient, fairly constituted, and accessible to the parties (Budd and Colvin 2008; Ebisui, Cooney and Fenwick 2016).

<sup>1</sup> Note the concept of "valid reason" in the Convention. <sup>2</sup> See also the ILO Code of practice on the protection of workers' personal data. <sup>3</sup> See also the Private Employment Agencies Recommendation, 1997 (No. 188), Para. 5. <sup>4</sup> See also the Employment Policy (Supplementary Provisions) Recommendation, 1984 (No. 169). The issue may be thought of as a "right to change jobs", an aspect of the right to work found in other international instruments such as the International Covenant on Economic, Social and Cultural Rights (ICESCR). <sup>5</sup> Note the Voluntary Conciliation and Arbitration Recommendation, 1951 (No. 92).

► **Figure 5.1 Decent work elements applicable to all platform workers irrespective of contractual status**



Source: ILO elaboration.

The contention that the standards in table 5.3 constitute elements of decent work for all workers, notwithstanding their varied scope of application in the Conventions, is reinforced by the fact that they are present in international human rights treaties<sup>10</sup> and in other regulatory contexts where there is information asymmetry and inequality of bargaining power. For example, consumer protection legislation, which also deals with contracts of adhesion imposed by a firm on individuals, likewise contains provisions dealing with fair pricing, fair termination rules, privacy, access to data, transparency of terms and dispute resolution.<sup>11</sup> In many jurisdictions, consumer protection law – which is being regularly amended to respond to transactions via digital platforms – will thus be a useful additional source for designing appropriate regulatory frameworks for platform work.<sup>12</sup>

Figure 5.1 draws the discussion in this section together; it sets out the principles and rights necessary to provide decent work for all platform workers. The nature of platform work means that several relatively novel questions arise about how to implement the principles and rights. For example, how should the right to collective bargaining be conceived in the context of online web-based platforms? How do principles relating to fair termination and data access operate in the context of ratings and deactivation? How do principles concerning health and safety at work apply in the context of contest-based and competitive programming platforms? These are issues that need to be discussed in future.

10 See the general comment on Article 7 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) [https://tbinternet.ohchr.org/\\_layouts/15/treatybodyexternal/Download.aspx?symbolNo=E%2fC.12%2fGC%2f23&Lang=en](https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolNo=E%2fC.12%2fGC%2f23&Lang=en), in particular Para. 4 on scope, and general comment on Article 6 by the Committee on ESCR (E/C.12/GC/18). See also Para. 6 of the general comment on Article 6 of ICESCR, which extends “decent work” to a somewhat broader notion and extends the rights to independent workers [https://tbinternet.ohchr.org/\\_layouts/15/treatybodyexternal/Download.aspx?symbolNo=E%2fC.12%2fGC%2f18&Lang=en](https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolNo=E%2fC.12%2fGC%2f18&Lang=en).

11 See, for instance, the numerous EU directives dealing with unfair contract terms, unfair pricing, consumer rights and digital transactions, including: Council Directive 93/13/EEC; Directive 98/6/EC; Directive 2005/29/EC; Directive 2011/83/EU; Directive 2019/2161.

12 See, for example, Superintendencia Industria y Comercio, Colombia, Order of 5 September 2019 concerning the digital labour platform Rappi S.A.S.

### 5.2.3 Elements of decent work closely tied to employment: The Employment Relationship Recommendation, 2006 (No. 198)

There are other issues that are elements of decent work but are not, as far as ILO instruments are concerned, applicable to all workers; they are tied to the employment relationship. Examples include working time,<sup>13</sup> certain forms of leave (such as maternity leave)<sup>14</sup> and rates of remuneration. Platform workers who are genuinely self-employed, with the capacity to generate their own income through their entrepreneurial activities, generally will not fall within the scope of these instruments.

It is therefore crucial for legal systems to have sophisticated principles for determining whether a worker is in fact an employee, however they are described in terms of service agreements. This is especially so where employment is disguised as self-employment in order to avoid the obligations which flow from employment protection legislation. Moreover, in many jurisdictions, rights which should, according to the ILO instruments, apply to all workers are often in practice limited only to employees in laws and judicial decisions. Thus, the practical impact of the rules determining employment status often extends well beyond their implications for employment-related ILO standards.

The ILO Employment Relationship Recommendation, 2006 (No. 198) (see discussion in ILO 2016; ILO 2020h), provides that the determination of the existence of an employment relationship,

should be guided primarily by the facts relating to the performance of work and the remuneration of the worker, notwithstanding how the relationship is characterized in any contrary arrangement, contractual or otherwise, that may have been agreed between the parties. (Para. 9)

▶▶ In many jurisdictions, rights which should, according to the ILO instruments, apply to all workers are often in practice limited only to employees in laws and judicial decisions.

This principle is known as the “primacy of facts” (ILO 2020h, Para. 230). Recommendation No. 198 provides systematic guidance concerning the concepts (such as subordination and dependence) and indicators (such as control and integration) that legal authorities can use to establish an employment relationship (Paras 12 and 13). It also refers to the possibility of presuming or deeming certain workers to be employees (Para. 11).<sup>15</sup>

In a recent review of the application of the Recommendation to digital labour platforms, CEACR has highlighted the very diverse approaches taken in jurisdictions around the world toward determining the employment status of platform workers, emphasizing that the “primacy of facts” principle should be invoked when making this determination: “this new form of work calls for a thorough examination of the real conditions of such workers, which is not always readily apparent” (ILO 2020h, Para. 326).

It follows that, from the perspective of Recommendation No. 198, the clauses in the terms of service agreements stating that the relationship between the worker and the platform is not one of employment are not definitive. While judges may, depending on the jurisdiction, give weight to a contractual term defining the relationship as purely commercial, where the primacy of facts principle is applicable it is the *actual operation* of the arrangements which will frequently determine the true nature of the contractual relationship (see also Waas et al. 2017). This issue is further discussed in detail in section 5.3.10.

<sup>13</sup> There is a short discussion on working time and the gig economy in ILO 2018c, Paras 750–757.

<sup>14</sup> Article 2 of the Maternity Protection Convention, 2000 (No. 183), provides that this Convention applies to all employed women, including those in atypical forms of dependent work.

<sup>15</sup> See, for example, section 2750.3 Labor Code (California); *Code du travail* (France) Arts 7311-1 and 7311-3; Dockès 2019.

## 5.2.4 Employment-related standards and self-employed platform workers

Even if it is the case that platform workers are truly self-employed, does this mean that principles relating to working time, leave and remuneration should have no application to them? Certainly, genuine entrepreneurs engaged in commercial relationships are understood to control their own hours and to bear the financial risk of failure or success. Nonetheless, there are cogent arguments for maintaining that some degree of regulatory intervention on remuneration and working time may be appropriate for the self-employed engaged through platforms, even if it were of a different nature to that governing employment relationships (Goldman and Weil 2020).

First, in relation to working time and leave, excessive hours are a risk to health and safety (see ILO 2018c). It was made clear above that occupational safety and health regulation should be applicable to all workers, not just employees.

Second, in relation to remuneration (see Cherry and Poster 2016), inadequate pay naturally undermines effective payment systems (which, as mentioned in table 5.3, should apply to all working people). A clear base pay rate is a prerequisite for identifying non-compliance with payment obligations, such as where a bond has been imposed or there has been an improper deduction (Prassl 2018). Furthermore, inadequate pay arrangements may impose social security costs on the wider society, since social security systems should be universal. For example, they may mean that a worker needs to supplement income through unemployment benefits. In addition, they may mean that there is insufficient contribution to schemes such as retirement pensions, where these are linked to work income. And inadequate pay can drive excessive working hours.

There are many aspects of decent work which should extend to platform workers, irrespective of their contractual status.

The precise mode of setting remuneration standards for self-employed platform work is controversial and complex, and the problem is compounded by the diversity of arrangements under which platform work can be carried out. One possibility would be to enable platform workers who are genuinely self-employed to organize and negotiate base rates with the platforms through collective bargaining. However, as discussed below, competition regulation in many jurisdictions is a major obstacle to this approach, so the specification of applicable pay rates by governments is increasingly being considered.

Summing up the discussion so far in this part of the chapter, there are many aspects of decent work which should extend to platform workers, irrespective of their contractual status. The question of whether conditions which have historically been closely tied to employment contracts, such as working time and remuneration, should be extended to genuine self-employed platform workers is more vexed. The discussion has suggested reasons for addressing these matters while recognizing the distinctiveness of genuine self-employment.

The next section moves from questions of principle to examining developments in practice around the world.





## 5.3 Achieving decent work: Regulatory responses to platform work

In most of the jurisdictions examined here, the regulatory response to platform work is in flux. Draft legislation is being keenly debated. Court judgments conflict or are under appeal. The impact of newly formed associations of platform workers remains uncertain. It may take several more years before the contours of labour and social protection for these workers take shape. Nonetheless, there have already been some landmark developments.

The discussion here follows the structure of the previous section. It begins by considering initiatives linked to the principles set out in figure 5.1, then examines the various approaches to determining the employment relationship and the issues of working time and remuneration. The final section discusses the potential applicability of labour standards in trade agreements to platform work. For considerations of space, not all issues are examined here in depth, such as employment creation and labour inspection.

### 5.3.1 Freedom of association, collective bargaining and other forms of social dialogue


As discussed above, all workers, including platform workers, enjoy the rights to organize and engage in collective bargaining under Conventions Nos 87 and 98. ILO Member States that ratify Convention No. 87 are required to permit “[w]orkers and employers, without distinction whatsoever, ... to establish and, subject only to the rules of the organisation concerned, to join organisations of their own choosing without previous authorisation” (Art. 2). This Convention enables workers to associate in a broad variety of organizational forms (ILO 2018b, Para. 502).

ILO Member States that ratify Convention No. 98 are required to establish machinery to protect workers against anti-union discrimination and to take measures to encourage and promote voluntary negotiation between employer and worker associations. Conventions Nos 87 and 98 establish one particular form of social dialogue – collective bargaining – as a fundamental right of all workers. This could be used to enable workers to negotiate matters such as minimum rates of pay, the design of fair ratings systems, dispute resolution systems and reasonable working hours, irrespective of how the workers are classified contractually. Consensual agreements between platforms and representative organizations of workers could also ease the regulatory burden on States, which would not need to legislate and enforce to the same degree.

The approach reflected in Conventions Nos 87 and 98 contrasts markedly with that used by the digital labour platforms, as platforms tend to regulate unilaterally. The Conventions, on the other hand, are directed at enabling regulatory collaboration through social dialogue, including, when governments are involved, tripartism. Further, the concept of collective bargaining set out in the Collective Bargaining Convention, 1981 (No. 154), involves “*negotiations ... for (a) determining working conditions and terms of employment; and/or (b) regulating relations between employers and workers ...*” (Art. 2) (emphasis added).

If the platforms seem hesitant to engage in social dialogue, what has been the response of workers and governments? In many jurisdictions, platform workers have been associating in order to improve their conditions, whether through negotiations

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 The regulatory response to platform work is in flux.

with the platforms or by lobbying governments to adopt new regulatory initiatives. Sometimes platform workers join established unions;<sup>16</sup> sometimes they form new organizations.<sup>17</sup>

**From the union point of view, what we demand as a union is protection for this work. A minimum assurance both in terms of income and in terms of labour law: occupational safety, work accidents, security. Well, if the driver crashes, that would be a work accident. – App-based driver, President of the Uber V Región Trade Union, the first formally registered trade union of app-based drivers (Chile)**

Whatever their structure, worker associations need to engage in social dialogue with the platforms and regulatory authorities if they are to achieve their objective of protecting the interests of their members. In principle, collective bargaining offers a way to reshape the terms of service agreements in a more equitable way, since it usually involves the conclusion of a binding legal instrument that has been negotiated rather than unilaterally designed (see, for example, Rogers 2018).

However, there are numerous difficulties in applying collective bargaining to platform workers under existing legal frameworks. The difficulties are especially acute for online web-based platforms because the workers are physically dispersed. A first set of obstacles is

legal. Many jurisdictions do not permit workers who are not in an employment relationship to bargain collectively. This is sometimes because collective bargaining laws do not extend to the self-employed (Beaudonnet, 2020).

But a more fundamental issue is that many competition (antitrust) laws prohibit the self-employed from engaging in coordinated negotiation on the basis that this would constitute a cartel (see, for example, Kilhoffer et al. 2020; OECD 2019c; Johnston and Land-Kazlauskas 2019; Lianos, Countouris and De Stefano 2019; Aloisi and Gramano 2018). This is problematic since some platform workers are genuinely self-employed but exhibit a comparable degree of economic dependence to employees (McCrystal 2014).<sup>18</sup>

The EU provides a prominent example of how competition law may inhibit collective bargaining by self-employed platform workers. Jurisprudence of the Court of Justice of the EU generally prohibits bargaining by genuinely self-employed workers who are considered as “undertakings” (Schiek and Gideon 2018).<sup>19</sup> However, the precise scope of the prohibition is uncertain and is currently being discussed by EU institutions.<sup>20</sup> Some EU Member States appear to allow some degree of collective bargaining by dependent self-employed workers; these include Italy, Germany and Spain (Kilhoffer et al. 2020). Two further recent examples of apparent inroads into this restriction have occurred in France and Ireland. In France, amendments

16 Such as IG Metall in Germany; Unionen in Sweden; Canadian Union of Postal Workers and Uber Drivers United (part of the United Food and Commercial Workers), both in Canada; and Independent Drivers Guild in New York (part of the International Association of Machinists & Aerospace Workers, United States).

17 Such as Asosiasi Driver Online (ADO) in Indonesia; Rider Union in Seoul; National Union of Professional e-hailing Driver partners (NUPEDP) in Nigeria; the Sindicato Independiente Repartidores por Aplicaciones (SIRA) in Mexico; the Asociación de Conductores Unidos de Aplicaciones in Chile; the Asociación de Conductores de Aplicaciones de Uruguay in Uruguay; Digital Taxi Forum in Kenya; United Private Hire Drivers in the United Kingdom; Rideshare Drivers United in California; Philadelphia Drivers in Pennsylvania; and NYC Taxi Workers Alliance in New York. Some of these associations participate in the International Alliance of App-Based Transport Workers.

18 While competition regulation has generally focused on product markets, leaving work regulation to govern labour markets, there is mounting evidence that the two are intertwined. Labour market concentration and other sources of labour power give rise to “monopsony” or “oligopsony”; one or a small number of firms are able to use a dominant labour market position and their power to dictate contractual terms, to reduce remuneration and other working conditions and to impede job mobility (Naidu, Posner and Weyl 2018).

19 See, for example, the decision of the European Court of Justice in Case C-413/13, *FNV Kunsten Informatie en Media*, ECLI: EU: C:2014:2411 (holding that collective bargaining by self-employed workers violated EU competition law). On the concept of “worker” under European law, see Countouris (2018).

20 See <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12483-Collective-bargaining-agreements-for-self-employed-scope-of-application-EU-competition-rules-for-details>.

to the Labour Code (*Code du travail*), which included the insertion of a specific title pertaining to self-employed platform workers,<sup>21</sup> accords those workers a right to collective action which is protected from retaliatory actions on the part of the platforms (such as contract termination). The amendments also guarantee the right to organize and to “assert collective interests” through unions (*faire valoir par son intermédiaire leurs intérêts collectifs*) although collective bargaining as such is not specifically mentioned (Kilhoffer et al. 2020). Ireland has passed the Competition (Amendment) Act 2017 which excludes certain categories of self-employed workers from its Competition Act in order to enable them to bargain collectively.

Outside the EU, some countries permit certain categories of self-employed workers to bargain collectively. In Canada, dependent contractors such as food couriers have been held to have this right.<sup>22</sup> Other examples include Japan (Waas et al. 2017) and Australia (McCrystal 2014; the Australian provisions have been strengthened with effect from 2021). Moreover, in countries such as Argentina, there is no regulation on the issue, and this is widely understood to mean that there is no prohibition on self-employed workers organizing themselves for the improvement of their working conditions (Goldín 2020).

Despite these exceptions, competition law in many countries is thus either an actual or a potential impediment to enabling those platform workers who are self-employed to exercise their right to bargain collectively. This impedes solutions to issues such as pay, working time, evaluation and safety from being developed through this strong form of social dialogue. International work on reconfiguring the application of competition law so that it does not undermine bargaining by vulnerable self-employed workers is needed (for a sophisticated proposal in the American context, see

Kim 2020). This does not mean that the collective bargaining rights of the self-employed should be regulated in the same way as those of employees (Stewart and McCrystal 2019). The CEACR has highlighted tripartite consultations as a vehicle for adjusting collective bargaining processes so that they can apply to self-employed workers.<sup>23</sup>

But even if the competition law concerning self-employed workers can be addressed, national frameworks for collective bargaining can give rise to further difficulties. For example, many countries require the identification of a “bargaining unit” or one or more “representative unions” in order for collective bargaining machinery to operate.<sup>24</sup> These concepts are difficult to apply in the context of online web-based platforms, since the workforce is diffused across geographical and industry boundaries. The problem is especially acute in those systems where the law requires collective bargaining to occur predominantly at the level of an enterprise.

A second set of problems with the viability of collective bargaining concerns practical rather than legal obstacles. Platform workers often do not share a common workplace where they can physically interact and organize. Where they are able to unite, their organizations may be ephemeral, lack resources, structure and a clear focus, or outcomes which retain their members’ enthusiasm.

In countries with strong union movements and robust and flexible bargaining systems (Mundlak 2020), legal and practical obstacles to negotiating agreements for platform workers are being increasingly overcome, often with the assistance of established unions. In Denmark, an ingenious and groundbreaking collective agreement allowed freelance domestic or cleaning workers to take the option to transition to the status of employees (see box 5.1; Kilhoffer et al. 2020).

21 *Travailleurs utilisant une plateforme de mise en relation par voie électronique* (*Code du travail*, Arts L.7341-1 – 7342-11 introduced by Act No. 2016-1088 of 8 August 2016).

22 *Canadian Union of Postal Workers v Foodora Inc. d.b.a. Foodora*, 2020 CanLII 16750 (ON LRB) Para. 171.

23 See, for example, Observation (CEACR) – adopted 2017, published 107th ILC session (2018) Right to Organise and Collective Bargaining Convention 1949 (No. 98) – Netherlands (Ratification: 1993).

24 See, for example, Canada Labour Code Part I, Division 3.

► **Box 5.1 Collective bargaining: Denmark**  
***Hilfr and United Federation of Danish Workers (3F) Agreement***

In April 2018, the United Federation of Danish Workers (3F) signed a collective agreement with Hilfr, a Danish-owned digital labour platform which facilitates cleaning in private households. It has more than 200 active “freelance” workers, most of whom are young, with many being migrants.

The agreement concerns issues such as optional transition from freelance to employee status, insurance coverage for all workers, processes to deal with profiles and ratings, and dispute resolution (which controversially involves arbitration rather than access to the labour courts). The agreement initially operated successfully (Ilsøe 2020), with more than one third of the cleaning workers converted to employee status and thus enjoying higher wages and better leave entitlements, although most workers have not joined the union. However, as discussed in Chapter 6, this agreement has been criticized by the Danish Competition Council.

In situations where collective bargaining is not feasible (and often even when it is), platform workers often direct their efforts toward obtaining other regulatory interventions (Johnston and Land-Kazlauskas 2019; Wood, Lehdonvirta and Graham 2018; Rodríguez Fernández 2018). One approach involves working collaboratively with governments and platforms to improve working conditions (albeit without a binding collective agreement as an outcome). This may lead to voluntary measures.

For example, in the Republic of Korea, the Economic, Social and Labour Council, a presidential advisory body, has been providing a forum where relevant stakeholders (representatives of workers, employers and the government) have engaged in dialogue. The Council has set up multiple committees dealing with issues regarding digital platforms, including the Committee on the Digital Transformation and Future of Work. On 27 May 2020, the Committee announced a code of conduct that formulates guidelines for fair contract terms between workers and platform companies on matters such as payment method, fees, tax, non-discrimination, performance assessment programmes and dispute settlement.

In cases where the platforms do not wish to engage in dialogue, at least initially, platform workers increasingly engage in dispute actions such as strikes, demonstrations and litigation.

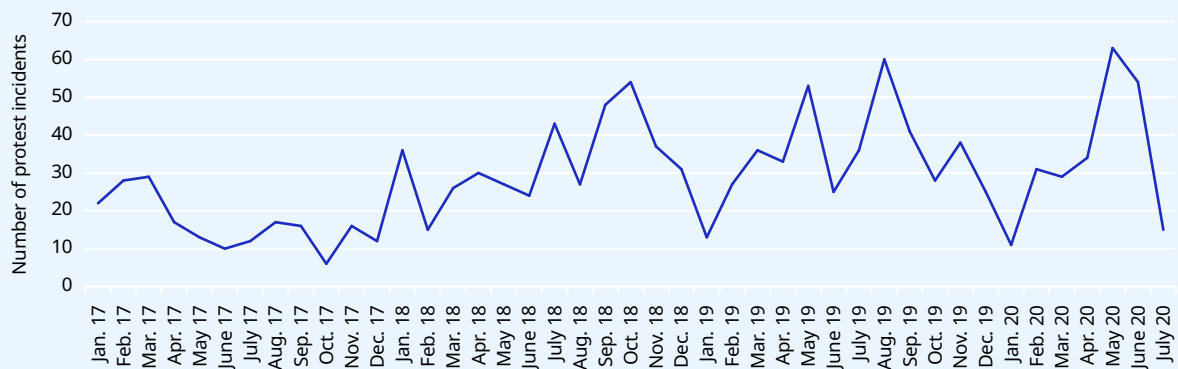
According to the Leeds Index of Platform Labour Protest (Bessa et al., forthcoming; see also Joyce et al. 2020), since 2015 there has been an increasing number of such actions around the world, with at least 1,253 occurring in 57 countries between January 2017 and July 2020 (see figure 5.2). Argentina, China, India, the United Kingdom and the United States each had over 100 protests. These actions continued even during the COVID-19 pandemic.

According to the Index, pay was by far the most prominent cause of dispute actions prior to the pandemic (64 per cent), followed by employment status (20 per cent), health and safety (19 per cent) and regulatory issues (17 per cent). Health and safety disputes constituted more than half the number of disputes since the pandemic started, with Latin America being particularly affected. The Index suggests that strikes are associated with pay issues, whereas litigation focuses on employment status and regulatory issues.

Around 80 per cent of dispute actions involve informal groups of workers. The involvement of trade unions (new or established) varied significantly according to the region, being much more common in Europe as well as Australia and New Zealand. In these regions, together with North America, legal actions against platforms (frequently relating to employment status) are much more common than in other parts of the world.



► **Figure 5.2 Number of protest incidents related to working conditions on digital labour platforms per month globally, January 2017 to July 2020**



Source: Bessa et al. (forthcoming, figure 1).

The ILO country and global surveys also show that the level of unionization is quite low among workers on both online web-based and location-based platforms, with 5 and 1 per cent of microtask and freelance workers respectively, and less than 3 per cent of app-based taxi drivers reporting being a member of a union, while almost none of the app-based delivery workers reported that they belonged to a union.

Protest actions such as strikes and demonstrations are often undermined by practical difficulties faced particularly by online web-based platform workers, essentially due to the physical dispersion of the platform workforce. Platform workers on location-based platforms have sought novel ways, mainly through “mass self-communication networks”, to increase their associational power (Woodcock and Graham 2020; Wood 2015). In the ILO interviews the representatives of unions and worker associations (see [Appendix 5](#), table A5.1) revealed that they adopt different strategies to organize workers and to bring about legislative changes. For example, the United Private Hire

Drivers Association in the United Kingdom organized a digital strike against Uber through its Twitter account, based on the idea of a “digital picket line” which workers would cross if they opened the app.<sup>25</sup> The ILO country surveys show that about 9 per cent of app-based taxi drivers and 3 per cent of app-based delivery workers have participated in a coordinated group action such as a protest, or demonstration, or logging out of the app, with noticeable differences across countries.

In the ILO country surveys, about 28 per cent of app-based taxi drivers and 33 per cent of app-based delivery workers were members of a social media group related to their work. Virtual groups have also been crucial to mobilizing delivery workers in Latin America (Hidalgo Cordero and Valencia Castro 2019; Ottaviano, O’Farrell and Maito 2019).<sup>26</sup> In Argentina, several couriers organized the first Latin American delivery platform workers’ strike through a social media group, calling on platform workers to position themselves in hotspots and accept and cancel requests from the platform in order to call

<sup>25</sup> ILO interview with representative of United Private Hire Drivers Association in the United Kingdom; the strike was organized in October 2018.

<sup>26</sup> ILO interviews with representatives of MAREA (Mancomunal de repartidores de aplicaciones, Chile), SIRAPPs (Sindicato de Repartidores de Aplicaciones, Mexico) and Niunrepartidormenos (Mexico).

## Health and safety disputes constituted more than half the number of disputes since the pandemic started.

attention to detrimental changes in the calculation of earnings.<sup>27</sup>

Another form of action is exemplified by unions in Austria, Germany and Sweden<sup>28</sup> that have established the Fair Crowd Work website.<sup>29</sup> This website provides analyses of platforms (including reviewing terms of service and comparing rates of payment), as well as information for platform workers who wish to join unions. One innovative feature of the website is that it collects information from workers and unions in order to review and rate the working conditions on different platforms (see also the discussion of Turkopticon in Silberman and Irani 2016).

Finally, worker organizations can lobby governments to prompt legislative change. In Costa Rica, an app-based drivers' association sought to respond to the problem of deactivations by advocating in favour of an independent administrative body for dispute settlement between app companies and drivers.<sup>30</sup> This association is attempting to incorporate this suggestion into a Bill, which at the time of writing was before the Costa Rican legislature.<sup>31</sup>

Whatever form of social dialogue and mobilization platform workers adopt, there needs to be an effective remedy in the event of retaliation against them for their union activities, as required under Article 1 of Convention No. 98 (De Stefano and Aloisi 2018). According to representatives of platform workers' associations in cities such

as Johannesburg (South Africa) and Concepción (Chile), the story is similar: the lack of effective protection against platforms deactivating or blocking the accounts of those who attempt to mobilize constitutes a powerful threat against collective action by app companies.<sup>32</sup> Locating this mechanism in labour law can be problematic where the scope of that law is confined to employment relationships.

### 5.3.2 Non-discrimination

As described in sections 4.2.2 and 4.5, there is evidence of discrimination and harassment in the platform economy, including a gender pay gap in certain location-based services and gender- and ethnicity-based exclusion from work opportunities on online web-based platforms in some countries. Many terms of service agreements (or related policies) studied in the ILO analysis contain prohibitions on discriminatory conduct and harassment, particularly in the taxi sector (see [Appendix 2B](#)). The Charter of Principles for Good Platform Work (WEF 2020) also contains a provision about diversity and inclusion: "Platforms should strive to be inclusive and usable by a diverse population of workers, and should encourage qualified participants from all national, religious, gender, sexual orientation and ethnic backgrounds, including persons with disabilities" (Principle 1.1).

These are important steps in combating discrimination, but they do not dispense with the need for other forms of regulation, particularly statutory and judicial measures that establish equality rights. For example, some contractual anti-discrimination clauses may apply only to the users, not the platforms. Or they may cover certain grounds of discrimination, such as race or sex,

27 ILO interview with legal adviser of App Personal, a platform workers' association in Argentina.

28 IG Metall (the German Metalworkers' Union), the Austrian Chamber of Labour, the Austrian Trade Union Confederation, and the Swedish white-collar union Unionen.

29 See <http://faircrowd.work/> for more details.

30 ILO interview with a representative of ACOPLATEC (Asociación de Conductores de Plataformas Tecnológicas y Afines), Costa Rica, 24 April 2020.

31 Proyecto de Ley Reguladora de los Servicios de Transporte de Personas por medio de Plataformas Tecnológicas, expediente legislativo No. 21587, presented on 11 September 2019.

