

Digital platform work and occupational safety and health: overview of regulation, policies, practices and research

Report

Authors:

Karolien Lenaerts (HIVA-KU Leuven), Willem Waeyaert (EFTHEIA), Dirk Gillis (HIVA-KU Leuven), Ine Smits (HIVA-KU Leuven), Harald Hauben (EFTHEIA)

The authors would like to express their gratitude for the valuable feedback and support received from their colleagues, Monique Ramioul (HIVA-KU Leuven), Claire Dupont (Milieu), Inge Vandenbulcke and Sofia Falcone (EFTHEIA) and from the EU-OSHA project management team, Maurizio Curtarelli and Emmanuelle Brun. The authors are also grateful to all experts and stakeholders who kindly participated in an interview. Their contribution has been invaluable for this project.

Project management: Maurizio Curtarelli, Emmanuelle Brun (EU-OSHA).

This report was commissioned by the European Agency for Safety and Health at Work (EU-OSHA). Its contents, including any opinions and/or conclusions expressed, are those of the authors alone and do not necessarily reflect the views of EU-OSHA.

**Europe Direct is a service to help you find answers
to your questions about the European Union**

Freephone number (*):

00 800 6 7 8 9 10 11

(*) Certain mobile telephone operators do not allow access to 00 800 numbers, or these calls may be billed.

ISBN: 978-92-9479-598-4

Doi:10.2802/236095

More information on the European Union is available on the Internet (<http://europa.eu>).

Reproduction is authorised provided the source is acknowledged.

© European Agency for Safety and Health at Work, 2022

Table of contents

1	Introduction	5
1.1	Background.....	5
1.2	Policy context.....	5
1.3	Aims of this report.....	7
2	Conceptual framework.....	8
2.1	Defining digital platform work	8
2.2	Digital platform work taxonomy	10
3	OSH challenges and opportunities of platform work	13
3.1	Introduction	13
3.2	Case studies of four types of digital platform work.....	14
3.3	OSH challenges related to digital platform work	16
3.4	Opportunities to improve OSH made possible by digital labour platform/platform work	27
4	Policies, practices, initiatives and actions related to OSH in digital platform work.....	28
4.1	Introduction	28
4.2	The EU OSH Strategic Framework	28
4.3	Policies and practices targeting OSH in digital platform work.....	29
4.4	Deep dive: four policy case studies	31
5	Conclusions and policy implications	39
5.1	OSH challenges in digital platform work.....	39
5.2	OSH risk prevention and management in digital platform work	40
6	References	45
7	Annexes.....	52
7.1	Annex 1: Methodology	52
7.2	Annex 2 Overview of the challenges of OSH management in platform work.....	55

List of tables

Table 1: Taxonomy of digital platform work.....	10
Table 2: Platforms by level of control in various dimensions	12
Table 3: Various health and safety issues in selected examples of platform work	15
Table 4: Factors aggravating OSH risks in selected types of platform work (by risk level)	16

Abbreviations used

AI	Artificial Intelligence
Cedefop	European Centre for the Development of Vocational Training
EC	European Commission
ECE	European Centre of Expertise
ELA	European Labour Authority
EPSR	European Pillar of