32 ILO interview with representative of The Movement (app-based drivers), Johannesburg, South Africa, and with representative of Agrupación de Repartidores Penquistas (delivery workers), Concepción, Chile.

but not others, such as political opinion or union activities. They may not address the position of workers with family responsibilities,<sup>33</sup> an issue that has become more salient with the impact of the COVID-19 pandemic (see ILO 2020j).

Many jurisdictions do have well-developed anti-discrimination laws which are binding on both the platforms and the platform workers. Nonetheless, platform work poses difficult questions for equality regulation. Some of these are novel variations of long-standing and general questions relating to discrimination law, including: which grounds of discrimination should be prohibited? How should discrimination be determined? Which distinctions should not be considered discrimination? How should causation be understood (and who should prove what)? What sorts of relationships should be covered by discrimination law? Who should be responsible where discriminatory conduct is established? And, what remedies should be available?

To these, new questions can be added that relate specifically to the digital labour platforms. Barzilay and Ben-David suggest that major shifts in thinking about discrimination are needed in the context of platform work; for example, they propose shifting the goal of anti-discrimination law “from aiming to determine *who* is doing the discrimination to answering *how* the discrimination is being effectuated” (2017, 428). The role of algorithms merits particular attention: appropriately designed algorithms could be less discriminatory than humans – prone to stereotyping, prejudice and other cognitive errors as we are – but as they are designed by humans they can nevertheless “reproduce or even exacerbate structural biases” (Bornstein 2018, 570; see also Ajunwa 2020). This issue is considered further in section 6.3.2.

Jurisdictions vary greatly in the manner in which they address (or not) all these questions in their anti-discrimination law, so that giving effect to the anti-discrimination Conventions in the context of digital labour platforms will take different regulatory forms. Nonetheless, while no template can be provided, there are useful illustrations of

 In some jurisdictions, anti-discrimination rights have been more thoroughly developed in the context of employment relationships than in other forms of work relationship.

the implementation of general principles. As we have seen, the Conventions require *comprehensive* application of anti-discrimination law; it should not apply only to discrimination in employment.

The EU provides an example of this broader application in its treaties and directives (Kilhoffer et al. 2020; Countouris and Ratti 2018). Both platforms and workers are required to abide by non-discrimination norms in the context of both employment and self-employment, although different directives apply to employees and analogous “workers” on the one hand, and the self-employed on the other. The prohibited grounds of discrimination are extensive, including all the grounds set out in the ILO Discrimination (Employment and Occupation) Convention, 1958 (No. 111), as well as age, sexual orientation and disability.<sup>34</sup> Additionally, both direct and indirect discrimination are covered, as is the case with Convention No. 111. Direct discrimination refers to less favourable treatment because of a characteristic (such as sex) whereas indirect discrimination refers to an apparently neutral provision, criterion or practice which results in unjustifiable unequal treatment because of a characteristic.

However, the application of these provisions to digital labour platforms is problematic in several ways. First, in some jurisdictions (such as the United Kingdom), the implementation of anti-discrimination rights have been more thoroughly developed in the context of employment relationships than in other forms of work relationship (see, for example, Fredman 2015; Bamforth 2004). This inhibits independent contractors from resorting to anti-discrimination law.

<sup>33</sup> See the Workers with Family Responsibilities Convention, 1981 (No. 156).

<sup>34</sup> See, for example, the EU Charter of Fundamental Rights, Art. 21.

Moreover, the application of EU anti-discrimination regulation is made more challenging by the fragmented nature of work on digital labour platforms (Countouris and Ratti 2018; see also Barnard and Blackham 2017; Blackham 2018). Countouris and Ratti (2018) suggest that the way judges approach legal equality protections (such as whether they give broad or narrow interpretations) can be crucial in determining how adequately they address the complexity of platform work.

International human rights treaties<sup>35</sup> also contain broad prohibitions on discrimination, which could capture discriminatory practices in work undertaken through digital labour platforms. For example, in Latin America the Inter-American system of human rights has been developing a strong conception of the right to equality and non-discrimination. According to the Inter-American Court of Human Rights, “the principle of equality before the law, equal protection before the law and non-discrimination belongs to *jus cogens* [non-derogable international norms], because the whole legal structure of national and international public order rests on it and it is a fundamental principle that permeates all laws”.<sup>36</sup> In this scenario, equality and anti-discrimination rights prevail over domestic laws, including the law of contracts. A platform worker could ground a complaint against a platform on these norms, irrespective of the contractual form.

In South Africa, anti-discrimination law has an explicit constitutional support that binds private actors.<sup>37</sup> Grounds of discrimination include race, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth.<sup>38</sup> The Employment Equality Act, 1998, and the Promotion of Equality and Prevention of Unfair Discrimination Act, 2000, implement these

constitutional provisions comprehensively and include additional grounds, such as family responsibility and HIV status. Again, the application of these laws to digital labour platforms is potentially far-reaching, but as yet untested.

Another approach, which instead of focusing on the applicability of existing general discrimination law to platform work aims at sector-specific regulation, is reflected in a bill presented in 2020 by the executive power to the Argentine Congress, which states: “Companies must respect, in implementing their algorithms, the principle of equality and non-discrimination.”<sup>39</sup>

A final point concerns the application of anti-discrimination law to workers engaged outside the jurisdiction in which the platform is based. As discussed in section 4.2.1, workers located in developing countries can find themselves excluded from work on online web-based platforms. If a platform chooses to operate across several jurisdictions, it may be discriminatory to systematically disadvantage persons from a particular ethnicity or countries, among other factors, in accessing work.

### 5.3.3 Forced labour and child labour

While forced labour and child labour have not attracted the same attention as other matters connected with digital labour platforms, there is potential for them to occur. For example, De Stefano (2016) points to the potential for prison detainees and children to be engaged in crowdwork.

Many countries now couch their prohibitions of forced labour and (other than in limited circumstances) child labour in comprehensive terms such that platforms would be covered if they were used

35 See, for example, the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights, the International Convention on the Elimination of All Forms of Racial Discrimination, and the Convention on the Elimination of all Forms of Discrimination against Women.

36 Advisory Opinion OC-18/03 of 17 September 2003, Juridical Condition and Rights of Undocumented Migrants, Para. 101.

37 The Constitution of South Africa, Section 9(4).

38 The Constitution of South Africa, Section 9(3).

39 Translated from the Spanish text by the ILO: Proyecto de ley presentado por el Poder Ejecutivo Nacional, “Estatuto del Trabajador de Plataformas Digitales Bajo Demanda”, 6 May 2020.

to facilitate these abuses. An example of a broad prohibition is provided by Argentina's Prohibition of Child Labour and Protection of Adolescents Law:

This law applies to the work of persons under eighteen (18) years in all its forms. ... The work of persons under the age of sixteen (16) years is prohibited in all its forms, whether or not there is a contractual employment relationship, and whether or not the work is remunerated. The labour inspectorate must exercise its functions to achieve compliance with this prohibition.<sup>40</sup>

### 5.3.4 Occupational safety and health

This is an area in which many jurisdictions have transcended the employment relationship, focusing on the capacity to influence worker health and safety (Garben 2019). This thwarts blame-shifting and denial of responsibility based on a particular contractual form. The approach puts jurisdictions in a good position to craft obligations with respect to platforms, the workers engaged through them, and any other individual or entity involved in platform-mediated work processes. The responsibility of these actors is not absolute; it is bounded in many jurisdictions by the well-known phrase – stated in the Occupational Safety and Health Convention, 1981 (No. 155) – “so far as is reasonably practicable”.

For example, in Australia (Work Health and Safety Act, 2011) and New Zealand (Health and Safety at Work Act, 2015), the central concepts of legislation on safety and health at work are not “employer” and “employee” but “a person conducting a business or undertaking” (PCBU), a “worker” and “workplace”, all broadly defined (Johnstone and Stewart 2015). “A PCBU must ensure, so far as is reasonably practicable, the health and safety of: (a) workers engaged, or caused to be engaged by the person, and (b) workers whose activities in carrying out work are influenced or directed by the person, while the workers are at work in the business or undertaking” (Australia, 2011 Act,

▶▶ The regulation of occupational safety and health as it is conceived in ILO Conventions and in most national jurisdictions mandates collaborative workplace arrangements, rather than the unilateral development of policies.

section 19(1); see also New Zealand, 2015 Act, section 36(1)). A PCBU must also ensure, “so far as is reasonably practicable, that the health and safety of other persons is not put at risk from work carried out as part of the conduct of the business or undertaking” (Australia, 2011 Act, section 19(2); New Zealand, 2015 Act, section 36 (2)).

Workers, too, must take reasonable care for their own health and safety and “take reasonable care that [their] acts or omissions do not adversely affect the health and safety of other persons” (Australia, 2011 Act, section 28; New Zealand, 2015 Act, section 45). Thus, a driver would be required to take reasonable care of passengers allocated through a ride-hailing app. Another advantage of this approach is that it enables all workers, not just employees, to cease or refuse to carry out work where there is an imminent and serious danger to life or health (Australia, 2011 Act, section 84; New Zealand, 2015 Act, section 83; see also Convention No. 155, Art. 13).

This framework appears well placed to capture the various permutations of digital platform labour, either as supplemented with specific regulatory material (which the legislation permits) or with fairly minor amendments (see Stewart and Stanford 2017). It is able to address location-based aspects of platform work, as it is relatively straightforward to build on existing standards such as

<sup>40</sup> Translated from the Spanish text by the ILO: Prohibición del Trabajo Infantil y Protección del Trabajo Adolescente, Ley 26.390, Art. 2. This prohibition of work to persons below 18 years of age is also explicitly incorporated in the Argentinian Bill referred to above.

► **Box 5.2 Safety and health at work: Brazil**

“There is no doubt that [the defendant] centralizes and organizes, via a digital platform, the connection between workers and third parties (i.e. companies that supply food products and consumers).

It is the right of workers, in a broad sense, to have the risks inherent to their work reduced, through health, hygiene and safety standards (Federal Constitution, article 7, caput and XXII). Part of the responsibility for achieving this right lies with companies (ILO Convention No. 155, Arts 16/21; Decree No. 1254/94 of the Presidency of the Republic). Law 8080/90 ... states that health is a fundamental human right, whose full exercise must be promoted by the State, without excluding the responsibility of all, including companies (article 2, caput and paragraph 2). [In] a broad sense, the nature of the defendant’s activities imposes strict liability for any damages caused to service providers (Civil Code 927).”

**Source:** Translated from the Portuguese text by the ILO: Poder Judiciário ||| Justiça do Trabalho Tribunal Regional do Trabalho da 2ª Região 82ª Vara do Trabalho de São Paulo ||| TutAntAnt 1000396-28.2020.5.02.0082.

those applicable to transportation. For example, an undue emphasis on high acceptance rates (discussed in section 4.2.1) could be considered a safety risk if it led to drivers travelling at excessive speeds or carelessly. Similarly, gamification schemes (discussed in section 4.2.2) which push workers towards excessively long hours and high-intensity work could be considered injurious to health. And certainly, platforms need to take such measures, so far as is reasonably practicable, to protect drivers, particularly women, from violence and harassment.

At first glance, online web-based platforms pose more of a challenge, since the workplace is often the home. However, in the legislative model considered here, “workplace” is defined as “a place where work is carried out for a business or undertaking and includes any place where a worker goes, or is likely to be, while at work” (Australia, 2011 Act, section 8(1); New Zealand, 2015 Act, section 20(1)); this clearly covers working at home. The lockdowns prompted by the COVID-19 pandemic have required many workers to work from home (telework) and this has led to workplace health and safety authorities developing clearer standards for such work. For example, the State of Queensland,

Australia, has produced extensive materials for home-based work pertaining to location, hours of work, equipment, communication methods, and work performance and expectations.<sup>41</sup> These are readily adaptable to platform work.

Another form of regulatory intervention in the health and safety space comes from judicial interpretations which adapt existing legal principles to the platform labour market. Thus, in a recent judicial decision from São Paulo, Brazil, the court took a broad view of responsibility for health and safety, again transcending the employment relationship (see box 5.2).

The most influential platforms have indicated their preparedness to accept some responsibility in this field. Thus, the Charter of Principles for Good Platform Work (WEF 2020) provides that:

Platforms should have policies or guidelines in place, appropriate to the locations and modes of work, to help protect workers from health and safety risks, and should endeavour to protect and promote the physical and mental wellbeing of workers. Users/clients should acknowledge and adhere to the policies and guidelines (Principle 2.2).

41 See <https://www.worksafe.qld.gov.au/laws-and-compliance/workplace-health-and-safety-laws/specific-obligations/health-and-safety-for-working-from-home>.

While this is an important inclusion in the Charter, the regulation of occupational safety and health as it is conceived in ILO Conventions and in most national jurisdictions mandates collaborative workplace arrangements, rather than the unilateral development of policies.<sup>42</sup>

### 5.3.5 Social security

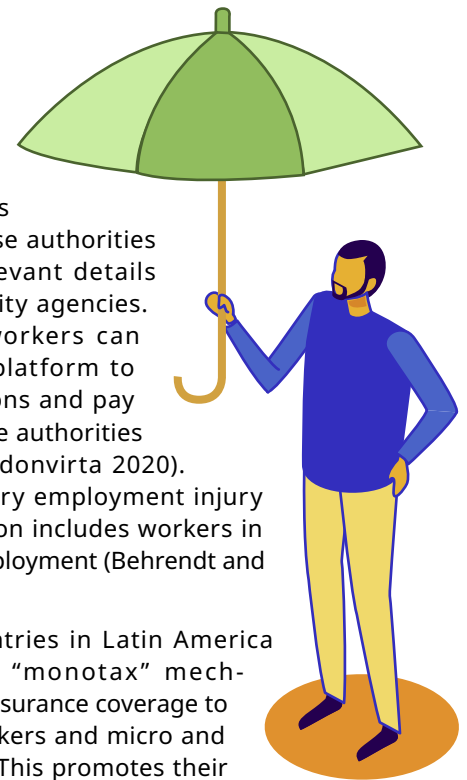
Strengthening social protection systems requires a combination of contributory (mainly social insurance) and non-contributory, tax-financed social protection mechanisms. While there is no “one-size-fits-all” solution, social security can be extended to platform workers by adapting policy, legal and administrative frameworks. Several countries have introduced innovations to enhance coverage of diverse forms of work, including where there are complex and unclear contractual relationships.

One area which illustrates the issues at stake is work injury. Where a platform worker is an employee of the platform (or at least a regular employee), the platform will in many jurisdictions be required to pay social insurance contributions or, where such coverage does not exist, insurance premiums for private injury compensation insurance covering that worker. However, where workers cannot establish an employment relationship they may be required to self-insure. As this is a significant financial burden for low-paid workers, many may fail to do so – with catastrophic consequences in the event of a major injury. Road traffic accidents and other work-related incidents are among the most prominent issues for location-based platform work.<sup>43</sup>

Many countries are developing solutions to address this issue, as well as adopting broader measures to extend social protection to platform workers. For example, in France, platforms are liable for the accident insurance fees of self-employed workers, depending on whether a threshold for platform usage is reached (*Code du travail*, Arts L7342-2 and 7342-4). Platforms

must also share data with the tax authorities on workers’ incomes and activities; those authorities then transmit relevant details to the social security agencies. Some platform workers can opt to allow the platform to deduct contributions and pay them directly to the authorities (Ogembo and Lehdonvirta 2020). In Spain, mandatory employment injury insurance legislation includes workers in dependent self-employment (Behrendt and Nguyen 2018).

A number of countries in Latin America have introduced “monotax” mechanisms to extend insurance coverage to self-employed workers and micro and small enterprises. This promotes their transition to the formal economy. For example, in Uruguay, monotax participants pay a flat rate covering tax and social security contributions, which entitles them (or their workers) to the same benefits as employees (other than unemployment benefits); they can also choose to voluntarily contribute to social health insurance. The Government has introduced specific measures to extend coverage to workers on taxi platforms (Freudenberg 2019). To obtain their licence to operate, drivers using taxi apps must be registered with social insurance and tax authorities under the same conditions as employees. The apps allow drivers to register while automatically adding a social security contribution to the price



▶▶ Social security can be extended to platform workers by adapting policy, legal and administrative frameworks.

<sup>42</sup> See, in particular, the Occupational Safety and Health Convention, 1981 (No. 155), Arts 19 and 20; the Violence and Harassment Convention, 2019 (No. 190), Art. 9(a). See also the LEGOSH database maintained by the ILO.

<sup>43</sup> These concerns constitute one of the priorities of associations of platform delivery workers in Chile and Mexico.

## Information technology also opens up a wider range of potential solutions for extending social protection.

of each ride and transferring it to the Uruguayan social security institution (Behrendt, Nguyen and Rani 2019; Behrendt and Nguyen 2018). A similar approach is currently being adopted in Brazil, where the Government plans to extend coverage of its monotax mechanism to drivers working on digital platforms, granting them access to sickness, maternity and disability benefits as well as old-age pensions (La Salle and Cartoceti 2019).

Similarly, in Indonesia the government agency responsible for social security (the Badan Penyelenggara Jaminan Sosial Ketenagakerjaan<sup>44</sup>) works in partnership with the financial sector to facilitate the making of registration and contribution payments so as to extend the coverage of work injury and death benefits to Gojek drivers (Indonesia's largest ride-hailing on-demand platform). This encourages Gojek drivers to register online with the agency, while their social security contributions are drawn directly from their driver accounts (Nguyen and Cunha 2019). A similar arrangement exists in Malaysia between the national social security agency, Perseko, and the platform company Grabcar (La Salle and Cartoceti 2019). In China, the dominant ride-share platform, DiDi Chuxing (滴滴出行) has set up its own medical insurance plan (滴滴医保) with contributions from the platform and/or the workers, depending on the particular scheme. Some location-based platforms, like Deliveroo, Glovo, Ola, Swiggy and Uber, also provide both drivers and passengers in-ride insurance to varying degrees (see section 2.3). Deliveroo's insurance, for instance, covers riders against injuries and third-party liability while they are online and for one hour after they have gone offline, while Swiggy's insurance coverage includes compensation of family members in case of illness.

However, to the extent that an arrangement is a purely private scheme, it risks being less equitable and effective than public schemes.<sup>45</sup> This is because particularly vulnerable low-income earners and workers with non-linear working careers are unlikely to enjoy adequate levels of protection, which may in turn aggravate inequalities, including gender inequalities (Behrendt, Nguyen and Rani 2019).

In the absence of a legal framework clearly detailing how social protection should apply to platform workers, wider coverage of these workers can to some extent be achieved through case law, as has been occurring in China and the Republic of Korea (see box 5.3). This approach has its shortcomings. The expense and duration of court proceedings can deter workers, and governments are generally better placed than courts to design the type, level, eligibility and financing of social security for platform workers. Nonetheless, disputes about the application of social protection legislation regularly come before the courts, and a broad purposive interpretation as in the cases illustrated here can help to fill gaps in coverage.

Developments in the countries mentioned here, as well as in many other jurisdictions, establish that platform workers can effectively be brought under the umbrella of social security. In India, the Code on Social Security was introduced in September 2020 to extend protection to all workers, including platform workers, irrespective of the existence of an employment relationship.<sup>46</sup> Guaranteeing universal social protection throughout the life cycle for all, including workers in all forms of work, based on sustainable financing, solidarity and risk sharing, is not only a matter of realizing the human right to social security, but is also important in establishing a level playing field between different types of engagement and ensuring fair competition between platforms and traditional companies (Behrendt, Nguyen and Rani 2019).

44 See <https://www.bpjsketenagakerjaan.go.id/>.

45 See <http://finance.sina.com/bg/tech/technews/sinacn/2019-07-09/doc-ifzkvxn2512524.shtml>; see also Behrendt and Nguyen (2018).

46 See [https://labour.gov.in/sites/default/files/SS\\_Code\\_Gazette.pdf](https://labour.gov.in/sites/default/files/SS_Code_Gazette.pdf).



► **Box 5.3 Work injury insurance: China and the Republic of Korea**

A 2018 judgment of the Haidian District People’s Court in Beijing concerned a courier who was injured while working through the FlashEx app in Beijing. He sought work injury insurance benefits from the company operating FlashEx (the platform). The platform denied liability on the basis that the courier was engaged under a “cooperation contract” rather than a contract of employment and that the work injury insurance regulations did not apply. The platform pointed to the written agreement and the courier’s control over work hours and delivery quotas.

The Court rejected these arguments. It held that in reality there were many factors that pointed to a labour relationship between the platform and the courier. For example, the courier was dependent on the platform for his income and so worked long hours each day exclusively for it. The platform also exercised a high degree of control over the courier.

More fundamentally, the Court considered the social and economic consequences of finding liability. It noted the important relationship between accident compensation and health and safety at work. If a platform entity does not bear the financial consequences of accidents suffered by workers using its platform (in terms of insurance arrangements), it will have little incentive to consider improved safety measures. The Court further emphasized that “internet companies cannot fail to undertake legal and social responsibility because they have adopted new technologies and new business methods”.

Finally, the Court noted that the uncertainty about contractual status should not deprive the courier of his entitlement to work injury insurance, as this was a basic labour right.

(*LI Xiangguo v Beijing Tongcheng Biying Technology Company Ltd.* Labour Dispute. First instance civil judgment, Beijing Haidian District People’s Court, Minshi Panjueshu (2017)Jing 0108, Minchu 53634 Hao)<sup>1</sup>

In the same year, the Supreme Court of Korea (Republic of Korea) adopted a similar purposive approach to the application of the Industrial Accident Compensation Insurance Act in two cases also involving food delivery couriers. The Court overturned decisions from lower courts which had relied on contract wording rather than actual practice. The Court found that the couriers were to be deemed “employee-like” – persons in special types of employment (PSTE) – for the purposes of the Insurance Act: Supreme Court Decision, 2016Du49372 Decided 26 April 2018; and Supreme Court Decision, 2017Du74719 Decided 26 April 2018. On remittal, the Seoul High Court determined that the couriers were indeed PSTEs: Seoul High Court Decision 2018Nu43523 decided 16 January 2019; Seoul High Court Decision 2018Nu44496 decided 17 January 2019.<sup>2</sup> Subsequent amendments to the Republic of Korea’s Occupational Health and Safety Law have brought PSTE within that law’s scope as well (see art. 78).

<sup>1</sup> Translated from the Chinese text by the ILO: 李相國與北京同城必應科技有限公司勞動爭議一審民事判決書, 北京市海澱區人民法院, 民事判決書, (2017)京0108民初53634號.

<sup>2</sup> Translated from the Korean text by the ILO: 대법원 2018. 4. 26. 선고 2016두49372; and 대법원 2018. 4. 26. 선고 2017두74719. On remittal, the Seoul High Court determined that the couriers were indeed PSTEs: 서울고등법원 2019. 1. 16. 선고 2018누43523; and 서울고등법원 2019. 1. 17. 선고 2018누44496.

To be sure, complex questions arise when a person works through a platform only on a sporadic basis or works through multiple platforms. How should social security mechanisms be adapted so that even infrequently used platforms are required to contribute a fair share? How should multiple platforms share the costs? These and other questions await comprehensive resolution, but such questions are not as novel or complex as they may first appear. Intermittent and casual work, including for multiple employers, have a long history and sophisticated regulatory and policy responses have been devised. For example, countries have successfully extended social protection to workers with multiple employers through a combination of contributory and non-contributory social protection mechanisms (ILO 2016; ILO 2019b). Information technology not only gives rise to new complexities, it also opens up a wider range of potential solutions for extending social protection.

### 5.3.6 The COVID-19 pandemic and its implications for health and safety at work and social security

The COVID-19 pandemic has thrown into sharp relief the interrelationship between platform work, occupational safety and health law, social security and measures to protect the public from the virus. There have been outbreaks in many work contexts. For instance, if a single delivery worker has coronavirus, and if that person does not quarantine due to the pressures of earning their livelihood, this can lead to the infection of large numbers of people, including fellow workers and customers.

This raises multiple regulatory issues. First, are the workers engaged through platforms covered by safety and health legislation, irrespective of their contractual status? If so, how can regulators ensure that delivery and other forms of platform work conform to legal obligations? How can both platforms and their workers take reasonable measures to maintain health, not only of the workforce but also of the general public? Are

## Social protection acts as an automatic stabilizer for the economy.

there legally mandated channels through which workers can participate in health and safety governance to devise appropriate safety procedures?

Second, do workers have effective access to health-care provided through social health insurance or national health services without encountering financial hardship?

Third, are workers entitled to take leave from work on the grounds of illness or quarantine? And if so, are they provided with adequate income security through paid sick leave or sickness benefits during their absence? Government- and employer-provided sick leave varies greatly among jurisdictions (see OECD data, for example, in OECD 2020c, figures 1 and 2).

During a pandemic, the need to prevent loss of income creates a problematic incentive to attend work despite illness, thereby potentially leading to infection of others (see box 4.6; ILO 2020b; Adams-Prassl et al. 2020). For example, 80 per cent of virus transmission leading to a major outbreak in Melbourne, Australia was attributed to workplaces, “much of it spreading among casual workers without access to sick leave, who worked while displaying symptoms” (Sakkal and Ilanbey 2020). Australia has now introduced paid pandemic leave. As the OECD has pointed out:

Paid sick leave is a crucial tool for addressing the economic impact of the COVID-19 crisis for workers and their families. It can provide some income continuity for workers who are unable to work because they have been diagnosed with COVID-19 or have to self-isolate. By ensuring that sick workers can afford to remain at home until they are no longer contagious, paid sick leave also helps to slow the transmission of the virus (OECD 2020c, 2; see also ILO 2020b).

The COVID-19 crisis has highlighted the importance of both health and safety regulations and social protection for persons engaged in all forms of work. They protect individuals during the crisis by preventing contamination,

providing access to healthcare and responding to the massive income losses resulting from the deep economic downturn. Social protection also acts as an automatic stabilizer for the economy, including by improving consumption and partially offsetting crisis-induced volatility in aggregate demand (ILO 2020b).

In response to the crisis, some platforms have introduced measures to support infected workers who need to remain in quarantine. The adequacy of these provisions has been contested (Marshall 2020; Fairwork Project 2020; see box 4.5) and government measures have therefore been required to provide more comprehensive responses. For example, Ireland has extended sickness benefits to all workers currently excluded, while the Governments of Finland and the United States have extended unemployment benefits to workers not covered by unemployment insurance, including self-employed workers in the platform economy (ILO 2020a).

A Peruvian COVID-19-related protocol<sup>47</sup> applicable to all workers engaged on delivery platforms establishes numerous health and safety obligations for platforms, including the sharing of data to prevent an agglomeration of delivery workers in pick-up locations. It requires platforms to create mandatory checkpoints for monitoring health conditions and implementing sanitization measures. Furthermore, it establishes a common fund to pay sick leave and related health expenses for delivery workers (*repartidores independientes*) who are either infected with the virus or come into close contact with infected people.

These are just a few of the many measures taken by countries as they scramble to deal with the rapidly changing consequences of the COVID-19 pandemic. What is clear is that integrating comprehensive health and safety and social protection measures into an overall pandemic response is critical to combating the virus.

### 5.3.7 Payment systems, fair termination and clear terms of engagement

As noted above, laws regulating payment procedures, terminations and transparency of obligations and entitlements are increasingly common, not just in relation to employment relationships but also in other contexts where one party requires another to enter into a contract of adhesion, notably consumer contracts. This trend reflects the fact that where one party unilaterally determines content it may give insufficient regard to the interests of the other. For example, the party in the stronger position may include terms which unreasonably impose an excessive fee, financial penalty or deduction, or enable unilateral termination at any time for any reason.

Platform work often occupies a “grey zone” between employment and commercial or consumer regulation, but in many jurisdictions there is significant convergence between the two fields in relation to fair contract terms. In principle, this makes it less likely that platform workers will “fall between the cracks”; in practice, the breadth of the scope of application of clauses in relevant legislation will have a significant impact on which workers are in fact covered.

An illustration not only of the similarity between the commercial or consumer and the employment approaches to payment systems, termination and transparency, but also of how platform workers can also “fall between two stools”, can be found in two recent instruments of the EU. These are the Transparent and Predictable Working Conditions Directive<sup>48</sup> (TPWC), which applies to workers (Art. 1(2)) (persons other than the genuinely self-employed); and the Regulation on Promoting Fairness and Transparency for Business users of Online Intermediation Services<sup>49</sup> (P2B), which applies to online intermediation services and

47 Resolución Ministerial, N° 00163-2020-Produce, Lima, 21 de Mayo De 2020; Resolución Ministerial N° 239-2020-MINSA.

48 Directive (EU) 2019/1152 of the European Parliament and of the Council of 20 June 2019 on transparent and predictable working conditions in the EU.

49 Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services.

online search engines provided, or offered to be provided, to business and corporate website users (Art. 1(2)).

Kilhoffer et al. write in their study for the European Commission that despite their different spheres of application, “both legal instruments contain [...] very similar approaches and material provisions when it comes to the conditions that have to be respected by platform businesses in their contractual relationship with professional individuals who are making use of the digital apps when delivering their services” (2020, 173; the analysis in this section draws heavily on this study). Broadly speaking, these two instruments each regulate the following issues:

- ▶ timely information as to the “essential aspects” of the employment relationship (TPWC) and “plain and intelligible” terms and conditions (P2B) of the relationship;
- ▶ circumstances in which contract modifications can be made;
- ▶ rules as to whether work for other businesses can be restricted;
- ▶ remuneration rules and, in the case of the TPWC, rules about the components, frequency and methods of payment;
- ▶ rules as to termination, including specification of reasons which, in the case of the P2B, must be related to grounds in the contract; and
- ▶ methods of redress.

In order to prevent abusive practices related to atypical contracts, such as on-demand or zero-hour contracts, the TPWC urges Member States to apply a rebuttable presumption of the existence of an employment relationship (Art. 11). Meanwhile, the P2B (Art. 5) requires that providers of online intermediation services clearly outline the parameters that determine the ranking of users and their relative importance.

Unfortunately, the two instruments leave one gap which requires quite convoluted language to specify: genuine “self-employed platform workers who are not relying on platforms that are purely providing digital intermediation information society services to consumers” (Kilhoffer et al.

## ▶▶ A preferable approach may be to require platforms to charge commissions to clients rather than to workers.

2020, 185). In layperson’s terms, this gap would arguably include location-based platform workers in the taxi sector. Nonetheless, the similarity between the two instruments suggests that the core common features could be readily extended to cover these excluded workers.

Another issue which does not yet appear to have been addressed comprehensively relates to commissions and related fees, especially those set by online web-based platforms and taxi platforms. As discussed in Chapters 2 and 4, many platforms charge commission fees, which can be as high as 25 per cent. There are two conflicting considerations here. One is that the platforms need to have a revenue stream in order for their business model to operate; a commission is a well-recognized mode of generating one. On the other hand, there has long been a policy concern that third-party intermediaries should not impose costs on workers. This is reflected in the ILO Private Employment Agencies Convention, 1997 (No. 181) (Art. 7; see also De Stefano and Wouters 2019), and also in domestic legislation. For example, the Labour Standards Act of the Republic of Korea contains the following provision:

**Elimination of Intermediary Exploitation:** No person shall intervene in the employment of another person for making a profit or gain benefit as an intermediary, unless otherwise prescribed by any Act (Art. 9).


There are ways of reconciling these two objectives. One is to maintain that the policy concern applies only to employees of online web-based platforms, not the self-employed. However, it is not clear that employees are the only category of worker that should be protected against excessive commissions, especially if the boundary between employees and the self-employed is blurred. A preferable approach may be to require platforms to charge commissions to clients rather than workers and/or to limit commissions by criteria such as proportionality.

### 5.3.8 Access to data, privacy and job mobility

Recent years have seen an increasing regulatory focus on privacy and data protection. Many developments in this field are highly relevant to platform work, not only because data collection and transfers are central to the business model of digital labour platforms but also because the new laws apply to data subjects irrespective of employment status.

One such development is the emergence of data protection regimes such as the EU's General Data Protection Regulation (GDPR),<sup>50</sup> in force since May 2018. The Regulation establishes several individual rights, such as the right to be informed, to access data, to data portability, to data erasure, and not to be subject to a decision based solely on automated processing. Meanwhile, the California Consumer Privacy Act in the United States, which came into force in January 2020, establishes a specific right to opt out of the sale of personal information (section 1798.120). Platform workers can benefit from these rights. For instance, several app-based drivers in the United Kingdom have filed a lawsuit against Uber for withholding their data contrary to the GDPR, while others have set up a cooperative which pools driving data and uses it not only to help workers optimize their income capacity, but also to assist city agencies in making more informed and effective transportation planning decisions.<sup>51</sup>

The right to data portability is particularly important. According to Article 20 of the GDPR, platform workers can obtain a copy of their data "in a structured, commonly used and machine-readable format". They also enjoy the right to have the data transmitted directly from one controller to another, where "technically feasible". While this broad provision might seem to largely address the data portability problem, the condition of technical feasibility is a potential obstacle. This is apparent not only in the EU, but in other jurisdictions that

 The right to data portability is particularly important for platform workers.

are introducing similar laws. For instance, both Nigeria's Data Protection Regulation, 2019, and India's Personal Data Protection Bill, 2019, include the qualification of technical feasibility. The latter, currently before the Indian Parliament, provides a further qualification whereby the right to data portability is further restricted in relation to trade secrets (Art. 19).

The right not to be subject to decisions based solely on automated processing could also have a major impact. Automated decision-making is central to key aspects of platform operations, from price-setting and the matching of users to determination of users' reputational status and deactivation. This right could address the opacity of the algorithms used by platforms, which lies at the root of the major concerns shared by many platform workers, such as wrongful deactivations and changes in platform pricing mechanisms.

The EU's GDPR and similar laws in other jurisdictions do permit the right not to be subject to fully automated decisions to be overridden where the processing of personal data is necessary for the performance of a contract, is authorized by law or is based on consent. However, workers still have the right to obtain human intervention, express their point of view and contest the decision in question. To understand the scope of this right, it should be read together with other clauses of the GDPR, such as Articles 13(2)(f) and 14(2)(g), which stipulate that, with regard to automated decisions, the data controller should provide "meaningful information about the logic involved, as well as the significance and the envisaged consequences of such processing for the data subject".

Moreover, data protection laws outline certain principles and the legal basis for processing

<sup>50</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, OJ L119.

<sup>51</sup> Driver's Seat Cooperative: <https://www.driversseat.co>.

personal data, which generally include transparency and consent. Some regulations, however, refer to more specific principles. For instance, the Brazilian General Data Protection Law (Lei Geral de Proteção de Dados 2018) requires that the processing of personal data be non-discriminatory and protect credit (arts 6(IX) and 7(X)). While data protection laws will have an impact on the worker-platform relationship, it is too early to determine how extensive this will be. Their application may be hindered in practice by other areas of law such as contract and trade secrecy, both of which, separately and in combination, contribute to the opacity of platform algorithms and their insulation from scrutiny (De Stefano 2019; Kapczynski 2020). Moreover, the concept of “consent” as a means of authorizing data processing may be problematic for platform workers, particularly given that there is often a serious imbalance in bargaining power (Todolí-Signes 2019).

Finally, in addition to these general data protection laws, national laws specifically relevant to platform worker data are emerging. For example, in France, one of the jurisdictions where the GDPR directly applies, the *Code du travail* was amended to include the following provision:

[Self-employed platform-based workers] have the right to access all platform data concerning their own activities that enable them to be identified. They have the right to receive this data in a structured format and the right to transmit it. The precise scope of this data as well as their access, extraction and transmission methods will be defined by decree (Art. L7342-7).

### 5.3.9 Grievance and dispute resolution

Section 4.3.2 described several situations in which platform workers need to access grievance and dispute resolution processes, such as for contesting poor performance evaluations, low ratings and work rejection (especially on microtask platforms), and, for many workers, temporary or permanent deactivation.

The Charter of Principles for Good Platform Work provides that “platforms should ensure

**A strong case can be made for platforms to be subject to the courts and tribunals of the jurisdiction in which the worker is based.**

that workers have access to transparent and accountable mechanisms, where applicable, for resolving disputes with users/clients and with other workers within a reasonable timeframe” (WEF 2020, Principle 7.2).

Fair internal review processes are crucial here. They lead to efficiencies in terms of reduced costs and time, and, as discussed in section 4.3.2, often produce favourable outcomes for workers. However, internal processes do not obviate the need for access to external dispute resolution mechanisms, such as courts. This is particularly so where it is a business practice (such as the characterization of the worker) that is being challenged, rather than an individual decision (such as an erroneous rating).

The discussion in section 5.1.1 showed that in some jurisdictions, digital labour platforms can unilaterally choose the kind of external dispute resolution system to be specified in their terms of service agreements. The danger of such unilateral systems is that access to the general court system can be blocked. This means that where, for example, there is a consistent misclassification of workers, a structural flaw in the internal review system, or a systemic problem with algorithmic decision-making, it is not subject to judicial oversight even where this leads to deactivation.

A strong case can be made, therefore, for platforms to be subject to the courts and tribunals of the jurisdiction in which the worker is based, including general procedural rules such as class actions. In some jurisdictions, notably in civil law countries such as Argentina, Chile and Mexico, the law requires that disputes be referred to the ordinary court system, and terms of service agreements often reflect that requirement.

In those jurisdictions where access to the courts can only be restricted on limited grounds (many common law jurisdictions other than the United

States), platform workers are bringing litigation that challenges the dispute resolution mechanisms in platforms' terms of service agreements. Challenges to clauses referring disputes to arbitration outside the jurisdiction where the services are being provided have been particularly successful.

A prominent recent example is the Canadian *Heller* litigation,<sup>52</sup> which resulted in a major judgment of the Supreme Court of Canada in 2020 (see Coiquaud and Martin 2019, noting that their article was written before the final decision in the litigation). *Heller* was an Uber Eats courier who together with co-workers commenced a class action against Uber arguing that they were employees with entitlements under Ontario's Employment Standards Act 2000. Uber applied for a stay – an order that the court cease hearing the matter. This was on the basis that *Heller* was bound by a mandatory arbitration clause that required him to submit his dispute to mediation and then arbitration in the Netherlands.

The Supreme Court of Canada held that the arbitration clause was invalid on the ground of unconscionability.<sup>53</sup> The majority wrote:

The arbitration clause, in effect, modifies every other substantive right in the contract such that all rights that Mr. Heller enjoys are subject to the apparent precondition that he travels to Amsterdam, initiate an arbitration by paying the required fees and receive an arbitral award that establishes a violation of this right. It is only once these preconditions are met that Mr. Heller can get a court order to enforce his substantive rights under the contract. Effectively, the arbitration clause makes the substantive

rights given by the contract unenforceable by a driver against Uber. No reasonable person who had understood and appreciated the implications of the arbitration clause would have agreed to it (*Heller* litigation, Para. 95).

The argument that the local court was not the appropriate forum (the platform being based in Europe) was also put forward by the platform company, but again rejected in the *Aslam* case in the United Kingdom (discussed in section 5.3.10). Despite these adverse decisions, it does not follow that dispute resolution clauses in terms of service agreements have no practical effect – even if they are invalid, they may deter potential litigants who, not being legal experts, believe they are effective.

Effective dispute resolution has been hindered in some developing countries owing to a lack of clarity with regard to the appropriate legal entity against which to bring a claim. For instance, a claim concerning unfair dismissal lodged by Uber drivers in South Africa failed because the drivers sued a member of the Uber group incorporated in South Africa, rather than Uber BV, a private limited company registered in the Netherlands, which was held to be the relevant contracting party.<sup>54</sup>

Attempts by location-based platforms to subject the work relationship to the law of an external jurisdiction are also likely to fail. For example, private international law in China, the EU, India and the State of California in the United States entails that, at least in simple cases not involving cross-border work, the relevant law will usually be that of the jurisdiction in which the worker is located, especially if an employment relationship may be involved or labour statutes are being applied.<sup>55</sup>

52 *Uber Technologies Inc. v. Heller*, 2020 SCC 16.

53 The Canadian approach to unconscionability has two elements: an inequality of bargaining power and an improvident transaction. Other common law jurisdictions have different tests.

54 *Uber South Africa Technology Services (Pty) Ltd v National Union of Public Service and Allied Workers (NUPSAW) and Others* (C449/17) [2018] ZALCCT 1; [2018] 4 BLLR 399 (LC); (2018) 39 ILJ 903 (LC). A similar case was observed in Kenya, *Kanuri Ltd and others v Uber Kenya Ltd*, High Court of Kenya at Nairobi, Civil Suit No. 356 of 2016, available at: <http://kenyalaw.org/caselaw/cases/view/134444>.

55 As Cherry shows in her study of California, the EU and India, courts will not automatically give effect to choice of law clauses in terms of service agreements, preferring to place considerable weight on the physical location of the worker (Cherry 2020, 204–228). See also Grušić (2012); Law of the People's Republic of China on Choice of Law for Foreign-related Civil Relationships, adopted at the 17th session of the Standing Committee of the 11th National People's Congress on 28 October 2010; Interpretation of the Supreme People's Court on Several Issues Concerning Application of Law of the People's Republic of China on Choice of Law for Foreign-related Civil Relationships (I), as adopted at the 1563rd Session of the Judicial Committee of the Supreme People's Court on 10 December 2012, article 10; Council Regulation (EC) 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, Section 5.

This is just as well since, as Cherry (2020, 226) comments: “if multinational platform operators can choose the law that they impose through an adhesive contract, they might decide to pick jurisdictions in which there either is no law; ones in which there seems to be a favorable precedent or the likelihood of one; or jurisdictions where labor standards are quite low”.

The regulatory position of online web-based work – which takes place in the “virtual world” – is potentially more complicated and little explored (Cherry 2020).<sup>56</sup> In contrast to location-based platforms, the platform, the worker and the client can be in three different countries (Cherry 2020; see also Arthurs 2010; Mundlak 2009). For example, many Amazon Mechanical Turk workers are based in India (Difallah, Filatova and Ipeirotis 2018; Berg et al. 2018), as are many Upwork workers (Horton, Kerr and Stanton 2017). The platforms themselves are based in the United States, and users (clients) can be located in many different countries, although commonly in the more developed economies (see section 1.3).

Of itself, this geographic dispersion is not novel. International secondments of workers have been common for many years, and legal principles have developed to determine the governing law to apply in the event of disputes (Morgenstern 1985; Morgenstern and Knapp 1978). But with online work, the workers do not in fact leave their domestic legal system. It is the terms of service agreements which travel, virtually, to meet the workers where they are based. These agreements may attempt to import foreign restrictions on worker entitlements. There is a paucity of cases, statutes and other governmental regulation applying these principles to purely online work and so the legal position remains uncertain, even in the major jurisdictions. Cherry (2020) considers a number of options that would fill the regulatory gap, including regulation similar to the Maritime Labour Convention, 2006, and the GDPR, as well as corporate social responsibility initiatives.

### 5.3.10 The employment relationship

While this chapter has emphasized that many principles and rights cover workers irrespective of their contractual status, the reality is that in many jurisdictions, laws giving effect to those principles and rights apply only to employees. This reality has been repeatedly revealed in the foregoing discussion, which has pointed to the limited scope of much labour protection regulation in areas such as collective bargaining and social security.

One reason for the close connection between labour protection and the employment relationship is that many labour laws were initially drafted in a period in which the boundary between employment and entrepreneurship seemed to be easier to identify, at least in industrialized countries (Deakin 2007). That era of vertically integrated industrial firms has passed, fundamentally unsettling the binary employee–entrepreneur divide (Weil 2014; Fudge, McCrystal and Sankaran 2012; Davidov and Langille 2011; Freedland and Countouris 2011; Fudge 2006; Stone 2004; Freedland 2003; Supiot 2001; Collins 1990). However, legislatures and courts have often failed to thoroughly recast labour protection in a more comprehensive direction (safety and health at work, forced and child labour and non-discrimination law being prominent exceptions). In short, while in theory employment status should not be relevant to principles and rights which apply to all workers, in practice it very much is.

But appropriate classification of workers is also important because certain legislated labour rights are, insofar as ILO instruments are concerned, not applicable to all workers. They continue to depend on an employment relationship. Certainly, the distinction may not always be clear-cut. Working time rules can both link to comprehensive standards (where they have an impact on health and safety) and be specific to employment (as in the case of paid annual leave).<sup>57</sup> Yet, the latter cannot always be absorbed into the former, and for such

<sup>56</sup> This discussion has benefited considerably from Cherry’s analysis of the issues.

<sup>57</sup> See the Holidays with Pay Convention (Revised), 1970 (No. 132); and ILO (2018c, Para. 280).



Appropriate classification of workers is also important because certain legislated labour rights are, insofar as ILO instruments are concerned, not applicable to all workers.

employment-specific rights it is essential to establish an employment relationship.

All of this means that employee status remains highly important. It is not surprising then that much of the litigation and many of the legislative debates concerning work through digital labour platforms turn on this issue. For platform workers, employment is a gateway to accessing a panoply of rights. For many platforms, it can be a major threat to their business model.

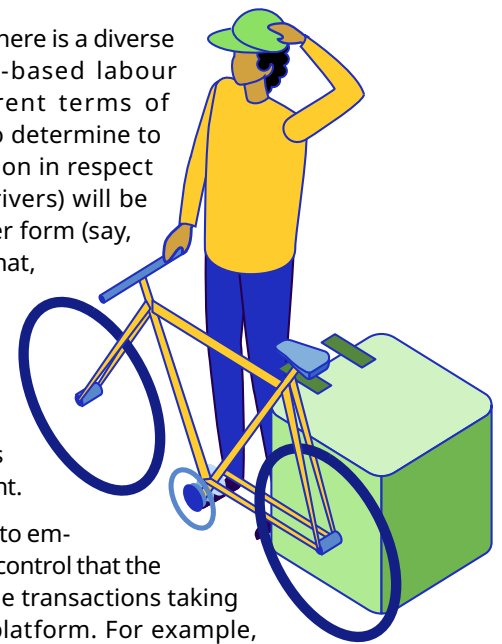
Not only are the stakes high, but the context-specific nature of the inquiry and the different national approaches to answering it produce great diversity and great uncertainty around the world. To be sure, many national systems apply tests that in general terms correspond to those set out in the Employment Relationship Recommendation, 2006 (No. 198) (see section 5.2.3). As Prassl (2018, 100) comments: “Depending on each jurisdiction and claim, the ordinary tests of employment and labour law apply to work in the on-demand economy – and, given platforms’ tight control over many aspects of service delivery, they will often point towards employment status, leaving only the genuine entrepreneurs outside the scope of protective laws and regulations”.

But the unavoidably porous nature of the tests, and their sensitivity to factual variations, mean that similar cases can yield one finding in one jurisdiction (the relationship is one of employment) and an opposite one in another (the relationship

is commercial). Nor is inconsistency within a single jurisdiction unknown; one judge may decide to give greater weight to a contractual statement denying employment than another. What constitutes, for one judge, control sufficient to establish employment, may be insufficient for another (see, for example, the review of EU cases in Kilhoffer et al. 2020; see also, with respect to China, Ban 2020; Zou 2017b).

Furthermore, since there is a diverse range of platform-based labour forms (with different terms of service), it is hard to determine to what extent a decision in respect of one form (say, drivers) will be applicable to another form (say, freelancers). For all that, it is possible to identify certain trends that fall along a spectrum between very broad and very narrow approaches to finding employment.

The first approach is to emphasize the practical control that the platform has over the transactions taking place through the platform. For example, in 2020, France’s highest court, the *Cour de Cassation*, found that an Uber driver was an employee of that platform.<sup>58</sup> The Court held that several key factors pointed to a labour contract (*contrat de travail*). The driver was integrated into a system that existed only because it was created and maintained by the platform, a system in which the platform controlled the rates and the terms upon which the transport was offered.<sup>59</sup> The driver in the litigation did not have his own clients. He could not choose his own itineraries. Uber was able to temporarily deactivate the driver’s account after three refusals to drive and the driver could lose access to his account if his rate of cancellation,



58 Arrêt n° 374 du 4 mars 2020 (19-13.316) – Cour de cassation – Chambre sociale. See also cases in Spain including Judgment STS 2924/2020 of 25 September 2020, Tribunal Supremo (sala de lo social), which found that there was an employment relationship between a platform (Glovo) and its couriers.

59 Rogers (2018) notes that the degree of monitoring of platforms (including in the case of web-based platforms, recording keystrokes and taking regular screenshots) could lead to a presumption of employment.

► **Box 5.4 The employment relationship: California Labor Code**

Tests for misclassification vary around the world. An increasingly influential approach is the “ABC” test which has been developed in particular in California: see *Dynamex Operations West, Inc. v. Superior Court of Los Angeles (2018) 4 Cal.5th 903 (Dynamex)*, a case involving delivery drivers for a same-day delivery company (Dynamex). The Dynamex test now forms part of the California Labor Code.

**2750.3. California Labor Code:**

(a) (1) For purposes of the provisions of this code and the Unemployment Insurance Code, and for the wage orders of the Industrial Welfare Commission, a person providing labor or services for remuneration shall be considered an employee rather than an independent contractor unless the hiring entity demonstrates that all of the following conditions are satisfied:

- (A) The person is free from the control and direction of the hiring entity in connection with the performance of the work, both under the contract for the performance of the work and in fact.
- (B) The person performs work that is outside the usual course of the hiring entity’s business.
- (C) The person is customarily engaged in an independently established trade, occupation, or business of the same nature as that involved in the work performed.

There are a number of exceptions, including the liberal professions.

In November 2020, a majority of Californian voters supported “Proposition 22”, formulated by Uber, Lyft and other taxi platforms, which inserted Chapter 10.5 (App-based Drivers and Services) into the Business and Professions Code. That chapter prevails over the California Labor Code. It defines app-based drivers as independent contractors but specifies a number of benefits pertaining to minimum earnings, health benefits, accident insurance, anti-discrimination, public safety and rest periods. There is no specified right to organize or to bargain collectively.

or number of “problematic behaviour” reports, was excessive. The Court therefore determined that: “work was carried out under the authority of an employer which had the power to issue orders and directives, to supervise their implementation, and to sanction breaches. Therefore, the driver’s self-employed status was fictitious.”<sup>60</sup>

Recent judicial analyses in the State of California in the United States, now codified in state legislation, reflect a similar take on classification although their application to digital labour platforms has been altered by amendments to the State’s Business and Professions Code effected through a successful 2020 ballot measure (see box 5.4).<sup>61</sup>

60 See [https://www.courdecassation.fr/IMG/20200304\\_arret\\_uber\\_note\\_%20ENGLISH.pdf](https://www.courdecassation.fr/IMG/20200304_arret_uber_note_%20ENGLISH.pdf). This approach to control appears more likely to find that a platform worker is an employee than that adopted by the European Court of Justice in, for example, *B v Yodel Delivery Network Ltd (2020) C-692/19*, a case involving a parcel courier decided the following month, although there were certain factual and legal differences between the Uber drivers and Yodel couriers.

61 Note divergent approaches federally and in other US states: compare, for example, National Labor Relations Board, Office of the General Counsel, Advice Memorandum (Cases 13-CA-163062, 14-CA- 158833 and 29-CA-177483), 16 April 2019 (finding that Uber drivers were independent contractors) and *Luis Vega v. Postmates Inc.*, decision of New York State Court of Appeals (26 March 2020) (courier found to be an employee).

A second approach is apparent in countries which have an intermediate category between employment and self-employment. An illustrative case is the *Aslam* litigation, a decision of the United Kingdom Court of Appeal,<sup>62</sup> where the majority of the Court held that while the claimant drivers were not employees, they were “workers”, a category that entitled them to the minimum wage and paid leave. This is because they were found “to do or perform personally ... work or services for another party to the contract whose status [was] not by virtue of the contract that of a client or customer of any profession or business undertaking carried on by the individual.”<sup>63</sup>

The Court remarked that there was “a high degree of fiction in the wording ... of the standard form agreement between [Uber] and each of the drivers” (para. 90).<sup>64</sup> It affirmed the original judgment by the Employment Tribunal, agreeing that: “it is not real to regard Uber as working “for” the drivers and that the only sensible interpretation is that the relationship is the other way round. Uber runs a transportation business. The drivers provide the skilled labour through which the organisation delivers its services and earns its profits” (Para. 95). This case is at the time of writing under appeal to the Supreme Court of the United Kingdom, which should lead to a definitive outcome for that jurisdiction.

A third approach is where courts give weight to the purpose for which employment status is sought in the particular litigation. This means that a platform worker could, at least in principle, be found to be an employee in accident compensation litigation

but not in litigation concerning other labour standards (discrepancies between regulatory definitions permit this approach). This creates a de facto intermediate category. Some court decisions in China and the Republic of Korea (such as the one discussed in box 5.3) provide an example (see the discussion in Zou 2017a; see also the diverse views of Chinese scholars in Ban 2020; Xie 2018; Yan 2018; Peng and Cao 2016).

A fourth approach, which is in some respects the opposite of the first, is to emphasize the ways in which platforms *do not* exercise control. In contrast to the analysis of the French *Cour de Cassation* discussed above, courts and tribunals in countries such as Australia have pointed to the fact that platform workers such as drivers have control over “whether, when, and for how long they perform work”; they are “not subject to any formal or operational obligation to perform work”.<sup>65</sup> The fact that a worker does not operate a business of their own and works solely for the platform is not determinative.<sup>66</sup> Similar reasoning has been adopted by Brazilian courts in relation to Uber drivers.<sup>67</sup>

To reiterate, whatever the approach adopted (see figure 5.3), there will be some workers who are “truly” self-employed, especially in the fourth category. The fundamental Conventions mentioned in table 5.1 require that they, too, enjoy those labour rights which apply irrespective of contractual status. Remedying misclassification, while extremely important, does not address the case of these workers and further regulatory measures may be needed (Xie 2018).

62 [2018] EWCA Civ 2748.

63 Employment Rights Act 1996 (United Kingdom) section 230(3).

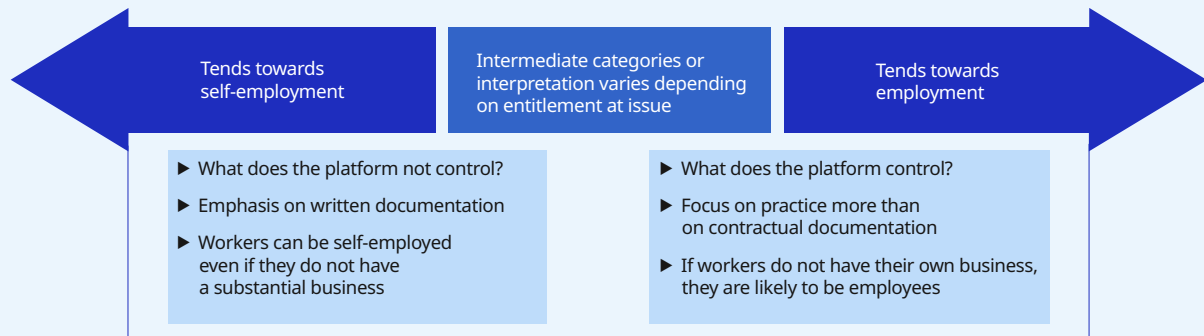
64 [2018] EWCA Civ 2748. See also *Autoclenz Ltd v Belcher* [2011] UKSC 41.

65 See <https://www.fairwork.gov.au/about-us/news-and-media-releases/2019-media-releases/june-2019/20190607-uber-media-release>. See also *Kaseris v Raiser Pacific* [2017] FWC 6610; *Amita Gupta v Portier Pacific Pty Ltd*; *Uber Australia Pty Ltd t/a Uber Eats* [2020] FWCFB 1698.

66 *Uber Australia Pty Ltd t/a Uber Eats* [2020] FWCFB 1698 at Paras 71–72; see also *ACE Insurance Limited v Trifunovski* [2013] FCAFC 3.

67 See Superior Tribunal de Justiça, 28 de agosto de 2019, Case No. 164.544 – MG (2019/0079952-0) and Tribunal Superior do Trabalho, 5 de fevereiro de 2020, Processo No TST-ED-RR-1000123-89.2017.5.02.0038.

► **Figure 5.3 Different approaches to establishing an employment relationship between workers and digital labour platforms**



Source: ILO elaboration.

### 5.3.11 Remuneration and working time

Principles concerning remuneration and working time are closely tied to the employment relationship in the ILO Conventions, so robust classification principles are essential to ensure that all employees benefit from them. However, it does not follow that no provision at all should be made on these matters for self-employed workers.

Some standards on remuneration and working time are necessary to give effect to universal rights and principles, such as occupational safety and health, social security and fair payment systems. First, if a self-employed platform worker works long hours on a regular basis to earn their income, this might compromise their health and safety. As workers find it difficult to access sufficient work, they have a powerful incentive to work excessive hours (paid and unpaid), which can lead to poor mental and physical health, among other conditions.

Second, for many workers who are dependent on platform work, such as freelance work and microtasks, as their main source of income, the income may not be sufficient to meet their basic living expenses. As discussed in section 4.2.2,

freelancers sometimes underbid and workers on microtask platforms earn substantially less than their counterparts in the traditional labour market. If this remuneration is the worker's sole source of income, it may necessitate income supplementation (including with respect to pensions and other forms of social insurance). This may have an impact on the social security system.

Third, Chapters 2 and 4 have illustrated that platform workers are vulnerable to predatory pricing tactics, and pay commission and transaction fees, which erode their payments.

What are the possibilities for developing norms about remuneration and working time that address these matters and are appropriate for the self-employed? From the perspective of social dialogue and collaborative regulation, it would be ideal if they could emerge from collective bargaining between the parties themselves. However, we have seen that antitrust law in many countries frustrates this approach; for example, an hourly rate may be vulnerable to challenge on the grounds of price-fixing (Kilhoffer et al. 2020).

Another response to this conundrum is to extend existing labour standards to "non-employee" platform workers. A recent bill presented by Chilean Senators in 2020 attempts to provide basic

## Standards on remuneration and working time are necessary to give effect to universal rights and principles.

guarantees to self-employed platform workers, including the right to receive an hourly pay rate that complies with the domestic legal framework on minimum wage.<sup>68</sup> This approach can be also seen in the *Aslam* litigation in the United Kingdom (see section 5.3.10), which, pending the final appeal outcome, has enabled Uber drivers to be covered by minimum pay and working time regulations (because they are “workers” for the purposes of those regulations) even though they are not employees. However, regulatory initiatives which have created an intermediate category between employment and self-employment have attracted criticism; some argue that they undermine the employment category (Stewart and McCrystal 2019; Cherry and Aloisi 2017; De Stefano 2016; for a defence, see Davidov 2014).

A further approach is to conceive of new labour standards that are specifically adapted to digitally based work. One such standard is the “right to disconnect” (*droit à la déconnexion*), which was introduced in 2017 for salaried employees in France (*Code du travail* Art. L7342-9(1)). This standard was extended to platform workers in the transportation industry in 2019, which enabled self-employed platform workers in the taxi sector to “switch off” from the platforms without retaliation provided this standard constitutes part of the platform’s voluntary social charter.

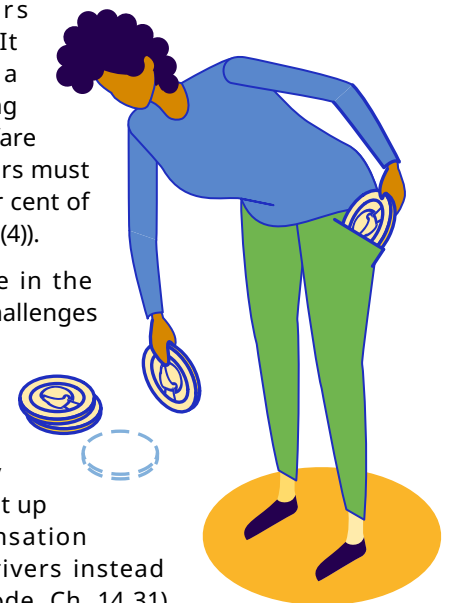
However, of itself, this measure could be ineffective in many situations. As discussed in section 4.2.2, many platforms use algorithms that reward longer connection periods or otherwise create incentives to work long hours in order for workers to receive bonuses (particularly location-based platforms). While there may not be

any direct retaliation for disconnecting, workers who do so may place themselves at a significant disadvantage. Several jurisdictions are moving to specify minimum pay rates for self-employed location-based platform workers. French law (*Code du travail* Art. L7342-9(2)) provides that a platform’s social charter should include methods of enabling a self-employed worker to obtain a “decent price” (*prix décent*).

The Indian Motor Vehicle Aggregators Guidelines of November 2020 specify that aggregators – digital intermediaries or marketplaces where passengers connect with drivers for the purpose of transportation – must comply with certain criteria in order to obtain a licence, which include obligations pertaining to working time and remuneration. For instance, aggregators must ensure that drivers are not logged in for more than 12 hours a day, even when drivers are engaged with multiple aggregators; once the connection limit is reached, a mandatory break of 10 hours will apply (Art. 7(2)(d)). Furthermore, the guidelines provide that the relevant city taxi fares apply and that the base fares must correspond to a minimum of 3 kilometres to account for dead mileage and the distance and fuel needed

to reach customers (Art. 13(1) and (2)). It is also specified that a maximum surge pricing of 1.5 times the base fare applies and that drivers must receive at least 80 per cent of the fare (Art. 13(3) and (4)).

In the city of Seattle in the United States, legal challenges to the validity of the city’s ordinance permitting Uber and Lyft drivers to bargain collectively have led the city to set up a minimum compensation system for those drivers instead (Seattle Municipal Code, Ch. 14.31).



68 Senado de Chile, Proyecto de Ley que establece garantías básicas a las personas que prestan servicios a través de plataformas digitales, *Boletín N° 13.496-13*, article 3.

A similar approach appears to have been adopted in the State of California following the successful “Proposition 22” ballot measure (see box 5.4).

The relationship between minimum remuneration standards for the self-employed and the wages system for employees is complex. In countries with a universal minimum wage, that will be a relevant reference point for negotiations among the relevant stakeholders. On the other hand, in countries with industry-level minimum pay classifications (set, for example, through collective agreements or awards) levels set for workers with a comparable degree of skill may be pertinent.

One important objection to the development of standards pertaining to self-employed platform workers is that in some contexts there may be multiple parties involved in determining rates of pay for platform workers and this may render the application of remuneration regulations more difficult, such as where a customer determines the pay rates. However, as Prassl (2018, 104) has suggested, it is possible to formulate a rule to deal with this: the platform could be responsible for setting up its systems such that “for any given amount of working time, no value below the relevant proportion of an hourly minimum wage can be entered by the customer”.

A further point can be made about enforcement. As discussed in sections 2.4 and 4.3.1, many platforms provide “coordination tools” to workers for managing workflows, including tracking routes (in the case of location-based platforms) and recording keystroke activity and taking screenshots (in the case of web-based platforms) (see also [Appendix 2B](#)). This means that platforms are in a position to determine working hours quite accurately, so they should be able to avoid underpayments. Furthermore, as Rogers (2018) argues, the data generated in this way could be made available to government authorities, and possibly worker organizations, to check for non-compliance.

### 5.3.12 Platform work and labour clauses in trade agreements

The discussion so far has focused on domestic and regional legal systems. Another important form of regulation is transnational. The most prominent example of transnational regulations, in terms of legal impact, are free trade agreements (FTAs). Considerations of space preclude an extensive discussion of the relevance of FTAs to platform work, but some general comments can be made.

A steadily increasing number of FTAs contain labour clauses that reference the 1998 ILO Declaration on Fundamental Principles and Rights at Work (see ILO 2019c; ILO 2017c; Agustí-Panareda, Ebert and LeClercq 2014) as well as other matters, such as health and safety at work. More recent agreements also refer to the ILO Decent Work Agenda and the 2008 Declaration on Social Justice for a Fair Globalization (for example, FTAs negotiated with the EU) as well as an expanded list of protected rights (for example, the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the United States–Mexico–Canada Agreement) (Compa 2019; Namgoong 2019).

Some of these clauses are problematic because they may not correctly reference the fundamental Conventions (Agustí-Panareda, Ebert and LeClercq 2014) and because they may be so loosely worded that it is difficult to put them into effect (Santos 2018; Tham and Ewing 2016). Still, as FTAs commonly impose binding legal obligations on their signatories, they are an important site of regulatory intervention pertaining to the transnational activities of digital labour platforms. The impact of trade agreements, and especially their labour clauses, on platform workers is a matter that could receive more attention in trade negotiations than has hitherto been the case.

On the other hand, some FTAs may contain provisions that curtail the ability of States to regulate the conditions of platform workers; such provisions may be found in chapters dealing with investment, e-commerce and cross-border

trade in services. For example, certain FTAs protect digital platform firms' cross-border data flows and prevent governments from localizing their presence or requiring them to transfer or disclose their source code and algorithms. In this context, a crucial question is whether platform companies merely provide technological services. If so, they may be permitted to provide services from abroad, without the need to engage with domestic sectorial regulations such as those covering transport, data protection, tax and labour law. Such stipulations have an impact not only because of actual litigation before international

## ► Conclusion

This chapter has illustrated that jurisdictions regulating platform work occupy different positions in the space between two poles. At one pole, the platform worker is conceived of as an independent agent for whom the platform bears no responsibility. At the other pole, the platform worker is considered to be an employee of the platform, which becomes responsible for complying with all obligations under labour and social protection legislation.

From the perspective of decent work, particularly as articulated through ILO Conventions and Recommendations, platform workers should benefit from many labour and social protection rights, irrespective of their contractual status. In many contexts, this means that the platforms need to take some responsibility for ensuring decent work for platform workers because they can materially influence their working conditions. They cannot remain at the "no responsibility" pole.

And indeed, while arguments as to the appropriate characterization of platform workers continue to play out around the world, it is possible to detect considerable movement away from the "no responsibility" pole in many countries. Increasingly, platforms – whether of their own volition, through social dialogue or as a result of regulatory action by governments – are undertaking obligations relating to social security, health and safety, data protection, minimum earnings, the prevention of discrimination and so forth.

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FTAs are an important site of regulatory intervention pertaining to the transnational activities of digital labour platforms.

arbitration panels but also because the mere threat of invoking them may have a chilling effect on initiatives to enhance the conditions of platform workers.

In many cases, these obligations are arguably inferior to those of an employer to an employee, leading to a number of legislatures and courts to construe the platform/worker relationship as one of employment. However, this trend towards considering the relationship to be one of employment is not, as matters presently stand, universal or inexorable. The de facto creation of an "intermediate" category of work relationship seems just as likely to be entrenched in many other jurisdictions.

However contractual arrangements between platform and worker are construed, ensuring decent work for platform workers requires social dialogue; platforms, workers, their representatives and governments should all be involved in creating better working conditions. In particular, platform workers should be able to associate so as to negotiate with the platforms. Collective bargaining should also be available, whether in its traditional forms centred on the employment relationship, or in new forms emerging in many countries which are suited to the self-employed. It is through social dialogue that innovative and consensual approaches to regulating platform work for the benefit of all stakeholders are likely to emerge.

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Platform workers should benefit from many labour and social protection rights, irrespective of their contractual status.







6

# Seizing the opportunity

A way forward

# ► Need for international policy dialogue and coordination



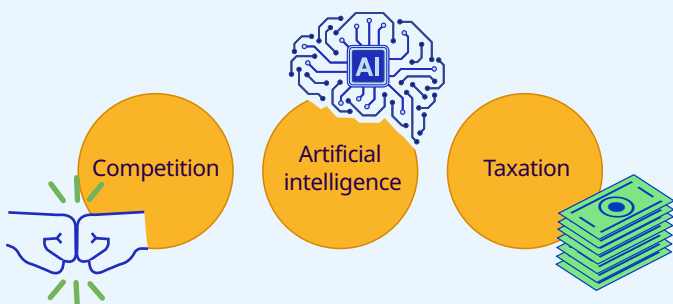
## ► With growing regulatory concerns there have been...

- Initiatives from national jurisdictions
- Initiatives by social partners
- Initiatives by other non-state actors

## ► Policy measures to ensure protection for workers



## ► Other fields of law and policy relevant for platform workers



## ► Introduction

Digital platforms have grown exponentially over the past decade, facilitated by the availability of cloud infrastructure, cloud computing services and venture capital financing. The information and communications technology revolution in particular has resulted in widespread adoption by businesses and individuals of technological solutions and devices, spurring demand for both digital products and services, as well as creating an environment for platforms to grow rapidly. The role of the digital economy has been further reinforced by the consequences of the COVID-19 pandemic, as it has enabled the continuity of business and remote working.

Among digital platforms, digital labour platforms have distinctive features that, coupled with their rapid pace of growth, are transforming the world of work. These platforms can be categorized into online web-based and location-based platforms. They cut across multiple economic sectors that require the application of diverse skills, from undertaking deliveries to data analytics.

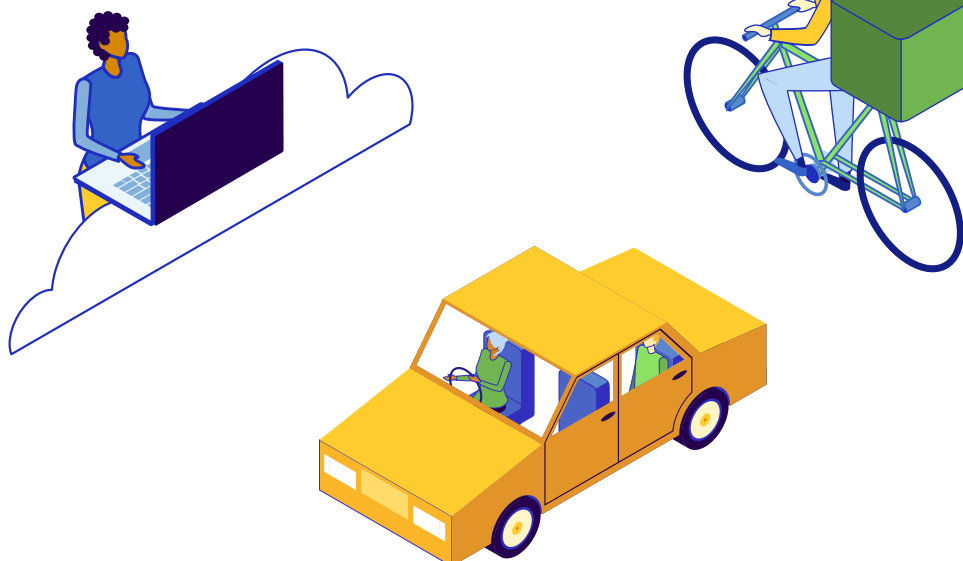
This report has provided a pioneering and comprehensive international overview of the business strategies of digital labour platforms, as well as insights into the experience of workers and businesses on online web-based and location-based platforms, drawing on surveys and interviews conducted with some 12,000 workers and representatives of 85 businesses around the world in multiple sectors.

Although still in their early stage, digital labour platforms are increasingly shaping the future of work. They have created opportunities for workers and businesses alike, but their rise has also disrupted some sectors of the economy (such as the taxi sector) and has created challenges for the future of work, which are summarized in section 6.1.

Section 6.2 discusses some of the emerging hard- and soft-law responses or initiatives taken by governments, social partners, platforms and other stakeholders (such as cooperatives) to address the challenges faced by workers on digital labour platforms, in particular by drawing on national practices.

Section 6.3 explores key pathways for leveraging the opportunities and overcoming the challenges by drawing on guidance from international labour standards, as well as national law and practice, which are relevant for ensuring decent work for workers on digital labour platforms.

Finally, the chapter describes how digital labour platforms can realize their potential for generating decent work opportunities for workers and supporting efforts by businesses to thrive, thereby advancing progress towards the Sustainable Development Goals.





## 6.1 Opportunities and challenges on digital labour platforms

The pervasive development of the digital economy and the growth of digital labour platforms have been accompanied by a digital divide across and within countries. There are key digital infrastructure gaps and many developing countries in particular face challenges with regard to ensuring adequate access to reliable digital infrastructure for both their populations and businesses. This results in constrained benefits from the digital economy and limited growth of the employment and entrepreneurial opportunities that it can potentially offer.

Weak digital infrastructure poses a major challenge for businesses that rely on platforms, as poor connectivity can have implications for their smooth running. It could also limit workers on online web-based platforms from performing tasks in an efficient manner, thereby making it more difficult to compete with workers in countries with better infrastructure. Such challenges create a serious threat in developing countries to the sustainable creation and growth of enterprises, particularly SMEs, which are critical for employment generation and achieving the Sustainable Development Goals.

In addition, the report has shown that the growth of digital labour platforms is geographically uneven, and concentrated in North America, Europe and Asia. The global distribution of investment in digital labour platforms is similarly skewed, as 96 per cent of investment is concentrated in those regions, compared to 4 per cent going to Latin America, Africa and the Arab States. About 70 per cent of the global revenues generated through these platforms are concentrated in just two countries: the United States and China. There is further concentration of market power among a few location-based platforms, facilitated through large-scale venture capital funding that has enabled them to diversify and rapidly expand in new markets despite often being unprofitable.

Many of these platforms have entered markets in developing countries, while both domestic

start-ups and traditional companies in such countries have struggled to keep pace and compete on a level playing field. Furthermore, the available data on online web-based platforms shows that the majority of workers performing tasks on these platforms reside in developing countries, while the demand is being generated primarily in developed countries. This trend has been magnified since the outbreak of the COVID-19 pandemic in March 2020.

### 6.1.1 Opportunities and challenges for businesses

The reliance of many businesses, particularly SMEs, on platforms has been growing, especially with increasing consumer preference for the use of app-based platforms. Depending on the type of business concerned, enterprises are looking to digital labour platforms for a range of services, from accessing a global pool of talent through online web-based platforms to expanding their customer base through delivery platforms. This situation in turn is also creating additional demand for platform work in activities ranging from information technology (IT), operations, marketing, and research and development, to delivering prepared food and groceries. Such a rise in demand is playing an important role in influencing employment opportunities in both the offline and online labour markets.

Through online web-based platforms, businesses are able to access talent globally, which is enabling them not only to innovate but also to use these platforms for their recruitment processes, reduce costs and improve efficiency (see section 3.1). Platforms facilitate the use by businesses of a diverse workforce ecosystem that consists of workers with a multitude of contractual arrangements. Many businesses, ranging from SMEs and start-up companies to Fortune 500 companies, have hence come to rely on such platforms not only to tap the best talent but also to improve organizational performance (see section 3.1).

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Through online web-based platforms, businesses are able to recruit workers, innovate, reduce costs and improve efficiency.

With regard to location-based platforms, delivery platforms in particular are enabling businesses such as restaurants and retail stores to expand their customer base and markets by adapting more quickly to changing customer preferences, and to enhance productivity and profitability. Delivery platforms are also playing a key role during the COVID-19 crisis in ensuring business continuity. Similarly, taxi platforms are allowing businesses and consumers to benefit from the greater convenience and accessibility they provide at lower cost.

The benefits afforded by digital labour platforms at the same time present several challenges for businesses. The reliance of digital labour platforms on large-scale venture capital investment can create an uneven playing field that can result in competition issues for traditional businesses. Such businesses further lack access to adequate finance to upgrade and to respond more rapidly to changing market dynamics. Large platforms have also become dominant in many sectors and are putting at risk the sustainability of both traditional businesses and platform start-ups.

Platforms unilaterally determine the terms of service agreements, which can also have implications for businesses. For instance, in the delivery sector platforms may charge high commission fees which affect the profit margins of restaurants. In the retail sector, while traditional businesses have expanded their customer base by using e-commerce platforms, they often face unfavourable contractual terms, non-transparency with regard to data and pricing, and weak dispute resolution mechanisms, among other issues.

## 6.1.2 Opportunities and challenges for workers

The rise of digital labour platforms is creating new income-generating opportunities for workers. Online web-based platforms provide opportunities to workers, including those with disabilities, to perform various types of tasks, and facilitate exchanges between clients (businesses) and workers. Location-based platforms, such as those for taxi and delivery services, provide opportunities, including for migrants, the low-skilled, underemployed or unemployed, although capital assets are required to access these jobs. Workers on online web-based platforms have the flexibility to perform the tasks from any location, allowing some women and men to combine work with child-care and elder care responsibilities. Competitive programming platforms are enabling workers to develop and hone their skills in coding, data analytics and programming, among others, and to develop a community of peers in programming and coding.

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The rise of digital labour platforms is creating new income-generating opportunities for workers.


Survey findings show that location-based and online web-based platforms have become a valuable source of work and income for many workers, particularly in developing countries. They also show that workers are motivated to perform tasks on online web-based platforms in order to complement income, or because of the job flexibility offered or a preference to work from home. Lack of alternative employment opportunities, job flexibility and better pay compared to other available jobs are the main motivating factors on location-based platforms (see section 4.1.7).

Work on digital labour platforms is also accompanied by numerous challenges which relate to regularity of work and income, decent working conditions, social protection, skills utilization and the freedom of association and right to collective bargaining. Many of these challenges are also prevalent for workers in informal and non-standard work arrangements and are increasingly affecting those engaged on digital labour platforms. The working conditions on digital labour platforms are largely regulated by terms of service agreements, which are unilaterally determined by the platforms and constitute contracts of adhesion that define various aspects, including remuneration and working time. These agreements tend to categorize workers as independent contractors, which makes it either impossible or expensive for them to access many of the workplace protections and entitlements that apply to employees recognized as such. In many countries self-employed workers are either not covered by social security systems or, if covered (voluntary or mandatory affiliation), bear the entire cost of their protection without any cost-sharing by platforms.

The findings from this report also show that while online web-based platforms offer new opportunities to workers to perform tasks, workers often struggle to find a sufficient amount of work due to the unavailability of enough well-paid work. The reasons for this include excess labour supply, which generates increased competition among workers, and a platform design that may discriminate against certain workers and that often charges them various fees to access work. The consequences of the COVID-19 pandemic are exacerbating the lack of availability of work and resulting in a decline in workers' incomes, while exposing them to greater risk because of the lack of social protection.

On location-based platforms, apart from the lack of a sufficient amount of work, declining remuneration rates and high commission charges also affect incomes. On online web-based platforms, workers' incomes are affected by high levels of competition and commission fees, as well as sometimes through unjustified rejection of, or non-payment for, completed tasks. Workers on online web-based platforms often spend a

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 There is an urgent need for governments to address the challenges with regard to the working conditions of platform workers.

substantial amount of time doing unpaid work, and workers on location-based platforms often spend a lot of time waiting for work – and this time is not compensated.

There are also differences on online web-based platforms in earnings between platform workers from developed countries and those from developing countries, with the latter earning less as they are often excluded from accessing higher-paid tasks. Furthermore, workers on online web-based platforms often face unpredictable work schedules and unsocial hours, particularly in developing countries due to the temporal distribution of tasks, which are often posted during US business hours. Workers on location-based platforms work long hours to meet their targets so that they can obtain their bonuses and maintain access to work (see section 4.2.3).

The lack of social security coverage is a major concern for workers on digital labour platforms, wherever they are located. The conditions created by the COVID-19 pandemic are exacerbating their vulnerability and creating additional risks for workers who interact with the public as a regular part of their work. Occupational safety and health risks are especially significant on taxi and delivery platforms, and the lack of sickness benefits and paid sick leave is compelling workers to continue working even when infected, thus putting at risk their own health as well as that of their clients and the wider public (ILO 2020b). Notably, the lack of unemployment protection and other income support measures leaves them in a highly vulnerable position (ILO 2020a).

Algorithmic management of workers is ubiquitous on digital labour platforms. Algorithms determine the allocation of tasks, performance evaluation, ratings and acceptance or rejection of work. They also determine schedules and working hours

as well as access to future work opportunities, on both online web-based and location-based platforms. Such issues have serious implications for the notion of flexibility, as well as autonomy and control over work on digital labour platforms (see section 4.3).

Platform design can also play a role in exacerbating discrimination, especially on online web-based platforms, and there is evidence that a considerable number of workers have experienced discrimination in accessing work or high-paying tasks, particularly women and workers in developing countries. On location-based platforms, the apps are sometimes designed in such a way that they allow for human biases in the code of the algorithms, which can then lead to inadvertent discrimination against some workers.

Furthermore, the algorithms used by both online web-based and location-based platforms are trained using data that often carries existing biases and thus may lead to human discrimination being embedded in the very architecture of the algorithms. Platform workers, especially in the taxi and delivery sectors, also reported experiencing or witnessing discrimination or harassment, mainly on the part of clients and customers, but also by the police in certain instances, on the basis of the work they perform (see section 4.5).

There is an urgent need for governments to address the challenges with regard to the working conditions of platform workers, including access to social security, so that the income and work opportunities generated by these platforms can be leveraged to promote decent work.



## 6.2 Emerging regulatory responses

A growing number of countries have started to address the challenges related to working conditions on digital labour platforms. Chapter 5 identifies various regulatory developments, both hard law and soft law, that could serve as potential stimuli for further action. Such developments include initiatives by national jurisdictions as well as by social partners and other non-state actors. This section summarizes both the hard- and soft-law initiatives in order to emphasize their importance, and at the same time highlights the prevalence of regulatory uncertainty and the need for coherent regulatory frameworks and public policies at the national and international levels.

### 6.2.1 National jurisdictions

As described in Chapter 5, a number of countries have adopted various regulatory approaches to apply existing labour protection and social security legal frameworks to platform workers, especially focusing on location-based platforms such as taxi and delivery services. These include, adapting existing legislation to platform workers where needed, developing rules

specific to platform-based work, and classifying these workers as employees, to prevent their misclassification.

Several developed and developing countries have extended or adapted existing laws to platform workers, especially in the areas of occupational safety and health, and social security. For instance, occupational safety and health standards have been extended to platform workers through a judicial decision in Brazil, while in India a new code on social security has extended social security to all workers irrespective of their employment relationship, including platform workers. Similarly, a number of Latin American and Asian countries have been leveraging technology and the IT infrastructure to provide social security to platform workers.

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 Several developed and developing countries have extended or adapted existing laws to platform workers.

Some countries have also developed new approaches or rules specific to platform-based work in the areas of working time and remuneration, as well as access to data and privacy. The labour code in France, which was amended in 2019 to extend certain working time provisions to self-employed platform workers in the transportation industry,<sup>1</sup> is one case in point. The law provides that a platform's voluntary social charter should include the "right to disconnect" and enables a method to obtain a "decent price" for self-employed platform workers. Similarly, in Brazil, India, Nigeria, the European Union and the State of California in the United States, new legislative rules and measures regarding data protection and privacy are being established which are also relevant for digital labour platforms and workers irrespective of their employment status.

Finally, countries have also adopted various approaches to the classification of platform workers in the case of location-based platforms, often arising from litigation. There are four distinct approaches. The first is to classify platform workers as employees based on the degree of control exercised over them by the platform, as was observed in the case of Uber taxi drivers in France and Glovo delivery workers in Spain. The second approach is to classify platform workers as an intermediate category partially covered by labour protection and social security, as some courts have done in the United Kingdom. The third approach is to adopt a de facto intermediate category, wherein certain benefits such as workplace injury compensation are provided to workers, as was observed in the case of China. The fourth approach is to consider platform workers as self-employed, because of the control they have over setting their own schedules, as in the case of Australia and Brazil. The employment status of platform workers has been and continues to be a controversial issue, with national courts adopting different approaches to recognizing these workers as employees.

## 6.2.2 Initiatives by social partners

In addition to the measures referred to in Chapter 5, a number of soft-law initiatives have been undertaken in national jurisdictions by governments and social partners. Some of these, such as codes of conduct, have been developed by public bodies in collaboration with unions and platform companies. For instance, the municipality of Bologna, in Italy, adopted a Charter of Fundamental Rights of Digital Labour in the urban context in 2018. The charter provides guidance on fair wages, health and safety, protection of personal data and the right to disconnect; the platforms that sign the charter are encouraged to observe it.<sup>2</sup>

Similarly, in the Republic of Korea, the Economic, Social and Labour Council, in cooperation with representatives of workers, platform companies and the Government, has adopted a code of conduct that provides guidelines for fair contract terms between workers and platform companies on matters such as payment methods, fees, tax, non-discrimination, performance assessment programmes and dispute settlement.

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 Soft-law initiatives have been undertaken in national jurisdictions by governments and social partners.

With growing regulatory concerns and innovations by governments, platform companies themselves have also been addressing the challenges faced by workers. For instance, in Denmark a collective bargaining agreement between a trade union

<sup>1</sup> The transportation industry includes transportation of passengers by car and delivery of goods using two- or three-wheeled vehicles.

<sup>2</sup> For more details, see: <https://digitalplatformobservatory.org/initiative/charter-of-fundamental-rights-of-digital-labour-in-the-urban-context/>.



and a cleaning platform (Hilfr)<sup>3</sup> was reached in 2018 (Jesnes and Oppegaard 2020). This enabled Superhilfr workers on the Hilfr platform to transition to employee status and thereby be covered by a collective agreement with the labour union 3F. However, the Danish Competition Council noted in its assessment in August 2020 that “Freelancehilfrs/Superhilfrs, most likely, are not employees of Hilfr from a competition law point of view”, and “that the minimum hourly fee may create a ‘price floor’, which may limit the competition between the Freelancehilfrs”. Hilfr has in its response to the assessment committed to ensuring that Superhilfrs are employees and that the company bears the financial risk for their cleaning work, which is in accordance with their intention when they entered the collective agreement with the union 3F. In addition, it has offered to remove “the minimum hourly fee for Freelancehilfrs from the platform”.<sup>4</sup>

Other codes of conduct have been adopted and initiatives taken by trade unions, such as the “FairCrowdWork” initiative and the “Ombuds office of the Crowdsourcing Code of Conduct” in Germany. The latter sets out a basic set of guidelines with a view to promoting trust and cooperation among platforms, clients and crowdworkers. The mandate of the Ombuds office is to seek compliance with the code of conduct and resolve disputes between workers and signatory platforms, regardless of the location of the worker. The Ombuds office is composed of a board of five – one worker, one trade union representative, one platform representative, one Crowdsourcing Association representative, and a neutral chair – and resolves disputes by consensus, with IG Metall, a German trade union, handling the administration. As of December 2019, a total of 44 cases had been submitted to the Ombuds office by workers via its online form.<sup>5</sup>

Trade unions have also been helping associations of platform workers in the taxi and delivery sectors with legal challenges. For instance, an unfair dismissal case against Uber in South Africa was filed by the National Union of Public Service and Allied Workers. Similarly, in Canada, the case that recognized the right of Foodora workers to unionize and bargain collectively was brought to the Ontario Labour Relations Board by the Canadian Union of Postal Workers.

### 6.2.3 Initiatives by other non-state actors

The importance of addressing the challenges that confront platform workers is also being increasingly recognized by other non-state actors. These have developed soft-law instruments, such as codes of conduct, principles of good platform work and platform certifications. A prominent example of such an instrument is the World Economic Forum Charter of Principles for Good Platform Work (2020). The Charter covers issues such as safety and well-being, flexibility, fair working conditions, social protection, voice and participation, and data management. Six major digital labour platforms (Cabify, Deliveroo, Grab, MBO Partners, Postmates and Uber Technologies) signed and committed to adhering to the Principles at the 2020 World Economic Forum Annual Meeting held in Davos, Switzerland.

Similarly, the Fairwork Foundation,<sup>6</sup> a consortium of university researchers, provides a code of good practices and principles for the regulation of platform work, to ensure decent work standards on digital labour platforms. The researchers at the foundation have translated the principles into measurable thresholds, and they evaluate platforms against those thresholds by providing ratings and certifications to platforms.

3 There are two types of service providers on Hilfr’s platform: “Freelancehilfrs” and “Superhilfrs”. The latter is covered by a collective agreement with the labour union “3F”. A “Freelancehilfr” can become a “Superhilfr” automatically after working for 100 hours, however a worker can choose to remain a “Freelancehilfr”.

4 For more details, see: <https://www.en.kfst.dk/nyheder/kfst/english/decisions/20200826-commitment-decision-on-the-use-of-a-minimum-hourly-fee-hilfr/>.

5 For more details, see: <https://ombudsstelle.crowdwork-igmetall.de/en.html>.

6 For more details, see: <https://fair.work/en/fw/homepage/>.

Moreover, in recent years a number of platform cooperatives have been established with the support of unions across a range of sectors, from taxi (such as Green Taxi Cooperative, Eva) and delivery (such as Coopcycle), to healthcare (such as NursesCan) and e-commerce (such as Fairmondo) to ensure fair working conditions for platform workers (see box 2.3). SMART is one such cooperative of autonomous workers, operating in nine countries (Austria, Belgium, France, Germany, Hungary, Italy, the Netherlands, Spain and Sweden). It assumes the role of employer vis-à-vis its members to help them access social security benefits. Members also benefit from legal aid, safety training and insurance coverage, and as employees they also have access to certain legal entitlements under labour and social security laws.

With growing regulatory concerns, certain platform companies have started to engage in addressing some of the issues related to working conditions. For instance, some location-based platforms offer insurance coverage to workers or paid sick leave (such as Deliveroo) or in-ride insurance and social protection benefits (such as Uber). Some of the delivery platforms (e.g. Swiggy)

▶▶ The importance of addressing the challenges that confront platform workers is also being increasingly recognized by other non-state actors.

also provide medical and accident insurance coverage to workers and their family members (see section 2.3.1).

Regulatory developments, albeit disparate, provide a significant point of departure for recognizing the magnitude of the challenges emerging from digital labour platforms for workers. They also provide the preliminary building blocks for constructing the way forward. Moving ahead, it will be essential that regulatory and public policy frameworks become more cohesive and better coordinated, including at the international level, and that they introduce regulatory certainty and are grounded in international labour standards.



## 6.3 Overcoming the challenges to seize the benefits

In order for the potential benefits of digital labour platforms to be fully realized, it will be necessary for them to provide decent work, thereby contributing to the achievement of the Sustainable Development Goals. The meaning of “decent work” in the context of platform-based labour through the lens of international labour standards was discussed in Chapter 5. Ensuring the application of some of the key labour standards to all workers, irrespective of their contractual status, would be a pronounced step forward. The recommendations for policy action in this section consist of addressing the regulatory gaps by means of legislative responses, and exploring other fields of law relevant to ensuring decent work, particularly on digital labour platforms.

### 6.3.1 Addressing the regulatory gaps

As described in Chapter 5, the ILO’s fundamental principles and rights at work, and some of its key Conventions and Recommendations, are applicable to all workers, irrespective of their contractual status. Thus, irrespective of whether platform workers are classified as employees or as self-employed, they should enjoy the right to associate, to bargain collectively, and to be protected against discriminatory conduct and unsafe workplaces. They should be provided with health and safety protection and social security and be guaranteed a range of other key rights at work (see

also OECD 2020a). The principles and rights articulated in international labour standards remain fully relevant to the operations of digital labour platforms, though questions may arise about how to make them operational in a particular context.

The ILO Centenary Declaration for the Future of Work calls for “[s]trengthening the institutions of work to ensure adequate protection of all workers, and reaffirming the continued relevance of the employment relationship as a means of providing certainty and legal protection to workers, while recognizing the extent of informality and the need to ensure effective action to achieve transition to formality” (ILO 2019a, 5). Since States are responsible for the implementation of ratified international labour standards, they can through their national legislation and enforcement mechanisms ensure that digital labour platforms comply with laws that are in line with international labour standards. For this reason, the national regulatory framework is crucial, as it has a bearing on the practices of companies. In the absence of ratification, international labour standards represent the most useful reference for national policy and legislative design.

In recent years, there have been a number of initiatives in countries and regions that aim to implement these standards for platform workers (see Chapter 5). It is clear that while there has been considerable progress, much remains in flux. Moreover, there are fundamental differences between countries. These are not simply reflections of national differences – they call into question whether standards should apply to all or only to certain categories of workers. For example, collective bargaining for self-employed platform workers is possible in some parts of the world (such as Australia, Canada and Japan) while in others there are significant obstacles to providing collective bargaining rights to such workers (such as the European Union). If *all* workers whose work is mediated by platforms are to enjoy decent working conditions, the current patchwork of innovations and initiatives needs to be consolidated and extended, while respecting the distinctive regulatory approaches of different jurisdictions. Ensuring decent work for platform workers would require addressing regulatory gaps in eight crucial areas, as shown in figure 6.1.

## ▶▶ The ILO’s fundamental principles and rights at work, and some of its key Conventions and Recommendations, are applicable to all workers.

The first recommendation for policy action relates to ***freedom of association and collective bargaining***. As discussed in Chapter 5, levels of unionization among workers on digital labour platforms are low. However, momentum has built in recent years concerning the organization of workers, especially on location-based platforms, spawning a number of platform worker associations. One important challenge is to devise collective bargaining structures for self-employed workers, where platform workers are truly self-employed. A first policy recommendation would thus be to ensure that legislative frameworks guarantee that all workers have the right to organize and bargain collectively. These need not replicate the traditional systems constructed with employees in mind. Social dialogue would be fundamental and could serve to address, through negotiation, many of the issues identified in this report, such as terms of engagement on platforms, rules about commission fees, ratings and deactivation, pricing, use of data, and evaluation systems.

The second recommendation for policy action relates to addressing the issue of the ***employment relationship***. As discussed in Chapter 5, countries have taken different and sometimes even opposing approaches to determining the employment status of platform workers and to the question of their classification as employees or independent contractors. This means that a taxi driver working for the same platform may be classified as an employee in one country, as an independent contractor in another, and as a member of an intermediate category in a third. The ILO Employment Relationship Recommendation, 2006 (No. 198), is an important reference as it can provide guidance “to guarantee effective protection

► **Figure 6.1 Policy fields to be addressed to ensure protection for platform workers**



Source: ILO elaboration.

for workers who perform work in the context of an employment relationship” (Para. 1),<sup>7</sup> which can enable legislatures and courts to achieve greater consistency in this regard.

Two further and interrelated recommendations for policy action relate to **occupational safety and health** and **social security**. Addressing these matters in the context of all forms of platform work has become especially pressing in light of the COVID-19 pandemic, the consequences of which are exacerbating the devastating effects of the lack of social security coverage of platform workers. Work processes need to be redesigned so that workers and other persons using platforms are, so far as is reasonably practicable, protected from risks to

safety and health, including the risk of accident or contagion. In this respect, regulatory practices such as those in Australia or in Brazil provide examples, where through legislation and judicial decisions, workplace safety and health have been extended to all workers, including platform workers.

Likewise, access to social security coverage is also key to ensuring access to medical care and income security for platform workers. Access to healthcare and sickness benefits during periods of ill health, and income support in the event of unemployment and loss of earnings are essential responses in the context of the pandemic and beyond. While some progress is being made, often on a voluntary basis, to address work injury

7 For more details, see: [https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100\\_INSTRUMENT\\_ID:312535](https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_INSTRUMENT_ID:312535).

in some countries, other areas require attention, such as health insurance, sickness benefits, maternity and unemployment protection, disability benefits and old age pensions. Greater state intervention is required to guarantee the human right to social security to platform workers through a clearly identified legal framework.

Some of the innovative approaches and developments referred to in Chapter 5 suggest that platform workers can be effectively brought under the umbrella of social security regardless of their employment relationship. This is essential not only to guarantee adequate social security coverage for platform workers, but also to ensure fair competition for enterprises. What is clearly required is to extend social security to platform workers by adapting existing policy, legal and administrative frameworks, including contributory and non-contributory mechanisms, in line with the Social Security (Minimum Standards) Convention, 1952 (No. 102), the Social Protection Floors Recommendation, 2012 (No. 202), and other relevant standards.

The fifth recommendation for policy action relates to implementing norms for **fair remuneration and working time**. These issues are closely interlinked, as low remuneration leads to excessive working hours with implications for both physical and mental health, as has been illustrated in Chapter 4. Therefore, though the ILO Conventions relating to minimum wages and working time are contingent upon the employment relationship, they should arguably be extended to all platform workers. Some national jurisdictions, such as France, have extended certain working time provisions to self-employed platform workers in the transportation industry, and have adopted innovative mechanisms to calculate their hourly rates; such mechanisms could be adapted to ensure fair remuneration and impose a maximum limit on working time.

The sixth recommendation for policy action relates to **non-discrimination** and equality of treatment with respect to gender, disability, nationality, ethnicity and migrant status, among others. The ILO Equal Remuneration Convention, 1951 (No. 100), and the Discrimination (Employment and Occupation) Convention, 1958 (No. 111), ensure equal remuneration for men and women, and also

seek to eliminate discrimination on the basis of race, colour, sex, religion or social origin, and other grounds decided at the national level. While the platforms' terms of service agreements prohibit discriminatory conduct, and many jurisdictions have well-developed anti-discrimination laws, there nonetheless exist issues of discrimination on platforms that emanate from the ways in which they and their algorithms are designed. Another challenge that requires attention concerns the application of anti-discrimination laws to platform workers in situations where the platform and its clients are not in the same jurisdiction.

The seventh recommendation relates to providing access to efficient, equitable and participative **dispute resolution processes** for all platform workers, to ensure that where a dispute over a work entitlement occurs, it can be appropriately resolved. One major issue with online web-based platforms is that a platform and its clients and workers can each be located in a different jurisdiction and identifying and applying the law of a particular jurisdiction in such a situation can be challenging. Furthermore, there are risks that in some jurisdictions the platform can select a governing law of contract from countries where the labour standards are weak, which would deprive workers of any (potential) benefits (Cherry 2020). Even location-based platforms can purport to do so or even deny workers access to local courts. Although many jurisdictions do not permit this, in those that do, social dialogue processes could serve to ensure that workers are able to take their cases to the local jurisdiction.

The final recommendation relates to **data protection**, as the digital economy is driven by data, and the ownership of and control over data can have significant impacts on workers, businesses and countries' development processes. Digital platforms currently assume exclusive ownership over the user data they collect, and they control the ways in which such data can be used and shared. This default ownership of data by platforms inevitably leads to an imbalance of power between capital and labour, with workers being unable to leverage their data to engage in collective action and collective bargaining. A more balanced data governance framework should be explored that shares user rights over data with the

platform workers, individuals and communities that generate it. There has been some progress in this regard through data protection regimes such as the EU's General Data Protection Regulation (GDPR), and a number of developing countries such as Brazil, India and Nigeria are drafting data protection legislation along similar lines, as illustrated in Chapter 5.

Such data protection laws apply to workers irrespective of their employment status and are instrumental in giving data subjects more control over their data by according them individual rights of access, deletion, portability and more. For instance, the GDPR gives workers the right to access personal data and to request that it be corrected if inaccurate. If a rating system is automated, the worker has the right to a meaningful explanation and to "obtain human intervention" in the decision-making process. Furthermore, as per Article 40 of the GDPR, digital platforms can adopt codes of conduct wherein they can commit themselves to the fair and transparent processing of data.

In addition to ensuring individual rights over data, important strides are being made towards establishing collective rights over community data. The bargaining power of communities is potentially greater than that of individuals, and thus collective rights over community data can help workers to meaningfully negotiate their working conditions with platforms (P.J. Singh 2020; De Stefano 2019).

The issue of data ownership and control also transcends national borders, and there is an intense debate around data localization versus the free flow of data (UNCTAD 2018). Data localization is gaining prevalence among developing countries, so as to ensure a more equitable sharing of the value created within the digital economy and to bridge the digital divide. However, it is also argued that data localization could hinder the movement of data and thus undermine the agility and mobility offered by the digital economy. It therefore becomes evident that there is a need for effective data governance to strike a balance between privacy and domestic development on the one hand, and free flow of data on the other.

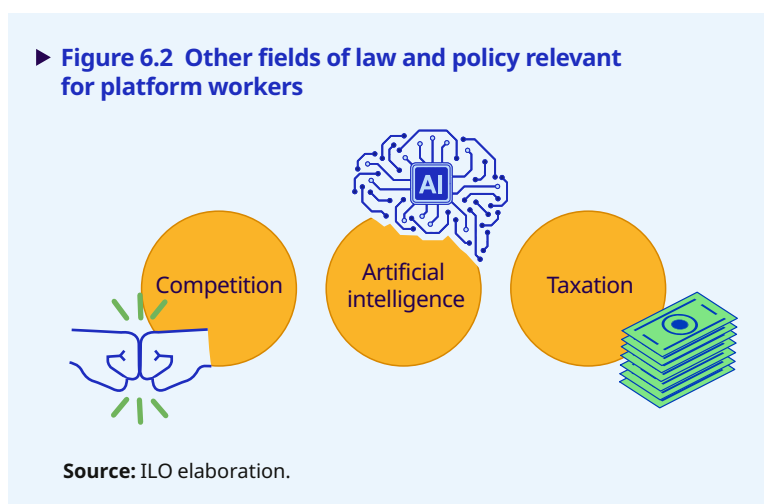
### 6.3.2 Relevance of other fields of law and policy for decent work on digital labour platforms

The initiatives in labour protection and social security touch upon only some of the issues related to work carried out through digital labour platforms. Other fields of regulation, such as competition law and the emerging law covering algorithms and taxation, are also highly relevant for ensuring decent work and shape the legal and policy space in which platforms and their workers operate (see figure 6.2). These are discussed below.

#### Competition

In many jurisdictions, competition law prohibits self-employed workers from exercising their right to collective bargaining, on the grounds that this would constitute a cartel. This weakens the position of workers on digital labour platforms, preventing them from engaging in coordinated negotiation with platform operators. However, some countries have been introducing exceptions for certain categories of dependent self-employed workers, and similar efforts are also being made at EU level. The Executive Vice-President of the European Commission, in charge of competition policy, clarified in June 2020 that the Commission was committed to improving the working conditions of platform workers, especially in today's labour market where the concepts of "worker" and "self-employed" have become blurred, stressing that "competition rules are not there to stop workers forming a union" and that therefore there was a "need to provide clarity to those who need to negotiate collectively in order to improve their working conditions".<sup>8</sup> Ensuring that all workers, including the self-employed, benefit from collective representation, bargaining and negotiation would entail reviewing existing competition law and making certain that workers on digital labour platforms enjoy these rights. Furthermore, competition law can also help in addressing

<sup>8</sup> See [https://ec.europa.eu/commission/presscorner/detail/en/ip\\_20\\_1237](https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1237).



issues related to non-competition clauses, exclusivity agreements, high commissions, and preferential or discriminatory treatment on digital labour platforms.

## ► The opacity of algorithms entails a number of risks for workers and businesses.

Competition law is also relevant for ensuring a level playing field for businesses. This is the case for both traditional businesses and technology start-ups, which may be either directly competing with digital platforms or using platforms to access a wider customer base. Emerging scrutiny regarding antitrust issues in the context of platform companies is indicative of the growing relevance of ensuring fair competition in the digital economy (see section 3.4).

### Artificial intelligence

This report has shown that work processes on digital labour platforms are increasingly being automated, and that digital labour platforms deploy algorithms for various purposes. These include matching workers and clients, assigning

tasks, evaluating and rating performance, deactivating users, and dynamically calculating prices. The opacity of the algorithms deployed for such automated decision-making entails a number of risks for workers and businesses, such as discrimination on the basis of gender, ethnicity and physical location of the worker, among others, as well as unfair competition. The ILO's independent Global Commission on the Future of Work calls for "adopting a 'human-in-command' approach to artificial intelligence that ensures that the final decisions affecting work are taken by human beings" (Global Commission 2019, 13).

To address issues of discrimination or unfair competition, and to rectify potential violations, it would be necessary to have access to and analyse the source code of an algorithm. Such access is of the utmost importance, in order to ensure transparency and accountability in artificial intelligence (AI). For instance, if the matching algorithm of a digital labour platform excludes workers on the basis of nationality from accessing tasks, then an examination of the algorithm's source code is the only way to ascertain whether it has been programmed to do so and whether such discrimination is justified. Similarly, it would be difficult to show that the pricing algorithm of an app-based taxi company is producing anti-competitive outcomes without inspecting its source code. At present, however, several trade agreements prohibit access to or the

transfer of source codes of algorithms, and similar proposals are pending in the WTO e-commerce negotiations. A blanket prohibition on access has serious potential implications for the pursuit of legitimate public interest objectives such as combating discrimination and protecting consumers and workers.

To mitigate the undesirable consequences of AI deployment and practices, a number of ad hoc policies are emerging that highlight the need for transparency and accountability. Some jurisdictions (Australia, China, the EU, Japan, Singapore, and the United States) have already started to develop regulatory frameworks for AI,<sup>9</sup> which may in the future impose transparency and accountability obligations for deployers of algorithms to safeguard against the adverse effects of AI. In addition, governments could consider adopting public policies that favour the use of open source technologies and allow for the auditing of algorithms' source codes by public regulatory authorities or specialized agencies.

## Taxation

Taxation is another area that indirectly affects platform workers and has direct implications for developed and developing countries alike. Digital labour platforms rely heavily on intangibles such as software and algorithms (OECD 2014). This allows them to access global markets but can be challenging from the perspective of taxation. In addition, when the platforms, clients or businesses and workers are from different jurisdictions, it becomes even more challenging to bring them within

the ambit of taxation. This has implications for tax revenues in developing countries, in particular with regard to digital trade and taxation of both workers and businesses. The lack of adequate public funds available for social expenditure allocation affects the provision of social protection to the population, including workers (Behrendt, Nguyen and Rani 2019). Furthermore, it can have a detrimental effect both on the recovery from the COVID-19 crisis and on the economic outcomes of countries looking to the digital economy as a vehicle for sustainable development.

Two proposals to effectively tax the digital economy are under consideration at the United Nations and the OECD. The OECD/G20 Inclusive Framework has put forward a "two-pillar approach".<sup>10</sup> The first pillar seeks to update existing nexus rules so that a multinational enterprise (MNE) can be taxable on its global profits, while the second pillar seeks to put in place a global minimum corporate tax rate so that an MNE would pay this minimum tax in each jurisdiction where it operates, effectively ending the era of tax havens.

The developing country members of the UN Committee of Experts on International Cooperation in Tax Matters have put forward an alternative proposal: first, to tax software payments as royalties,<sup>11</sup> by amending Article 12 (Royalties) of the UN Model Double Taxation Convention between Developed and Developing Countries; and, second, to introduce a new Article 12B<sup>12</sup> that would tax "income from automated digital services", defined as "any payment in consideration for any service provided on the internet or an electronic network requiring minimal human involvement from the

9 See relevant discussions at the EU: <https://ec.europa.eu/digital-single-market/en/artificial-intelligence>; the OECD principles of responsible AI: <https://www.oecd.org/going-digital/ai/principles/>; Beijing AI principles: <https://www.baai.ac.cn/news/beijing-ai-principles-en.html>; Australian Government AI Ethics Principles: <https://www.industry.gov.au/data-and-publications/building-australias-artificial-intelligence-capability/ai-ethics-framework/ai-ethics-principles>; Japan, Social Principles of Human-Centric AI: <https://www.cas.go.jp/jp/seisaku/jinkouchinou/pdf/humancentricai.pdf>; Singapore's National AI Strategy: <https://www.smartnation.gov.sg/why-Smart-Nation/NationalAIstrategy>; United States Memorandum for Guidance for Regulation of Artificial Intelligence Applications: <https://www.whitehouse.gov/wp-content/uploads/2020/01/Draft-OMB-Memo-on-Regulation-of-AI-1-7-19.pdf> and among the G20: <https://www.mofa.go.jp/files/000486596.pdf>. See also the formation of a Global Partnership on AI: <https://oecd.ai/wonk/oecd-and-g7-artificial-intelligence-initiatives-side-by-side-for-responsible-ai>.

10 For more details, see: <https://www.southcentre.int/tax-cooperation-policy-brief-10-november-2019/>.

11 For more details, see: <https://www.un.org/development/desa/financing/sites/www.un.org.development.desa.financing/files/2020-10/CRP38%20Inclusion%20of%20software%20payments%20in%20royalties%20%20OCT20.pdf>.

12 For more details, see: <https://us5.campaign-archive.com/?u=fa9cf38799136b5660f367ba6&id=f330625ffc>.



service provider”.<sup>13</sup> This would include online intermediation platform services, social media services and the sale of user data, among others. The proposal gives the taxing right to the jurisdiction where the payments have been made and

seeks to tax this income on either a gross or net basis. If accepted, this proposal would update the existing UN Model Tax Convention and would be a move towards ensuring fiscal space, especially in developing countries.



## 6.4 A way forward

As we move forward, leveraging the potential of the digital economy and of digital labour platforms in particular is likely to be critical to advancing sustainable development, creating an enabling environment for enterprises and promoting decent work for all. It will, however, also be vital to address the challenges that have been brought about by the rise of digital labour platforms, and to shape the transformations that the world of work is experiencing in a way that benefits both businesses and workers. Overcoming the challenges and seizing the opportunities before us will require hard-law and soft-law regulatory frameworks and public policies to adequately address the unprecedented complexities of today's digital economy, in which labour regulation has a decisive role to play. Such an approach would also require a mix of responses across other fields of law and policy, such as competition, artificial intelligence and taxation, which are relevant from the perspective of labour. Given the diversity and inchoate nature of many of the regulatory responses to platform labour, some form of international regulatory dialogue and policy coordination would assist in clarifying some of the regulatory uncertainties and restating the applicability of universal labour standards.

To this end, the ILO's independent Global Commission on the Future of Work calls for an international governance system that requires platforms and their clients to respect certain minimum rights and protections (Global Commission 2019). The Commission draws

its inspiration from the ILO Maritime Labour Convention, 2006 (No. 186), which sets a guiding precedent as it concerns seafarers who transcend geographical borders, and involves multiple parties operating across different jurisdictions. A similar sectoral approach could be considered for digital labour platforms.<sup>14</sup> It also calls for a “human-in-command” approach, regulation of data use, and algorithmic accountability in the world of work, as well as reformed taxation systems (Global Commission 2019). Moreover, the ILO Centenary Declaration for the Future of Work calls for “policies and measures that ensure appropriate privacy and personal data protection, and respond to challenges and opportunities in the world of work relating to the digital transformation of work, including platform work” (ILO 2019a, 6) in order to promote inclusive and sustainable economic growth, full and productive employment and decent work for all.

Another important point of departure could be the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy (MNE Declaration) (2017). It provides guidance to multinational enterprises on social policy and inclusive, responsible and sustainable workplace practices. It defines MNEs as including enterprises which control services outside the country in which they are based. Platforms could use the guidance provided in the MNE Declaration to develop clear codes of conduct for members, including published procedures for workers to raise their concerns.

<sup>13</sup> For more details, see page 9 of the Co-Coordinator's Report to the UN Committee of Experts on International Cooperation in Tax Matters, available at: [https://www.un.org/development/desa/financing/sites/www.un.org.development.desa.financing/files/2020-10/CITCM%2021%20CRP.41\\_Digitalization%2010102020%20Final%20A.pdf](https://www.un.org/development/desa/financing/sites/www.un.org.development.desa.financing/files/2020-10/CITCM%2021%20CRP.41_Digitalization%2010102020%20Final%20A.pdf).

<sup>14</sup> See also Markov and Travieso (2019), who suggest the establishment of an internationally agreed online protocol through an international standard, which could lead to international harmonization of digital platforms.

A concerted effort across multiple international forums and organizations will be critical to ensuring that digital labour platforms develop further in a manner that strongly contributes to inclusive and sustainable development. Such a process of regulatory dialogue and coordination should have at its core an effort to ensure that domestic laws implementing the fundamental principles and rights at work as well as other key legal provisions, such as those in respect of occupational safety and health and social security, apply to all workers, including digital labour platform workers.

Given the range of relevant actors and policy areas, progress can best be achieved through social dialogue among the relevant stakeholders, most particularly the digital labour platforms, the platform workers, and their representatives and governments. With the right engagement and preparation, their efforts could lead over time to a clearer understanding and a more effective and consistent approach at the enterprise, national and international levels, with a view to:

- ▶ ensuring fair competition and creating an enabling environment for sustainable enterprises;
- ▶ requiring and promoting clear and transparent terms of engagement and contractual arrangements for workers and businesses, including as reflected in labour and consumer laws;
- ▶ ensuring that workers' employment status is correctly classified and is in accordance with national classification systems;
- ▶ ensuring transparency in ratings or rankings of workers and businesses using digital platforms such as online web-based, location-based and e-commerce platforms;
- ▶ ensuring transparency and accountability of algorithms for workers and businesses;
- ▶ protecting workers' personal and work data, as well as data relating to businesses and their activities on platforms;

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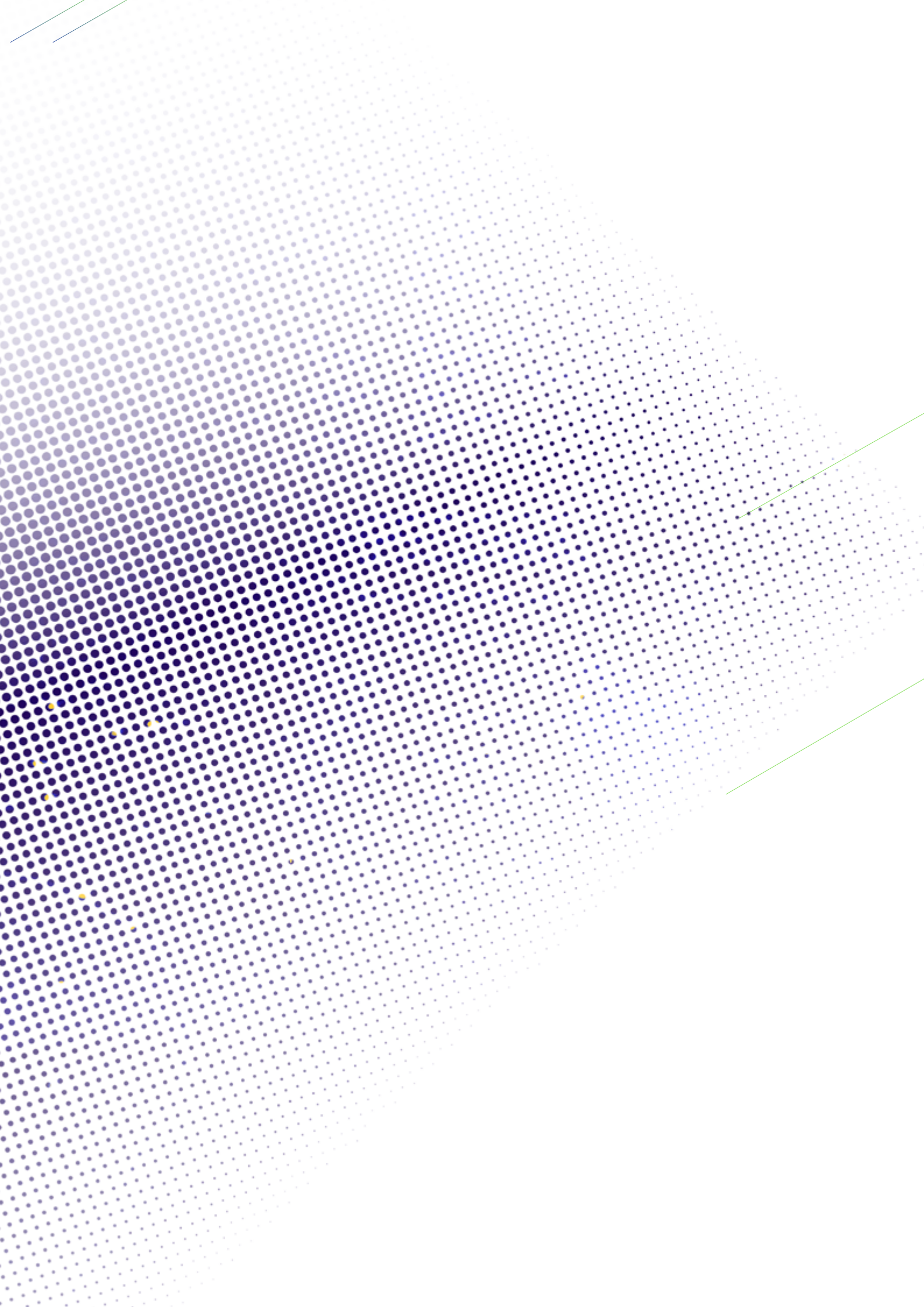
 A concerted effort across multiple international forums and organizations will be critical to ensuring that digital labour platforms contribute to inclusive and sustainable development.

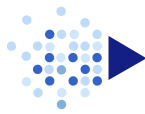
- ▶ working towards ensuring that self-employed platform workers enjoy the right to bargain collectively, for example through greater harmonization of competition law with labour law;
- ▶ reaffirming that anti-discrimination and occupational safety and health laws apply to digital labour platforms and their workers;
- ▶ ensuring adequate social security benefits for all workers, including platform workers, by extending and adapting policy and legal frameworks where necessary;
- ▶ ensuring fair termination processes for platform workers;
- ▶ ensuring access to independent dispute resolution mechanisms;
- ▶ ensuring that platform workers are able to access the courts of the jurisdiction in which they are located if they so choose;
- ▶ providing for wage protection, fair payments and working time standards;
- ▶ allowing platform workers to move freely between platforms, including by facilitating portability of workers' data, for example regarding ratings; and
- ▶ aiming at effectively taxing the digital economy, including platforms, clients and workers, as well as their transactions.

# Appendices

<https://www.ilo.org/weso2021>

-  **▶ 1. Digital labour platforms:  
Estimates of workers, investments  
and revenues**
-  **▶ 2. ILO interviews with digital  
platform companies and analysis  
of terms of service agreements**
-  **▶ 3. ILO interviews with businesses  
and clients**
-  **▶ 4. ILO surveys, interviews  
and statistical analysis**
-  **▶ 5. ILO Interviews with unions  
and associations**





## References

- Adams-Prassl, Abi, and Janine Berg. 2017. "When Home Affects Pay: An Analysis of the Gender Pay Gap Among Crowdworkers", Social Science Research Network (SSRN) Scholarly Paper ID 3048711.
- Adams-Prassl, Abi, Teodora Boneva, Marta Golin, and Christopher Rauh. 2020. "The Large and Unequal Impact of COVID-19 on Workers". *VoxEU*, 8 April.
- AfDB (African Development Bank), ADB (Asian Development Bank), EBRD (European Bank for Reconstruction and Development), and IDB (Inter-American Development Bank). 2018. *The Future of Work: Regional Perspectives*. Washington, DC.
- Agrawal, Ajay, John Horton, Nicola Lacetera, and Elizabeth Lyons. 2013. "Digitization and the Contract Labor Market: A Research Agenda", National Bureau of Economic Research (NBER) Working Paper 19525.
- Agustí-Panareda, Jordi, Franz Christian Ebert, and Desirée LeClercq. 2014. "Labour Provisions in Free Trade Agreements: Fostering Their Consistency with the ILO Standards System", Background Paper, Social Dimensions of Free Trade Agreements. Geneva: ILO.
- Ajunwa, Ifeoma. 2020. "The Paradox of Automation as Anti-Bias Intervention". *Cardozo Law Review* 41.
- Akhtar, Pav, Phoebe Moore, and Martin Upchurch. 2018. "Digitalisation of Work and Resistance". In *Humans and Machines at Work: Monitoring, Surveillance and Automation in Contemporary Capitalism*, edited by Phoebe Moore, Martin Upchurch and Xanthe Whittaker, 17–44. Palgrave Macmillan.
- Aleksynska, Mariya. 2021. "Digital Work in Eastern Europe: Overview of Trends, Outcomes, and Policy Response", ILO Working Paper.
- Aleksynska, Mariya, Anastasia Bastrakova, and Natalia Kharchenko. 2018. *Work on Digital Labour Platforms in Ukraine: Issues and Policy Perspectives*. Geneva: ILO.
- Aleksynska, Mariya, Andrey Shevchuk, and Denis Strebkov. 2021. "Online Platform Work in Russia and Ukraine: Gender Differences in Earnings and Work Satisfaction". In *Gendering Post-Soviet Space: Demography, Labor Market and Values in Empirical Research*, edited by Tatiana Karabchuk, Kazuhiro Kumo, Kseniia Gatskova and Ekaterina Skoglund, 277–299. Singapore: Springer.
- Alexander, Julia. 2020. "Creators Finally Know How Much Money YouTube Makes, and They Want More of it". *The Verge*, 4 February.
- Aloisi, Antonio. 2016. "Commoditized Workers: Case Study Research on Labor Law Issues Arising from a Set of On-Demand/Gig Economy Platforms". *Comparative Labor Law & Policy Journal* 37 (3): 653–690.
- Aloisi, Antonio, and Elena Gramano. 2018. "Non-Standard Workers and Collective Rights". In *Industrial Relations in Europe Conference (IREC)*. Leuven.
- Alsos, Kristin, Kristin Jesnes, Beate Sletvold Ølstad, and Torstein Nesheim. 2017. "Når sjefen er en app", Fafo Report No. 41. Oslo: Fafo Research Foundation.

- Anwar, Mohammad Amir, and Mark Graham. 2019. "Does Economic Upgrading Lead to Social Upgrading in Contact Centers? Evidence from South Africa". *African Geographical Review* 38 (3): 209–226.
- . 2020. "Between a Rock and a Hard Place: Freedom, Flexibility, Precarity and Vulnerability in the Gig Economy in Africa". *Competition & Change* 1–22.
- Armour, John, and Mari Sako. 2020. "AI-Enabled Business Models in Legal Services: From Traditional Law Firms to Next-Generation Law Companies?" *Journal of Professions and Organization* 7 (1): 27–46.
- Arntz, Melanie, Terry Gregory, and Ulrich Zierahn. 2016. "The Risk of Automation for Jobs in OECD Countries", OECD Social, Employment and Migration Working Papers No. 189.
- Arrieta-Ibarra, Imanol, Leonard Goff, Diego Jiménez-Hernández, Jaron Lanier, and E. Glen Weyl. 2018. "Should We Treat Data as Labor? Moving Beyond 'Free'". *AEA Papers and Proceedings* 108 (May): 38–42.
- Arthurs, Harry. 2010. "Extraterritoriality by Other Means: How Labor Law Sneaks Across Borders, Conquers Minds, and Controls Workplaces Abroad". *Stanford Law and Policy Review* 21 (3): 527–554.
- Ayres, Ian, and John Braithwaite. 1992. *Responsive Regulation: Transcending the Deregulation Debate*. Oxford Socio-Legal Studies. New York: Oxford University Press.
- Ayyar, Ranjani. 2017. "Ever-Changing Incentives Keeping Drivers on Their Toes". *The Times of India*, 31 March.
- Azevedo, Mary Ann. 2020. "Report: VC Funding in Latin America More Than Doubled to a Record \$4.6B in 2019". *Crunchbase News*, 6 May.
- Babu, Venkatesha. 2015. "Coolest Start-Ups 2015: HackerEarth Helps Find Top-Quality Coders for Tech Companies". *Business Today*, 21 June.
- Bakos, Yannis, Florencia Marotta-Wurgler, and David R. Trossen. 2014. "Does Anyone Read the Fine Print? Consumer Attention to Standard-Form Contracts". *The Journal of Legal Studies* 43 (1): 1–35.
- Ball, Kirstie. 2010. "Workplace Surveillance: An Overview". *Labor History* 51 (1): 87–106.
- Bamforth, Nicholas. 2004. "Conceptions of Anti-Discrimination Law". *Oxford Journal of Legal Studies* 24 (4): 693–716.
- Ban, Xiaohui. 2020. "Identifying Labour Relationship in the Sharing Economy: Judicial Practice in China". In *Regulating the Platform Economy: International Perspectives on New Forms of Work*, edited by Lourdes Mella Méndez, 48–60. Abingdon, UK: Routledge.
- Barnard, Catherine, and Alysia Blackham. 2017. "Discrimination and the Self-Employed: The Scope of Protection in an Interconnected Age". In *European Contract Law and the Charter of Fundamental Rights*, edited by Hugh Collins, 197–218. Cambridge, UK: Cambridge University Press.
- Barzilay, Arianne Renan, and Anat Ben-David. 2017. "Platform Inequality: Gender in the Gig-Economy". *Seton Hall Law Review* 47 (2): 393–431.

- Beaudonnet, Xavier. 2020. "Le droit de négociation collective des travailleurs considérés comme indépendants au regard des norms de l'organisation internationale du travail". In *Le droit de négociation collective des travailleurs indépendants: Cadres théoriques et études de cas*, edited by Daniel Dumont, Auriane Lamine and Jean-Benoît Maisin, 55–79. Droit Social, Larcier.
- Beerepoot, Niels, and Bart Lambregts. 2015. "Competition in Online Job Marketplaces: Towards a Global Labour Market for Outsourcing Services?" *Global Networks* 15 (2): 236–255.
- Behrendt, Christina, and Quynh Anh Nguyen. 2018. "Innovative Approaches for Ensuring Universal Social Protection for the Future of Work", ILO Future of Work Series, Research Paper 1.
- Behrendt, Christina, Quynh Anh Nguyen, and Uma Rani. 2019. "Social Protection Systems and the Future of Work: Ensuring Social Security for Digital Platform Workers". *International Social Security Review* 72 (3): 17–41.
- Belvedere, Matthew J. 2018. "Upwork Shares Rocket More Than 50% Higher at the Open on Their First Day of Trading". *CNBC*, 3 October.
- Berg, Janine. 2016. "Income Security in the On-Demand Economy: Findings and Policy Lessons from a Survey of Crowdworkers", ILO Conditions of Work and Employment Series No. 74.
- . 2019. "Protecting Workers in the Digital Age: Technology, Outsourcing and the Growing Precariousness of Work". *Comparative Labour Law and Policy Journal* 41 (1): 66–94.
- Berg, Janine, Uma Rani, Marianne Furrer, Ellie Harmon, and M. Six Silberman. 2018. *Digital Labour Platforms and the Future of Work: Towards Decent Work in the Online World*. Geneva: ILO.
- Berkowitz, Daniel, Katharina Pistor, and Jean-Francois Richard. 2003. "Economic Development, Legality, and the Transplant Effect". *European Economic Review* 47 (1): 165–195.
- Bessa, Ioulia, Simon Joyce, Denis Neumann, Mark Stuart, Vera Trappmann, and Charles Umney. Forthcoming. "Worker Protest in the Platform Economy", ILO Working Paper.
- Bezos, Jeff. 2020. "Statement by Jeff Bezos to the U.S. House Committee on the Judiciary: Testimony before the Subcommittee on Antitrust, Commercial, and Administrative Law". *The Amazon Blog*, 28 July.
- Bhalla, Tarush. 2017. "With \$4.5M under Its Belt, HackerEarth Is Finding New Ways to Engage with Developers in India". *YourStory*, 12 April.
- Black, Julia. 2001. "Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World". *Current Legal Problems* 54 (1): 103–146.
- . 2002. "Critical Reflections on Regulation". *Australian Journal of Legal Philosophy* 27: 1–35.
- Blackham, Alysia. 2018. "'We Are All Entrepreneurs Now': Options and New Approaches for Adapting Equality Law for the 'Gig Economy'". *International Journal of Comparative Labour Law and Industrial Relations* 34 (4): 413–434.
- Blevins, Cameron, and Lincoln Mullen. 2015. "Jane, John ... Leslie? A Historical Method for Algorithmic Gender Prediction". *Digital Humanities Quarterly* 9 (3).
- Bloomberg Law. 2020. "Amazon Accused of Monopolization, Sweeping Price-Fixing Scheme". <https://news.bloomberglaw.com/mergers-and-antitrust/amazon-accused-of-monopolization-massive-price-fixing-scheme>.

- Bodie, Matthew T., Miriam A. Cherry, Marcia L. McCormick, and Jintong Tang. 2016. "The Law and Policy of People Analytics", Social Science Research Network (SSRN) Scholarly Paper ID 2769980.
- Bornstein, Stephanie. 2018. "Antidiscriminatory Algorithms". *Alabama Law Review* 70 (2): 519–572.
- Boudreau, John W., Ravin Jesuthasan, and David Creelman. 2015. *Lead the Work: Navigating a World Beyond Employment*. London: Wiley.
- Boudreau, Kevin J., and Andrei Hagiu. 2009. "Platform Rules: Multi-Sided Platforms as Regulators". In *Platforms, Markets and Innovation*, edited by Annabelle Gawer. Cheltenham, UK: Edward Elgar.
- Boudreau, Kevin J., and Lars B. Jeppesen. 2015. "Unpaid Crowd Complementors: The Platform Network Effect Mirage". *Strategic Management Journal* 36 (12): 1761–1777.
- Boudreau, Kevin J., and Karim R. Lakhani. 2013. "Using the Crowd as an Innovation Partner". *Harvard Business Review* 91(4): 61–69.
- Brito, Miguel, and Celestino Gonçalves. 2019. "Codeflex: A Web-Based Platform for Competitive Programming". In *2019 14th Iberian Conference on Information Systems and Technologies (CISTI)*, 1–6.
- Brown, Andrew, Andy Charlwood, and David A. Spencer. 2012. "Not All That It Might Seem: Why Job Satisfaction Is Worth Studying Despite It Being a Poor Summary Measure of Job Quality". *Work, Employment and Society* 26 (6): 1007–1018.
- Budd, John W., and Alexander J.S. Colvin. 2008. "Improved Metrics for Workplace Dispute Resolution Procedures: Efficiency, Equity, and Voice". *Industrial Relations: A Journal of Economy and Society* 47 (3): 460–479.
- Burson-Marsteller, The Aspen Institute, and *Time*. 2016. "The On-Demand Economy Survey", Future of Work Initiative, 21 June. Washington, DC: The Aspen Institute.
- Butollo, Florian. 2020. "Digitalization and the geographies of production: Towards reshoring or global fragmentation?" *Competition & Change*, ISSN 1477-2221.
- Butollo, Florian, and Lea Schneidmesser. Forthcoming. "Specialization Revisited: B2B Platforms as Distribution-Driven Path towards Digitized Manufacturing". *International Labour Review*.
- Bygrave, Lee A. 2015. *Internet Governance by Contract*. Oxford: Oxford University Press.
- Cagle, Susie. 2020. "'Fees Are Murder': Delivery Apps Profit as Restaurants Forced to Close Doors". *The Guardian*, 3 April.
- Canada, Statcan (Statistics Canada). 2017. *The Sharing Economy in Canada*.
- Castells, Manuel. 2010. *The Rise of the Network Society*. New York: Wiley.
- Chapman, Lizette, and Sarah Frier. 2020. "Uber and Lyft Cars Become Vector for Racism amid Coronavirus Fears". *Los Angeles Times*, 6 February.
- Chen, Julie Yujie, and Jack Linchuan Qiu. 2019. "Digital Utility: Datafication, Regulation, Labor, and DiDi's Platformization of Urban Transport in China". *Chinese Journal of Communication* 12 (3): 274–289.
- Chen, Yiu Por (Vincent). Forthcoming. "Online Digital Labour Platforms in China: Working Conditions, Policy Issues and Prospects", ILO Working Paper.



- Cherry, Miriam A. 2020. "A Global System of Work, A Global System of Regulation?: Crowdwork and Conflicts of Law". *Tulane Law Review* 94 (2): 184–245.
- Cherry, Miriam A., and Antonio Aloisi. 2017. "Dependent Contractors in the Gig Economy: A Comparative Approach". *American University Law Review* 66 (3): 635–689.
- Cherry, Miriam A., and Winifred R. Poster. 2016. "Crowdwork, Corporate Social Responsibility, and Fair Labor Practices". In *Research Handbook on Digital Transformations*, edited by F. Xavier Olleros and Majlinda Zhegu, 291–312. Cheltenham, UK; Northampton, MA: Edward Elgar.
- Choudary, Sangeet Paul. 2018. "The Architecture of Digital Labour Platforms: Policy Recommendations on Platform Design for Worker Well-Being", ILO Future of Work Series, Research Paper 3.
- Chui, Michael, James Manyika, Mehdi Miremadi, Nicolaus Henke, Rita Chung, Pieter Nel, and Sankalp Malhotra. 2018. "Notes from the AI Frontier: Insights from Hundreds of Use Cases". McKinsey Global Institute.
- CIPD (Chartered Institute of Personnel and Development). 2017. *To Gig or Not to Gig? Stories from the Modern Economy*. London.
- Clark, Kate. 2019. "Unicorns Aren't Profitable, and Wall Street Doesn't Care". *TechCrunch* (blog). 26 March. <https://social.techcrunch.com/2019/03/26/unicorns-arent-profitable-wall-street-doesnt-care/>.
- Clewlow, Regina R., and Gouri Shankar Mishra. 2017. "Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States", Research Report UCD-ITS-RR-17-07, Institute of Transportation Studies, University of California, Davis.
- Coiquaud, Urwana, and Isabelle Martin. 2019. "Accès à la justice des travailleurs de plateformes numériques: Réponses contrastées des tribunaux canadiens et américains". *Relations industrielles / Industrial Relations* 74 (3): 577–588.
- Collins, Hugh. 1990. "Independent Contractors and the Challenge of Vertical Disintegration to Employment Protection Laws". *Oxford Journal of Legal Studies* 10 (3): 353–380.
- Colvin, Alexander J.S. 2019. "The Metastasis of Mandatory Arbitration". *Chicago-Kent Law Review* 94 (1): 3–24.
- Compa, Lance. 2019. "Trump, Trade, and Trabajo: Renegotiating Nafta's Labor Accord in a Fraught Political Climate". *Industrial Journal of Global Legal Studies* 26 (1): 263–304.
- Competition Commission of India. 2020. "Market Study on E-Commerce in India".
- Cook, Cody, Rebecca Diamond, Jonathan Hall, John List, and Paul Oyer. 2018. "The Gender Earnings Gap in the Gig Economy: Evidence from over a Million Rideshare Drivers", National Bureau of Economic Research (NBER) Paper W24732.
- Cooney, Sean, Sarah Biddulph, and Ying Zhu. 2013. *Law and Fair Work in China*. Abingdon: Routledge.
- Corporaal, Greetje F., and Vili Lehdonvirta. 2017. "Platform Sourcing: How Fortune 500 Firms Are Adopting Online Freelancing Platforms". Oxford Internet Institute, University of Oxford.
- Countouris, Nicola. 2018. "The Concept of 'Worker' in European Labour Law: Fragmentation, Autonomy and Scope". *Industrial Law Journal* 47 (2): 192–225.

- . 2019. "Defining and Regulating Work Relations for the Future of Work", ILO Governance and Tripartism Department.
- Countouris, Nicola, and Luca Ratti. 2018. "The Sharing Economy and EU Anti-Discrimination Law". In *The Cambridge Handbook of the Law of the Sharing Economy*, edited by John J. Infranca, Michèle Finck and Nestor M. Davidson, 486–498. Cambridge, UK: Cambridge University Press.
- Crémer, Jacques, Yves-Alexandre de Montjoye, and Heike Schweitzer. 2019. "Competition Policy for the Digital Era". European Commission, Directorate-General for Competition.
- Cusumano, Michael A., Annabelle Gawer, and David B. Yoffie. 2019. *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power*. New York: Harper Collins.
- Darkwah, Akosua K., and Dzodzi Tsikata. Forthcoming. "Home Based Work and Homework in Ghana: An Exploration". Geneva: ILO.
- Davenport, Thomas, Abhijit Guha, Dhruv Grewal, and Timna Bressgott. 2020. "How artificial intelligence will change the future of marketing". *Journal of the Academy of Marketing Science* 48: 24–42.
- Davidov, Guy. 2014. "Setting Labour Law's Coverage: Between Universalism and Selectivity". *Oxford Journal of Legal Studies* 34 (3): 543–566.
- Davidov, Guy, and Brian Langille. 2011. *The Idea of Labour Law*. Oxford: Oxford University Press.
- Davies, Paul, and Mark Freedland. 2006. "The Complexities of the Employing Enterprise". In *Boundaries and Frontiers of Labour Law*, edited by Guy Davidov and Brian Langille. Portland: Hart.
- Deakin, Simon. 2007. "Does the 'Personal Employment Contract' Provide a Basis for the Reunification of Employment Law?". *Industrial Law Journal* 36 (1): 68–83.
- Dedeoglu, Saniye. Forthcoming. "Homeworkers in Turkey: Home Bounded-Global Outreach". Geneva: ILO.
- de la Merced, Michael J., and Kate Conger. 2019. "Uber I.P.O. Values Ride-Hailing Giant at \$82.4 Billion". *The New York Times*, 9 May.
- Deloitte. 2017. *2017 Deloitte Global Human Capital Trends: Rewriting the Rules for the Digital Age*. Deloitte University Press.
- . 2018. *2018 Deloitte Global Human Capital Trends: The Rise of the Social Enterprise*. Deloitte University Press.
- . 2019. *2019 Deloitte Global Human Capital Trends: Leading the Social Enterprise – Reinvent with a Human Focus*. Deloitte University Press.
- De Stefano, Valerio. 2016. "The Rise of the 'Just-in-Time Workforce': On-Demand Work, Crowd Work and Labour Protection in the 'Gig-Economy'", ILO Conditions of Work and Employment Series No. 71.
- . 2019. "'Negotiating the Algorithm?': Automation, Artificial Intelligence and Labour Protection". *Comparative Labour Law and Policy Journal* 41 (1): 15–46.
- De Stefano, Valerio, and Antonio Aloisi. 2018. "European Legal Framework for 'Digital Labour Platforms'". Luxembourg: European Commission Joint Research Centre.

- . 2019. "Fundamental Labour Rights, Platform Work and Human-Rights Protection of Non-Standard Workers". In *Labour, Business and Human Rights Law*, edited by Janice R. Bellace, Samuel Blank and Beryl Haar, 359–379. Cheltenham, UK; Northampton, MA: Edward Elgar.
- De Stefano, Valerio, and Mathias Wouters. 2019. "Should Digital Labour Platforms Be Treated as Private Employment Agencies?" European Trade Union Institute (ETUI) Foresight Brief.
- Dhillon, Amrit. 2018. "My Life is Spent in This Car': Uber Drives Its Indian Workers to Despair". *The Guardian*, 4 December.
- Difallah, Djellel, Elena Filatova, and Panos Ipeirotis. 2018. "Demographics and Dynamics of Mechanical Turk Workers". In *Eleventh ACM International Conference*, 135–143. Marina Del Rey, CA: ACM Press.
- Dockès, Emmanuel. 2019. "New Trade Union Strategies for New Forms of Employment". *European Labour Law Journal* 10 (3): 219–228.
- Drahokoupil, Jan, and Brian Fabo. 2016. "The Platform Economy and the Disruption of the Employment Relationship", European Trade Union Institute (ETUI) Policy Brief No. 5.
- Dube, Arindrajit, Jeff Jacobs, Suresh Naidu, and Siddharth Suri. 2020. "Monopsony in Online Labor Markets". *American Economic Review: Insights* 2 (1): 33–46.
- Duch-Brown, Néstor. 2017a. "The Competitive Landscape of Online Platforms". JRC Technical Reports. European Commission.
- . 2017b. "Platforms to Business Relations in Online Platform Ecosystems". JRC Technical Reports, JRC Digital Economy Working Paper 2017-07. European Commission.
- Duggan, James, Ultan Sherman, Ronan Carbery, and Anthony McDonnell. 2020. "Algorithmic Management and App-Work in the Gig Economy: A Research Agenda for Employment Relations and HRM". *Human Resource Management Journal* 30 (1): 114–132.
- Ebisui, Minawa, Sean Cooney, and Colin Fenwick. 2016. *Resolving Individual Labour Disputes: A Comparative Overview*. Geneva: ILO.
- Economic Times, The*. 2018. "Walmart Acquires Flipkart for \$16 Billion in the World's Largest Ecommerce Deal". 10 May.
- Estlund, Cynthia. 2018. "The Black Hole of Mandatory Arbitration". *North Carolina Law Review* 96 (3): 679–710.
- European Commission. 2016a. "Business-to-Business Relationships in the Online Platforms Environment: Legal Aspects and Clarity of Terms and Conditions of Online Platforms".
- . 2016b. "Online Platforms: Contrasting Perceptions of European Stakeholders".
- . 2017a. "Business-to-Business Relationships in the Online Platforms Environment: Algorithms, Ranking and Transparency".
- . 2017b. "Unfair Platform-to-Business Trading Practices: Focus Group with Business Users".
- . 2017c. "Unfair Platform-to-Business Trading Practices: Effective Dispute Resolution and the Fundamental Right to Conduct a Business".

- . 2018. "Study on Contractual Relationships between Online Platforms and Their Professional Users".
- . 2019. "How Do Online Platforms Shape Our Lives and Businesses?"
- . 2020. "Competition: The European Commission Launches a Process to Address the Issue of Collective Bargaining for the Self-employed". Press Release, 30 June.
- EU (European Union). 2020. "The Platform Economy and Precarious Work", Policy Department for Economic, Scientific and Quality of Life Policies, Directorate-General for Internal Policies.
- Evans, David S., and Richard Schmalensee. 2008. "Markets with Two-Sided Platforms". In *Issues in Competition Law and Policy*, Vol. 1, edited by Wayne D. Collins, Josepha Angland and the American Bar Association. Chicago: ABA Section of Antitrust Law.
- . 2016. *Matchmakers: The New Economics of Multisided Platforms*. Boston, MA: Harvard Business Review Press.
- Fairwork Project, The. 2020. *The Gig Economy and Covid-19: Fairwork Report on Platform Policies*. Fairwork Foundation.
- Farrell, Diana, and Fiona Greig. 2016. *Paychecks, Paydays, and the Online Platform Economy: Big Data on Income Volatility*. New York: JPMorgan Chase Institute.
- Farrell, Diana, Fiona Greig, and Amar Hamoudi. 2018. *The Online Platform Economy in 2018: Drivers, Workers, Sellers and Lessors*. New York: JPMorgan Chase Institute.
- Federal Reserve Board. 2019. "Report on the Economic Well-Being of U.S. Households in 2018". Washington, DC.
- Florida, Richard, and Ian Hathaway. 2018. *Rise of the Global Startup City: The New Map of Entrepreneurship and Venture Capital*. Washington, DC: Center for American Entrepreneurship.
- Foong, Eureka, Nicholas Vincent, Brent Hecht, and Elizabeth M. Gerber. 2018. "Women (Still) Ask For Less: Gender Differences in Hourly Rate in an Online Labor Marketplace". *Proceedings of the ACM on Human-Computer Interaction 2* (CSCW) 53: 1–21.
- Foster, Christopher, Mark Graham, Laura Mann, Timothy Waema, and Nicolas Friederici. 2018. "Digital Control in Value Chains: Challenges of Connectivity for East African Firms". *Economic Geography* 94 (1): 68–86.
- Fountoukakos, Kyriakos, André Pretorius, and Lisa Geary. 2018. "Market Definition in a Rapidly Changing (Digital) World: The Case of Ride-Sharing". *Competition Policy International*, June 25.
- Fredman, Sandra. 2015. "Equality Law: Labour Law or an Autonomous Field?" In *The Autonomy of Labour Law*, edited by Alan Bogg, 257–273. Oxford and Portland, Oregon: Hart.
- Freedland, Mark. 2003. *The Personal Employment Contract*. Oxford: Oxford University Press.
- Freedland, Mark, and Nicola Countouris. 2011. *The Legal Construction of Personal Work Relations*. Oxford: Oxford University Press.
- Freudenberg, Christoph. 2019. "Rising Platform Work: Scope, Insurance Coverage and Good Practices among ISSA Countries". Geneva: International Social Security Association (ISSA).

- Frey, Carl Benedikt, and Michael A. Osborne. 2017. "The Future of Employment: How Susceptible Are Jobs to Computerisation?" *Technological Forecasting and Social Change* 114 (C): 254–280.
- Fudge, Judy. 2006. "Fragmenting Work and Fragmenting Organizations: The Contract of Employment and the Scope of Labour Regulation". *Osgoode Hall Law Journal* 44 (4): 609–648.
- Fudge, Judy, Shae McCrystal, and Kamala Sankaran. 2012. *Challenging the Legal Boundaries of Work Regulation*. Oxford and Portland, Oregon: Hart.
- Fuller, Joseph, Manjari Raman, Allison Bailey, Nithya Vaduganathan, James Palano, et al. 2020. *Building the On-demand Workforce*. Boston: Harvard Business School and Boston Consulting Group.
- Fumagalli, Andrea, Stefano Lucarelli, Elena Musolino, and Giulia Rocchi. 2018. "Digital Labour in the Platform Economy: The Case of Facebook". *Sustainability* 10 (6): 1–16.
- Fundación ONCE and the ILO Global Business and Disability Network. 2019. "Making the Future of Work Inclusive of People with Disabilities".
- Galpaya, Helani, and Laleema Senanayake. 2018. "Online Freelancing: Potential for Digital Gig Work in India, Sri Lanka and Myanmar". In *The 22nd Biennial Conference of the International Telecommunications Society: "Beyond the Boundaries: Challenges for Business, Policy and Society", June 24th–27th, 2018, Seoul, Korea*. Seoul: International Telecommunications Society (ITS).
- Galperin, Hernan, and Catrihel Greppi. 2017. "Geographical Discrimination in the Gig Economy". Social Science Research Network (SSRN) Scholarly Paper ID 2922874.
- Garben, Sacha. 2019. "The Regulatory Challenge of Occupational Safety and Health in the Online Platform Economy". *International Social Security Review* 72 (3): 95–112.
- Gawer, Annabelle. 2014. "Bridging Differing Perspectives on Technological Platforms: Toward an Integrative Framework". *Research Policy* 43 (7): 1239–1249.
- Global Commission on the Future of Work (Global Commission). 2019. *Work for a brighter future*. Geneva: ILO.
- Goldín, Adrián. 2020. "Los trabajadores de plataforma y su regulación en la Argentina", documentos de Proyectos (LC/TS.2020/44), Santiago, Comisión Económica para América Latina y el Caribe (CEPAL).
- Goldman, Tanya, and David Weil. 2020. "Who's Responsible Here? Establishing Legal Responsibility in the Fissured Workplace", Institute for New Economic Thinking Working Paper No. 114.
- Gomez-Uribe, Carlos A., and Neil Hunt. 2015. "The Netflix Recommender System: Algorithms, Business Value, and Innovation". *ACM Transactions on Management Information Systems* 6 (4): 1–19.
- Grab. 2017. "Overview of Grab's Personal Accident Insurance". *Grab ID* (blog). 9 May. <https://www.grab.com/id/en/blog/asuransi/>.
- Graf, Michael, and Susan M. Mudambi. 2005. "The Outsourcing of IT-Enabled Business Processes: A Conceptual Model of the Location Decision". *Journal of International Management* 11 (2): 253–268.
- Graham, Mark, Isis Hjorth, and Vili Lehdonvirta. 2017. "Digital Labour and Development: Impacts of Global Digital Labour Platforms and the Gig Economy on Worker Livelihoods". *Transfer: European Review of Labour and Research* 23 (2): 135–162.

- Graham, Mark, Vili Lehdonvirta, Alex Wood, Helena Barnard, Isis Hjorth, and David Peter Simon. 2017. "The Risks and Rewards of Online Gig Work at the Global Margins". Oxford Internet Institute, University of Oxford and Gordon Institute of Business Science (GIBS), University of Pretoria.
- Grand View Research. 2020. "Retail E-Commerce Market Size, Share and Trends Analysis Report, 2020–2027". May.
- Green, Daryl, Craig Walker, Abdulrahman Alabulththim, Daniel Smith, and Michele Phillips. 2018. "Fueling the Gig Economy: A Case Study Evaluation of Upwork. Com". *Management and Economics Research Journal* 4: 104–112.
- Griesbach, Kathleen, Adam Reich, Luke Elliott-Negri, and Ruth Milkman. 2019. "Algorithmic Control in Platform Food Delivery Work". *Socius: Sociological Research for a Dynamic World* 5: 1–15.
- Grimshaw, Damian, Colette Fagan, Gail Hebson, and Isabel Tavora. 2017. "A new labour market segmentation approach for analysing inequalities: Introduction and overview". In D. Grimshaw, C. Fagan, G. Hebson and I. Tavora (eds): *Making work more equal: A new labour market segmentation approach*, 1–32. Manchester, Manchester University Press.
- Grimshaw, Damian, and Jill Rubery. 2015. "The Motherhood Pay Gap: A Review of the Issues, Theory and International Evidence", ILO Conditions of Work and Employment Series No. 57.
- Grooms, Jignasha Amin. 2017. "The Art and Science of Attracting Today's Next-Gen Workforce Is Digital by Design". *Strategic HR Review* 16 (4): 177–181.
- Grušić, Uglješa. 2012. "Jurisdiction in Employment Matters under Brussels I: A Reassessment". *International & Comparative Law Quarterly* 61 (1): 91–126.
- Gupta, Ruchi. 2020. "Why Facebook Joined Google and Tencent in Gojek Investment". *Market Realist*, 4 June.
- Gwilliam, Kenneth M. 2005. "Regulation of Taxi Markets in Developing Countries: Issues and Options", Urban Transport Thematic Group Transport Note No. TRN-3. The World Bank.
- Halegua, Aaron. 2016. "United States". In *Resolving Individual Labour Disputes: A Comparative Overview*, edited by Minawa Ebisui, Sean Cooney and Colin Fenwick, 311–347. Geneva: ILO.
- Hancher, Leigh, and Michael Moran. 1998. "Organizing Regulatory Space". In *A Reader on Regulation*, edited by Robert Baldwin, Colin Scott and Christopher Hood, 148–172. Oxford Readings in Socio-Legal Studies. Oxford: Oxford University Press.
- Hanrahan, Benjamin V., David Martin, Jutta Willamowski, and John M. Carroll. 2019. "Investigating the Amazon Mechanical Turk Market Through Tool Design". *Computer Supported Cooperative Work* 28: 795–814.
- Heeks, Richard. 2017. "Decent Work and the Digital Economy: A Developing Country Perspective on Employment Impacts and Standards in Online Outsourcing, Crowdwork, etc.". Centre for Development Informatics Working Paper No. 71, University of Manchester.
- Henkel, Joachim, Simone Schöberl, and Oliver Alexy. 2014. "The Emergence of Openness: How and Why Firms Adopt Selective Revealing in Open Innovation". *Research Policy* 43 (5): 879–890.

- Herrmann, Andrea M., Petra Zaal, Maryse M.H. Chappin, and Brita Schemmann. 2019a. "We Don't Need No Education! How the Gig Economy Challenges the Current Education Paradigm of the Western World". In *31st Annual Conference of the Society for the Advancement of Socio-Economics (SASE): "Fathomless Futures: Algorithmic and Imagined"*. New York: Society for the Advancement of Socio-Economics.
- . 2019b. "Does Education Still Matter in Online Labor Markets?". In *Perspectives on the Sharing Economy*, edited by Dominika Wruk, Achim Oberg and Indre Maurer. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Hidalgo Cordero, Kruskaya, and Belén Valencia Castro. 2019. "Entre la precarización y el alivio cotidiano: Las plataformas Uber Eats y Glovo en Quito". Friedrich Ebert Stiftung Ecuador.
- Hillman, Robert A., and Jeffrey J. Rachlinski. 2002. "Standard-Form Contracting in the Electronic Age". *New York University Law Review* 77 (2): 429–495.
- Horan, Hubert. 2019. "Uber's Path of Destruction". *American Affairs* 3 (2).
- Horton, John, William R. Kerr, and Christopher Stanton. 2017. "Digital Labor Markets and Global Talent Flows", National Bureau of Economic Research (NBER) Working Paper No. 23398.
- Huws, Ursula, Neil Spencer, Dag Syrdal, and Kaire Holts. 2017. *Work in the European Gig Economy: Research Results from the UK, Sweden, Germany, Austria, the Netherlands, Switzerland and Italy*. Brussels and Hatfield, UK: Foundation for European Progressive Studies (FEPS), UNI-Europa and University of Hertfordshire.
- Hyman, Louis. 2018. *Temp: How American Work, American Business, and the American Dream Became Temporary*. New York: Viking.
- ILO (International Labour Organization). 2006. *Labour Inspection*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC.95/III(1B).
- . 2009. *ILO Standards on Occupational Safety and Health: Promoting a Safe and Healthy Working Environment*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC 98/III(1B).
- . 2012. *Giving Globalization a Human Face: General Survey on the Fundamental Conventions concerning Rights at Work in Light of the ILO Declaration on Social Justice for a Fair Globalization, 2008*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC 101/III(1B).
- . 2016. *Non-Standard Employment around the World: Understanding Challenges, Shaping Prospects*.
- . 2017a. *World Social Protection Report 2017–19: Universal Social Protection to Achieve the Sustainable Development Goals*.
- . 2017b. *Working Together to Promote a Safe and Healthy Working Environment: General Survey on the Occupational Safety and Health Instruments concerning the Promotional Framework, Construction, Mines and Agriculture*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC.106/III(1B) .
- . 2017c. *Handbook on Assessment of Labour Provisions in Trade and Investment Arrangements*.
- . 2018a. *Care Work and Care Jobs for the Future of Decent Work*.

- . 2018b. *Freedom of Association: Compilation of Decisions of the Committee on Freedom of Association*, 6th ed.
- . 2018c. *Ensuring Decent Working Time for the Future: General Survey concerning Working-time Instruments*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC.107/III(B).
- . 2019a. ILO Centenary Declaration for the Future of Work. International Labour Conference. 108th Session.
- . 2019b. *Universal Social Protection for Human Dignity, Social Justice and Sustainable Development: General Survey concerning the Social Protection Floors Recommendation, 2012 (No. 202)*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC.108/III/B.
- . 2019c. *Labour Provisions in G7 Trade Agreements: A Comparative Perspective*.
- . 2020a. "Unemployment Protection in the COVID-19 Crisis: Country Responses and Policy Considerations."
- . 2020b. "Sickness Benefits during Sick Leave and Quarantine: Country Responses and Policy Considerations in the Context of COVID-19."
- . 2020c. "Appeal: Venezuelan Refugees and Migrants in Latin America and the Caribbean", 11 August.
- . 2020d. *World Employment and Social Outlook: Trends 2020*.
- . 2020e. *Global Employment Trends for Youth 2020: Technology and the future of jobs*.
- . 2020f. "Social Protection Monitor: Social Protection Responses to the COVID-19 Crisis around the World".
- . 2020g. *Synthesis Report: Skills Shortages and Labour Migration in the Field of Information and Communication Technology in Canada, China, Germany, India, Indonesia, Singapore and Thailand*.
- . 2020h. *Promoting Employment and Decent Work in a Changing Landscape*. Report of the Committee of Experts on the Application of Conventions and Recommendations. ILC109/III(B).
- . 2020i. "Achieving Decent Work in Global Supply Chains". TMDWSC/2020.
- . 2020j. "The COVID-19 Response: Getting Gender Equality Right for a Better Future for Women at Work". Policy Brief.
- . 2021. *Working from home: From invisibility to decent work*.
- ILO, EU, and OECD. Forthcoming. Technical Expert Group Draft Handbook on the Measurement of Platform Employment.
- Ilsøe, Anna. 2020. "The Hilfr Agreement: Negotiating the Platform Economy in Denmark", FAOS Research Paper No. 176. Employment Relations Research Centre, Department of Sociology University of Copenhagen.
- Ilsøe, Anna, and Louise Weber Madsen. 2017. *Digitalisering af arbejdsmarkedet: Danskernes erfaring med digital automatisering og digitale platforme*. Copenhagen: FAOS, University of Copenhagen.
- India, Ministry of Electronics & Information Technology. 2020. "Report by the Committee of Experts on Non-Personal Data Governance Framework".
- India, National Sample Survey Office (NSSO). n.d. *Periodic Labor Force Survey, 2017–2018*.



- Irani, Lilly. 2015. "Difference and Dependence among Digital Workers: The Case of Amazon Mechanical Turk". *South Atlantic Quarterly* 114 (1): 225–234.
- ISSA (International Social Security Association). 2020. "Social Security Measures for the Self-Employed during the COVID-19 Crisis", 9 April.
- Jarrahi, Mohammad Hossein, Will Sutherland, Sarah Beth Nelson, and Steve Sawyer. 2019. "Platformic Management, Boundary Resources for Gig Work, and Worker Autonomy". *Computer Supported Cooperative Work (CSCW)* 29: 153–189.
- Jayne, Thomas, Felix Kwame Yeboah, and Carla Henry. 2017. "The Future of Work in African Agriculture: Trends and Drivers of Change", ILO Research Department Working Paper No. 25.
- Jesnes, Kristin, and Sigurd M. Nordli Oppegaard (eds). 2020. *Platform work in the Nordic models: Issues, Cases and Responses*. Copenhagen: Nordic Council of Ministers, Nordic Council of Ministers Secretariat.
- Johnson, Nicholas L. 2020. "Financial Platforms Are Disrupting More Than Just Lending (Infographic)". *Applico* (blog). <https://www.applicoinc.com/blog/infographic-platforms-disrupting-finance/>.
- Johnson, Khari. 2020. "CB Insights: AI Startup Funding Hit New High of \$26.6 Billion in 2019". *VentureBeat*, 22 January.
- Johnston, Hannah, and Chris Land-Kazlauskas. 2019. "Organizing On-Demand: Representation, Voice, and Collective Bargaining in the Gig Economy", ILO Conditions of Work and Employment Series No. 94.
- Johnstone, Richard, Shae McCrystal, Igor Nossar, Michael Quinlan, Michael Rawling, and Joellen Riley. 2012. *Beyond Employment: The Legal Regulation of Work Relationships*. Sydney: The Federation Press.
- Johnstone, Richard, and Andrew Stewart. 2015. "Swimming against the Tide: Australian Labor Regulation and the Fissured Workplace". *Comparative Labor Law & Policy Journal* 37 (1): 55–90.
- Josephs, Jonathan. 2020. "Just Eat to Stop Using Gig Economy Workers". *BBC News*, 14 August.
- Joyce, Simon, Denis Neumann, Vera Trappmann, and Charles Umney. 2020. "A Global Struggle: Worker Protest in the Platform Economy", European Trade Union Institute (ETUI) Policy Brief No. 2.
- Kalleberg, Arne L., and Michael Dunn. 2016. "Good Jobs, Bad Jobs in the Gig Economy". *Perspectives on Work* 20 (2): 10–14.
- Kalra, Aditya. 2020. "Amazon Faces New Antitrust Challenge from Indian Online Sellers: Legal Documents". *Reuters*, 26 August.
- Kapczynski, Amy. 2020. "The Law of Informational Capitalism". *Yale Law Journal* 129 (5): 1460–1515.
- Kässi, Otto, and Vili Lehdonvirta. 2018. "Online Labour Index: Measuring the Online Gig Economy for Policy and Research". *Technological Forecasting and Social Change* 137 (December): 241–248.
- . 2019. "Do Digital Skill Certificates Help New Workers Enter the Market? Evidence from an Online Labour Platform", Cesifo Working Paper No. 7810.

- Katz, Lawrence F., and Alan B. Krueger. 2016. *The Rise and Nature of Alternative Work Arrangements in the United States, 1995–2015*. National Bureau of Economic Research (NBER) Working Paper No. 22667.
- Kenney, Martin, and John Zysman. 2016. "The Rise of the Platform Economy". *Issues in Science and Technology* 32(3) (Spring).
- . 2018a. "Work and Value Creation in the Platform Economy", Social Science Research Network (SSRN) Scholarly Paper ID 3253673.
- . 2018b. "Entrepreneurial Finance in the Era of Intelligent Tools and Digital Platforms: Implications and Consequences for Work", Berkeley Roundtable on the International Economy (BRIE) Working Paper 2018-8.
- . 2019. "Unicorns, Cheshire Cats, and the New Dilemmas of Entrepreneurial Finance". *Venture Capital* 21 (1): 35–50.
- Kessler, Friedrich. 1943. "Contracts of Adhesion: Some Thoughts about Freedom of Contract". *Columbia Law Review* 43 (5): 629.
- Kilhoffer, Zachary, Willem Pieter De Groen, Karolien Lenaerts, Ine Smits, Harald Hauben, Willem Waeyaert, Elisa Giacumacatos, Jean-Philippe Lhernould, and Sophie Robin-Olivier. 2020. "Study to Gather Evidence on the Working Conditions of Platform Workers", VT/2018/032. Brussels: European Commission.
- Kim, Eugene K. 2020. "Labor's Antitrust Problem: A Case for Worker Welfare". *Yale Law Journal* 130.
- King-Dejardin, Amelita. 2019. *The Social Construction of Migrant Care Work: At the Intersection of Care, Migration and Gender*. Geneva: ILO.
- . Forthcoming. "Homeworking: Bad Job? Good Job", ILO Working Paper.
- Kingsley, Sara Constance, Mary L. Gray, and Siddharth Suri. 2015. "Accounting for Market Frictions and Power Asymmetries in Online Labor Markets: Market Friction and Power in Online Labor Markets". *Policy & Internet* 7 (4): 383–400.
- KPMG. 2018. "Unlocking the Value of the Platform Economy: Mastering the Good, the Bad and the Ugly". Amsterdam: Dutch Transformation Forum.
- Kuek, Siou Chek, Cecilia Paradi-Guilford, Toks Fayomi, Saori Imaizumi, Panos Ipeirotis, Patricia Pina, and Manpreet Singh. 2015. *The Global Opportunity in Online Outsourcing*. Washington, DC: World Bank.
- Kunthara, Sophia. 2019. "VC Dollars For China Take A Dip In 2019". *Crunchbase News*, 5 December.
- Lakhani, Karim R., Kevin J. Boudreau, Po-Ru Loh, Lars Backstrom, Carliss Baldwin, Eric Lonstein, Mike Lydon, Alan MacCormack, Ramy A. Arnaout, and Eva C. Guinan. 2013. "Prize-Based Contests Can Provide Solutions to Computational Biology Problems". *Nature Biotechnology* 31 (2): 108–111.
- Lakhani, Karim R., David A. Garvin, and Eric Lonstein. 2012. "TopCoder (A): Developing Software through Crowdsourcing", Harvard Business School Case Study 610-032.
- La Salle, Dominique, and Greta Cartoceti. 2019. "Social Security for the Digital Age: Addressing the New Challenges and Opportunities for Social Security Systems". Geneva: ISSA.
- Lee, K. Wilson. 2020. "Ghost kitchens: Reasons to Adopt this Type of Food Delivery Model". *Forbes*, 11 December.

- Lee, Min Kyung, Daniel Kusbit, Evan Metsky, and Laura Dabbish. 2015. "Working with Machines: The Impact of Algorithmic and Data-Driven Management on Human Workers". *CHI 2015*, 1603–1612.
- Lehdonvirta, V., H. Barnard, M. Graham, and I. Hjorth. 2014. "Online Labour Markets: Levelling the Playing Field for International Service Markets?" In *Crowdsourcing for Politics and Policy*. Oxford: Oxford Internet Institute.
- Lerner, Josh, and Jean Tirole. 2005. "The Economics of Technology Sharing: Open Source and Beyond". *The Journal of Economic Perspectives* 19 (2): 99–120.
- Levy, Ari. 2019. "Alphabet's Investment in Uber Has Multiplied by 20-Fold since 2013". *CNBC*, 11 April.
- Liang, Chen, Yili Hong, Bin Gu, and Jing Peng. 2018. "Gender Wage Gap in Online Gig Economy and Gender Differences in Job Preferences", NET Institute Working Paper No. 18-03.
- Lianos, Ioannis, Nicola Countouris, and Valerio De Stefano. 2019. "Re-Thinking the Competition Law/Labour Law Interaction: Promoting a Fairer Labour Market". *European Labour Law Journal* 10 (3): 291–333.
- Liu, Weihua, Xiaoyu Yan, Wanying Wei, and Dong Xie. 2019. "Pricing Decisions for Service Platform with Provider's Threshold Participating Quantity, Value-Added Service and Matching Ability". *Transportation Research Part E: Logistics and Transportation Review* 122: 410–432.
- Lobel, Orly. 2016. "The Law of the Platform". *Minnesota Law Review* 101 (1): 87–166.
- López Mourello, Elva. 2020. *Work on delivery platforms in Argentina: Analysis and policy recommendations*, Buenos Aires: ILO Country Office for Argentina.
- Malin, Martin H. 2018. "Protecting Platform Workers in the Gig Economy: Look to the FTC". *Indiana Law Review* 51 (2): 377–412.
- Mao, Ke, Licia Capra, Mark Harman, and Yue Jia. 2017. "A Survey of the Use of Crowdsourcing in Software Engineering". *Journal of Systems and Software* 126 (April): 57–84.
- Markov, Kroum, and María Marta Travieso. 2019. "Technologies, the Future of Work and the ILO's Normative Approach". In *ILO100 Law for Social Justice*, edited by George P. Politakis, Tomi Kohiyama and Thomas Lieby, 953–980. Geneva: ILO.
- Marshall, Aarian. 2020. "Covid-19 Opens the Door for Gig Workers to Win Sick Pay". *Wired*, 7 June.
- Martens, Bertin. 2016. "An Economic Policy Perspective on Online Platforms". JRC Technical Reports, Institute for Prospective Technological Studies Digital Economy Working Paper 2016/05. European Commission.
- McCrystal, Shae. 2014. "Collective Bargaining Beyond the Boundaries of Employment: A Comparative Analysis". *Melbourne University Law Review* 37 (3): 662–698.
- McGee, Luke. 2020. "Self-Isolate or Get Paid? That's the Choice for Gig Workers in a Virus Outbreak, and It's a Big Problem for the Rest of Us". *CNN*, 8 March.
- Mehta, Neel, Parth Detroja, and Aditya Agashe. 2018. "Amazon Changes Prices on Its Products about Every 10 Minutes: Here's How and Why They Do It". *Business Insider*, 10 August.

- Mendonca, Jochelle, and Nilesh Christopher. 2018. "India's Graduates Line up to Rid Facebook of Inappropriate Content". *The Economic Times*, 5 September.
- MGI (McKinsey Global Institute). 2016. "Independent Work: Choice, Necessity, and the Gig Economy". McKinsey Global Institute.
- Miric, Milan, Kevin J. Boudreau, and Lars Bo Jeppesen. 2019. "Protecting Their Digital Assets: The Use of Formal and Informal Appropriability Strategies by App Developers". *Research Policy* 48 (8).
- MIT (Massachusetts Institute of Technology). 2020. *The Work of the Future: Building Better Jobs in an Age of Intelligent Machines*. Cambridge: MIT.
- Moazed, Alex. 2019. "Platform Businesses Account for 20% of S&P 500 Returns". *Applico* (blog), 26 August. <https://www.applico.com/blog/platform-businesses-account-for-20-of-sp-500-returns/>.
- Moazed, Alex, and Nicholas L. Johnson. 2016. *Modern Monopolies: What It Takes to Dominate the 21st Century Economy*. New York: St. Martin's Press.
- Moore, Phoebe V., and Simon Joyce. 2020. "Black box or hidden abode? The expansion and exposure of platform work managerialism". *Review of International Political Economy*, 27 (4): 926–948.
- Morgenstern, Felice. 1985. "The Importance, in Practice, of Conflicts of Labour Law". *International Labour Review* 124 (2): 119–132.
- Morgenstern, Felice, and Blaise Knapp. 1978. "Multinational Enterprises and the Extraterritorial Application of Labour Law". *International and Comparative Law Quarterly* 27 (4): 769–793.
- Mulcahy, Diane. 2016. "Who Wins in the Gig Economy, and Who Loses". *Harvard Business Review*, 27 October.
- Mundlak, Guy. 2009. "De-Territorializing Labor Law". *Law & Ethics of Human Rights* 3 (2): 189–222.
- . 2020. *Organizing Matters: Two Logics of Trade Union Representation*. Cheltenham, UK: Edward Elgar.
- Murali, Anand. 2019. "How India's Data Labellers Are Powering the Global AI Race". *Factor Daily*, 21 March.
- Naidu, Suresh, Eric A. Posner, and E. Glen Weyl. 2018. "Antitrust Remedies for Labor Market Power". *Harvard Law Review* 132 (2): 536–601.
- Namgoong, June. 2019. "Two Sides of One Coin: The US-Guatemala Arbitration and the Dual Structure of Labour Provisions in the CPTPP". *International Journal of Comparative Labour Law and Industrial Relations* 35 (4): 483–510.
- Narula, Prayag, Philipp Gutheim, David Rolnitzky, Anand Kulkarni, and Bjoern Hartmann. 2011. "MobileWorks: A Mobile Crowdsourcing Platform for Workers at the Bottom of the Pyramid", Human Computation Conference, Papers from the 2011 AAAI (Association for the Advancement of Artificial Intelligence) Workshop, San Francisco, California, 8 August.
- Nedelkoska, Ljubica, and Glenda Quintini. 2018. "Automation, Skills Use and Training", OECD Social, Employment and Migration Working Papers No. 202.

- Neeraj, R.S. 2017. "Trade Rules on Source-Code Deepening the Digital Inequities by Locking up the Software Fortress", Centre for WTO Studies, Indian Institute of Foreign Trade Working Paper CWS/WP/200/37.
- Nguyen, Quynh Anh, and Nuno Cunha. 2019. *Extension of Social Security to Workers in Informal Employment in the ASEAN Region*. Bangkok: ILO.
- Nitzberg, Mark, Timo Seppälä, and John Zysman. 2019. "The Hype Has Eclipsed the Limitations of Third-Wave Artificial Intelligence". *ETLA Economic Research*, 12 May.
- Nyawira, Lindsay. 2019. "Digital Taxi Drivers Go on Strike, Demand Higher Rates". *The Star*, 15 July.
- Ochieng, Abiud. 2019. "Online App Taxi Drivers in Kenya to Go on Strike over Pricing Deal". *The East African*, 15 July.
- OECD (Organisation for Economic Co-operation and Development). 2014. *Addressing the Tax Challenges of the Digital Economy*.
- . 2018. "The Future of Social Protection: What Works for Non-Standard Workers?", Policy Brief.
- . 2019a. *An Introduction to Online Platforms and Their Role in the Digital Transformation*.
- . 2019b. "Implications of E-Commerce for Competition Policy: Background Note".
- . 2019c. *OECD Employment Outlook 2019: The Future of Work*.
- . 2020a. *Digital Economy Outlook 2020*.
- . 2020b. *A Roadmap toward a Common Framework for Measuring the Digital Economy*. Report for the G20 Digital Economy Task Force, Saudi Arabia, 2020.
- . 2020c. "Supporting People and Companies to Deal with the COVID-19 Virus: Options for an Immediate Employment and Social-Policy Response", ELS Policy Brief on the Policy Response to the COVID-19 Crisis.
- Ogembo, Daisy, and Vili Lehdonvirta. 2020. "Taxing Earnings from the Platform Economy: An EU Digital Single Window for Income Data?". *British Tax Review*, 82–101.
- O'Neill, Jacki. 2018. "From Crowdwork to Ola Auto: Can Platform Economies Improve Livelihoods in Emerging Markets?". In *The Future of Work in the Global South*, edited by H. Galperin and A. Alarcon, 28–31. Ottawa: International Development Research Centre.
- Oshagbemi, Titus. 1999. "Overall Job Satisfaction: How Good Are Single versus Multiple-item Measures?". *Journal of Managerial Psychology* 14 (5): 388–403.
- Osman, Osman Mohamed. 2019. "There Are More Female Cab Drivers on Nairobi Roads than Ever before and More Are Coming". *Quartz Africa*, 26 January.
- Ottaviano, Juan Manuel, Juan O'Farrell, and Matías Maito. 2019. "Organización sindical de trabajadores de plataformas digitales y criterios para el diseño de políticas públicas", *Análisis* No. 40. Friedrich Ebert Stiftung Argentina.
- Online Labour Observatory (iLabour Project). n.d. Oxford Internet Institute and International Labour Organization. Database.
- Parayil, Govindan (ed.) 2005. *Political Economy and Information Capitalism in India*. Technology, Globalisation and Development Series. London: Palgrave Macmillan UK.

- Parker, Christine, and John Braithwaite. 2003. "Regulation". In *The Oxford Handbook of Legal Studies*, edited by Mark Tushnet and Peter Cane, 119–145. Oxford: Oxford University Press.
- Parker, Geoffrey G., Marshall W. Van Alstyne, and Sangeet Paul Choudary. 2016. *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*. New York, NY: W. W. Norton & Company.
- Parthasarathy, Balaji. 2010. "The Computer Software Industry as a Vehicle of Late Industrialization: Lessons from the Indian Case". *Journal of the Asia Pacific Economy* 15 (3): 247–270.
- Pasquale, Frank. 2015. *The Black Box Society*. Cambridge, MA; London: Harvard University Press.
- Peng, Qingwen, and Dayou Cao. 2016. "是劳动关系还是劳务关系? 以滴滴出行为例解析中国情境下互联网约车平台 [Labour relationship or Labour service relationship? An analysis of platform-based car booking using the example of Didi]". *中国人力资源开发 [Human Resources Development of China]*: 93–97.
- Pesole, Annarosa, Maria Cesira Urzi Brancati, Enrique Fernández-Macías, Federico Biagi, and Ignacio González Vázquez. 2018. *Platform Workers in Europe: Evidence from the COLLEEM Survey*. Luxembourg: Publications Office of the European Union.
- Pesole, Annarosa, and Uma Rani. Forthcoming. "How many online workers?: Estimates based on selected online web-based and location-based platforms", European Commission Working Paper.
- Pichault, François, and Tui McKeown. 2019. "Autonomy at Work in the Gig Economy: Analysing Work Status, Work Content and Working Conditions of Independent Professionals". *New Technology, Work and Employment* 34 (1): 59–72.
- Pinsof, Jennifer. 2016. "A New Take on an Old Problem: Employee Misclassification in the Modern Gig-Economy Notes". *Michigan Telecommunications and Technology Law Review* 22 (2): 341–374.
- PitchBook. 2020. "US Venture Capital Investment Surpasses \$130 Billion in 2019 for Second Consecutive Year". *PRNewswire*, 14 January.
- Pofeldt, Elaine. 2016. "Upwork's New Pricing Model Sparks Outcry". *Forbes*, 7 May.
- Prabhat, Shantanu, Sneha Nanavati, and Nimmi Rangaswamy. 2019. "India's 'Uberwallah': Profiling Uber Drivers in the Gig Economy". In *Proceedings of the Tenth International Conference on Information and Communication Technologies and Development*, 1–5. ICTD '19. Ahmedabad, India: Association for Computing Machinery.
- Prassl, Jeremias. 2015. *The Concept of the Employer*. New York: Oxford University Press.
- . 2018. *Humans as a Service: The Promise and Perils of Work in the Gig Economy*. New York: Oxford University Press.
- Prassl, Jeremias, and Martin Risak. 2016. "Uber, Taskrabbit, and Co.: Platforms as Employers – Rethinking the Legal Analysis of Crowdwork". *Comparative Labor Law and Policy Journal* 37 (3): 619–651.
- Rahman, K. Sabeel, and Kathleen Thelen. 2019. "The Rise of the Platform Business Model and the Transformation of Twenty-First Century Capitalism". *Politics & Society* 47 (2): 177–204.

- Ram, Aliya. 2019. "Europe's AI Start-ups Often Do Not Use AI, Study Finds". *Financial Times*, 5 March.
- Rani, Uma, and Marianne Furrer. Forthcoming. "Digital Labour Platforms and New Forms of Flexible Work in Developing Countries: Algorithmic Management of Work and Workers". *Competition & Change*.
- Rani, Uma, and Parminder Jeet Singh. 2019. "Digital Platforms, Data, and Development: Implications for Workers in Developing Economies". *Comparative Labour Law and Policy Journal* 41 (1): 263–287.
- Risak, Martin, and Doris Lutz. 2020. *Arbeit in der Gig-Economy: Rechtsfragen neuer Arbeitsformen in Crowd und Cloud*. Vienna: ÖGB Verlag.
- Rochet, Jean-Charles, and Jean Tirole. 2003. "Platform Competition in Two-Sided Markets." *Journal of the European Economic Association* 1 (4): 990–1029.
- Rodríguez Fernández, Maria Luz. 2017. "Plataformas, Microworkers y Otros Retos del Trabajo en La Era Digital". In *El Futuro del Trabajo que Queremos*, edited by Laura Mora Cabello de Alba and Maria Luz Rodríguez Fernández, 95–113. Albacete: Bomarzo.
- . 2018. "Sindicalismo y Negociación Colectiva 4.0". *Temas Laborales* 144: 27–41.
- . 2019. "Calificación jurídica de la relación que une a los prestadores de servicios con las plataformas digitales". In *Plataformas digitales y mercado de trabajo*, edited by Maria Luz Rodríguez Fernández, 57–89. Madrid: Ministerio de Trabajo, Migraciones y Seguridad Social.
- Rogers, Brishen. 2018. "Fissuring, Data-Driven Governance, and Platform Economy Labor Standards". In *The Cambridge Handbook of Law of the Sharing Economy*, edited by Nestor M. Davidson, Michèle Finck and John J. Infranca, 303–315. Online: Cambridge University Press.
- Rolandsson, Bertil (ed.). 2020. *Digital Transformations of Traditional Work in the Nordic countries*. Report from The Future of Work: Opportunities and Challenges for the NORDIC models. Copenhagen: Nordic Council of Ministers, Nordic Council of Ministers Secretariat.
- Rose, Michael. 2003. "Good Deal, Bad Deal? Job Satisfaction in Occupations". *Work, Employment and Society* 17 (3): 503–530.
- Rosenblat, Alex, and Luke Stark. 2016. "Algorithmic Labor and Information Asymmetries: A Case Study of Uber's Drivers". *International Journal of Communication* 10: 3758–3784.
- Rowley, Jason D. 2020. "The Q4/EOY 2019 Global VC Report: A Strong End to a Good, but not Fantastic, Year". *Crunchbase News*, 8 January.
- Roy, Shourya, Chithralekha Balamurugan, and Sujit Gujar. 2013. "Sustainable Employment in India by Crowdsourcing Enterprise Tasks". In *ACM DEV '13: Proceedings of the 3rd ACM Symposium on Computing for Development*, 1–2. New York: Association for Computing Machinery (ACM).
- Sadowski, Jathan. 2016. "Companies Are Making Money from Our Personal Data – But at What Cost?" *The Guardian*, 31 August.
- Sakkal, Paul, and Sumeyya Ilanbey. 2020. "Masks Made Mandatory, Aged Care Visits Limited as 363 Cases Announced". *The Age*, 19 July.

- Sanders, Donald E., and Patricia Pattison. 2016. "Worker Characterization in a Gig Economy Viewed through an Uber Centric Lens". *Southern Law Journal* 26 (2): 297–300.
- Santos, Alvaro. 2018. "The Lessons of TPP and the Future of Labor Chapters in Trade Agreements", Institute for International Law and Justice (IILJ) Working Paper 2018/3, MegaReg Series.
- Santos, Filipe M., and Kathleen M. Eisenhardt. 2005. "Organizational Boundaries and Theories of Organization". *Organization Science* 16 (5): 491–508.
- Scheiber, Noam. 2018. "Gig Economy Business Model Dealt a Blow in California Ruling". *The New York Times*, 30 April.
- Schiek, Dagmar, and Andrea Gideon. 2018. "Outsmarting the Gig-Economy through Collective Bargaining: EU Competition Law as a Barrier to Smart Cities?". *International Review of Law, Computers & Technology* 32 (2–3): 275–294.
- Schleifer, Theodore. 2019. "SoftBank, the Most Powerful – and Controversial – Tech Investor in Silicon Valley, Explained". *Vox*, 10 May.
- Schmidt, Florian A. 2017. *Digital Labour Markets in the Platform Economy: Mapping the Political Challenges of Crowd Work and Gig Work*. Bonn: Friedrich-Ebert-Stiftung.
- . 2019. "Crowdsourced Production of AI Training Data: How Human Workers Teach Self-Driving Cars how to See", Hans-Böckler-Stiftung Working Paper No. 155.
- Schorpf, Philip, Jorg Flecker, and Annika Schonauer. 2017. "On Call for One's Online Reputation: Control and Time in Creative Crowd Work". In *The New Digital Workplace: How New Technologies Revolutionise Work*, edited by Kendra Briken, Shiona Chillias, Martin Krzywdzinski and Abigail Marks, 89–111. Palgrave MacMillan.
- Schwellnus, Cyrille, Assaf Geva, Mathilde Pak, and Rafael Veiel. 2019. "Gig Economy Platforms: Boon or Bane?" OECD Economics Department Working Papers No. 1550.
- Scott, Colin. 2001. "Analysing Regulatory Space: Fragmented Resources and Institutional Design". *Public Law* (Summer): 283–305.
- Sheriff, Mohamed K. 2018. "Big Data Revolution: Is It a Business Disruption?". In *Emerging Challenges in Business, Optimization, Technology, and Industry*, edited by Lotfi Tadj and Ajay K. Garg, 79–91. Cham, Switzerland: Springer International Publishing.
- Shevchuk, Andrey, and Denis Strebkov. 2017. "Entrepreneurial Potential in the Digital Freelance Economy: Evidence from the Russian-Language Internet". In *Entrepreneurship in Transition Economies: Diversity, Trends, and Perspectives*, edited by Arnis Sauka and Alexander Chepurensko, 401–419. Societies and Political Orders in Transition Series. Cham, Switzerland: Springer International Publishing.
- . Forthcoming. "Freelance Platform Work in Russia, 2009–19". Geneva: ILO.
- Silberman, M. Six. 2015. "Human-Centered Computing and the Future of Work: Lessons from Mechanical Turk and Turkopticon, 2008–2015". University of California, Irvine.
- Silberman, M. Six, and Lilly Irani. 2016. "Operating an Employer Reputation System: Lessons from Turkopticon, 2008–2015". *Comparative Labor Law & Policy Journal* 37 (3): 505–541.
- Singh, Manish. 2019. "Indian Tech Startups Raised a Record \$14.5B in 2019". *TechCrunch*, 30 December.



- Singh, Parminder Jeet. 2020. "Economic Rights in a Data-Based Society". Bonn: Friedrich-Ebert-Stiftung.
- Smith, Sanya Reid. 2017. "Some Preliminary Implications of WTO Source Code Proposal", Third World Network Briefings.
- Sonnemaker, Tyler. 2020. "Indian Business Owners Are Furious about Amazon's \$1 Billion Expansion into Their Country and Are Calling Jeff Bezos an 'Economic Terrorist'". *Business Insider*, 15 January.
- Soon, Stella, and Saheli Roy Choudhury. 2019. "Grab CEO Says the Company Can Go Public 'Once We're Profitable'". *CNBC*, 14 November.
- S&P Global Market Intelligence. 2019. "Flipkart Is No. 1 in India but Faces Formidable Foe in Amazon, Say Experts", 10 October.
- Stanford, Jim. 2017. "The Resurgence of Gig Work: Historical and Theoretical Perspectives". *The Economic and Labour Relations Review* 28 (3): 382–401.
- Startup Genome. 2020. "The Global Startup Ecosystem Report 2020".
- Statistics Finland (SF). 2017. *Labour force survey: Platform jobs 2017*. Helsinki: Statistics Finland.
- Stephany, Fabian, Michael Dunn, Steven Sawyer, and Vili Lehdonvirta. 2020. "Distancing Bonus or Downscaling Loss: The Changing Livelihood of US Online Workers in Times of COVID-19". *Journal of Economic and Social Geography* 111 (3): 561–573.
- Stewart, Andrew, and Shae McCrystal. 2019. "Labour Regulation and the Great Divide: Does the Gig Economy Require a New Category of Worker?". *Australian Journal of Labour Law* 32 (1): 4–22.
- Stewart, Andrew, and Jim Stanford. 2017. "Regulating Work in the Gig Economy: What Are the Options?". *The Economic and Labour Relations Review* 28 (3): 420–437.
- Stone, Katharine. 2004. *From Fidgets to Digits: Employment Regulation for the Changing Workplace*. New York: Cambridge University Press.
- Straits Times, The*. 2015. "Indonesia's Muslim Women Hail Female-Only Motorbike Taxis", 30 December.
- Stucke, Maurice E. 2018. "Should We Be Concerned about Data-Opolies?". *Georgetown Law Technology Review* 2 (2): 275–324.
- Sun, Sophie, Julie Yujie Chen, and Uma Rani. Forthcoming. "From Flexible Labor to 'Sticky Labor': A Tracking Survey of Workers in the Food-Delivery Platform Economy of China". Geneva: ILO.
- Supiot, Alain. 2001. *Beyond Employment. Changes in Work and the Future of Labour Law in Europe*. Oxford: Oxford University Press.
- Surie, Aditi. 2018. "Are Ola and Uber Drivers Entrepreneurs or Exploited workers". *Economic and Political Weekly* 53 (24).
- Surie, Aditi, and Jyothi Koduganti. 2016. "The Emerging Nature of Work in Platform Economy Companies in Bengaluru, India: The Case of Uber and Ola Cab Drivers". *E-Journal of International and Comparative Labour Studies* 5 (3).
- Surie, Aditi, and Lakshme V. Sharma. 2019. "Climate Change, Agrarian Distress, and the Role of Digital Labour Markets: Evidence from Bengaluru, Karnataka". *Decision* 46: 127–138.

- Sweden, Government Offices (SOU). 2017. *Ett arbetsliv i förändring – hur påverkas ansvaret för arbetsmiljön*.
- SwiggyBytes. 2017. "Swiggy's Response: A Note from the CEO". 31 July.
- Switzerland FSO (Federal Statistical Office). 2020. "Internet-mediated Platform Work Is Not Very Common in Switzerland", 19 May.
- Tauchert, Christoph, Peter Buxmann and Jannis Lambinus. 2020. "Crowdsourcing Data Science: A Qualitative Analysis of Organizations' Usage of Kaggle Competitions". In *Proceedings of the 53rd Hawaii International Conference on System Sciences*. Manoa: University of Hawaii.
- Teare, Gene, and Sophia Kunthara. 2020. "European Venture Report: VC Dollars Rise In 2019". *Crunchbase News*, 14 January.
- Teece, David J. 2017. "Dynamic Capabilities and (Digital) Platform Lifecycles". In *Entrepreneurship, Innovation, and Platforms*, edited by Jeffrey L. Furman, Annabelle Gawer, Brian S. Silverman and Scott Stern. 211–225. Advances in Strategic Management Series, Vol. 37. Bingley, UK: Emerald Publishing.
- . 2018a. "Business Models and Dynamic Capabilities". *Long Range Planning* 51 (1): 40–49.
- . 2018b. "Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world". *Research Policy* 47: 1367–1387.
- Terwiesch, Christian, and Yi Xu. 2008. "Innovation Contests, Open Innovation, and Multiagent Problem Solving". *Management Science* 54 (9): 1529–1543.
- Teubner, Gunther. 1998. "Legal Irritants: Good Faith in British Law or How Unifying Law Ends up in New Divergences". *The Modern Law Review* 61 (1): 11–32.
- Teubner, Timm, Marc T.P. Adam, and Florian Hawlitschek. 2019. "Unlocking Online Reputation". *Business & Information Systems Engineering*.
- Thakker, Dharmesh, Max Schireson, and Dan Nguyen-Huu. 2017. "Tracking the Explosive Growth of Open-Source Software". *TechCrunch* (blog), 7 April. <https://social.techcrunch.com/2017/04/07/tracking-the-explosive-growth-of-open-source-software/>.
- Tham, Joo-Cheong, and Keith D. Ewing. 2016. "Labour Clauses in the TPP and TTIP: A Comparison without a Difference Special Issue – The Trans-Pacific Partnership". *Melbourne Journal of International Law* 17 (2): 369–403.
- Todolí-Signes, Adrián. 2019. "Algorithms, Artificial Intelligence and Automated Decisions Concerning Workers and the Risks of Discrimination: The Necessary Collective Governance of Data Protection". *Transfer: European Review of Labour and Research* 25 (4): 465–481.
- Toews, Rob. 2019. "AI Will Transform the Field of Law". *Forbes*, 19 December.
- Tubaro, Paola, and Antonio A. Casilli. 2019. "Micro-Work, Artificial Intelligence and the Automotive Industry". *Journal of Industrial and Business Economics* 46 (3): 333–345.
- Tubaro, Paola, Antonio A. Casilli, and Marion Coville. 2020. "The Trainer, the Verifier, the Imitator: Three Ways in which Human Platform Workers Support Artificial Intelligence". *Big Data and Society* 7 (1).
- Uber. 2020a. *2019 Annual Report*.
- . 2020b. 2020 Investor presentation, 6 February.

- . 2020c. “What does the background check look for?” <https://help.uber.com/driving-and-delivering/article/what-does-the-background-check-look-for?no-deId=ee210269-89bf-4bd9-87f6-43471300ebf2>.
- UN (United Nations). 2019. *Report of the UN Secretary-General's High-Level Panel on Digital Cooperation: The Age of Digital Interdependence*.
- UNCTAD (United Nations Conference on Trade and Development). 2018. *Trade and Development Report 2018: Power, Platforms and the Free Trade Delusion*.
- . 2019. *Digital Economy Report 2019: Value Creation and Capture – Implications for Developing Countries*.
- United Kingdom, Department for Business, Energy and Industrial Strategy. 2018a. “The Experiences of Individuals in the Gig Economy”.
- . 2018b. “The Characteristics of Those in the Gig Economy”.
- United Kingdom, Office for National Statistics. 2021. “Coronavirus (COVID-19) Related Deaths by Occupation, England and Wales: Deaths registered between 9 March and 28 December 2020”.
- United States, Bureau of Labor Statistics (BLS). 2018. “Electronically Mediated Work: New Questions in the Contingent Worker Supplement”. *BLS Monthly Labor Review*, September.
- United States, Census Bureau. 2017. *Current Population Survey, 2017*.
- Upwork. 2019. *Annual Report 2019*.
- . 2020. “Upwork Investor Relations: Upwork Reports Third Quarter 2020 Financial Results”, 4 November.
- Urzi Brancati, Maria Cesira, Annarosa Pesole, and Enrique Fernández Macías. 2020. “New Evidence on Platform Workers in Europe”, EUR 29958 EEN. Luxembourg: Publications Office of the European Union.
- Ustek-Spilda, Funda, Mark Graham, Alessio Bertolini, Srujana Katta, Fabian Ferrari, and Kelle Howson. 2020. “From Social Distancing to Social Solidarity: Gig Economy and the Covid-19”. *OECD Development Matters* (blog), 27 March. <https://oecd-development-matters.org/2020/03/27/from-social-distancing-to-social-solidarity-gig-economy-and-the-covid-19/>.
- Vallas, Steven P. 2018. “Platform Capitalism: What’s at Stake for Workers?” *New Labor Forum* 28 (1): 48–59.
- van Doorn, N. 2017. “Platform Labor: On the Gendered and Racialized Exploitation of Low-Income Service Work in the ‘On-Demand’ Economy”. *Information, Communication & Society* 20(6): 898–914.
- Venturini, Jamila, Luiza Louzada, Marilia Maciel, Nicolo Zingales, Konstantinos Stylianou, and Luca Belli. 2016. *Terms of Service and Human Rights: An Analysis of Online Platform Contracts*. Council of Europe and FGV Direito Rio: Editora Revan.
- Waas, Bernd, Wilma B. Liebman, Andrew Lyubarsky, and Katsutoshi Kezuka. 2017. *Crowdwork: A Comparative Law Perspective*. Frankfurt am Main: Bund-Verlag.
- Webster, Edward. 2020. “The Uberisation of work: the challenge of regulating platform capitalism. A commentary”. *International Review of Applied Economics*, 34 (4): 512–521.

- WEC (World Employment Confederation). 2020. "A Decent Level Playing Field for Platform Work: Policy Recommendations for Sustainable Growth of Platform Work and the Provision of Quality Online Talent Platform Services".
- WeeTracker. 2020. "African Venture Capital and Tech Startups Funding Report 2019", 4 January.
- WEF (World Economic Forum). 2020. *Charter of Principles for Good Platform Work*. Geneva.
- Weil, David. 2014. *The Fissured Workplace: Why Work Became So Bad for So Many and What Can Be Done to Improve It*. Cambridge, MA: Harvard University Press.
- World Bank, The. 2020. *Beaten and broken? Informality and COVID-19*. Washington, DC: The World Bank.
- Wood, Alex J. 2015. "Networks of Injustice and Worker Mobilisation at Walmart". *Industrial Relations Journal* 46 (4): 259–274.
- Wood, Alex J., Mark Graham, Vili Lehdonvirta, and Isis Hjorth. 2019a. "Networked but Commodified: The (Dis)Embeddedness of Digital Labour in the Gig Economy". *Sociology* 53 (5): 931–950.
- . 2019b. "Good Gig, Bad Gig: Autonomy and Algorithmic Control in the Global Gig Economy". *Work, Employment and Society* 33 (1): 56–75.
- Wood, Alex J., Vili Lehdonvirta, and Mark Graham. 2018. "Workers of the Internet Unite? Online Freelancer Organisation among Remote Gig Economy Workers in Six Asian and African Countries". *New Technology, Work and Employment* 33 (2): 95–112.
- Woodcock, Jamie, and Mark Graham. 2020. *The Gig Economy: A Critical Introduction*. New York: Polity Press.
- Wu, Qingjun, Hao Zhang, Zhen Li, and Kai Liu. 2019. "Labor Control in the Gig Economy: Evidence from Uber in China". *Journal of Industrial Relations* 61 (4): 574–596.
- Xie, Zengyi. 2018. "互联网平台用工劳动关系认定 [Labor Relations and Legal Status of Online Platform Workers]". *Peking University Law Journal* 30 (6): 1546–1569.
- Yan, Tian. 2018. "平台经济用工与新业态劳动关系 [Employment under the Platform Economy and New Labor Relations]". *China Law Review* 24 (6): 119–120.
- Yuan, Li. 2018. "Customer Died. Will That Be a Wake-up Call for China's Tech Scene?". *The New York Times*, 29 August.
- Zhao, Yang, Stephan von Delft, Anna Morgan-Thomas, and Trevor Buck. 2019. "The Evolution of Platform Business Models: Exploring Competitive Battles in the World of Platforms". *Long Range Planning* 53 (4): 101892.
- Zou, Mimi. 2017a. "The Regulatory Challenges of Uberization in China: Classifying Ride-Hailing Drivers". *International Journal of Comparative Labour Law and Industrial Relations* 33 (2): 269–294.
- . 2017b. "Regulating the Fissured Workplace: The Notion of the Employer in Chinese Labour Law". *Bulletin of Comparative Labour Relations*, 183–203.

## Advancing social justice, promoting decent work

The International Labour Organization is the United Nations agency for the world of work. We bring together governments, employers and workers to drive a human-centred approach to the future of work through employment creation, rights at work, social protection and social dialogue.

This ILO flagship report explores how the contemporary platform economy is transforming the way work is organized, and analyses the impact of digital labour platforms on enterprises, workers and society as a whole.

The report offers a comprehensive picture of the experience of workers and businesses on online web-based and location-based platforms, drawing on surveys and interviews with some 12,000 workers and representatives of 85 businesses around the world, in multiple sectors. It also provides insights into the business model of digital labour platforms, examines regulatory responses around the globe, and presents a way forward to ensure that all platform work is decent work.

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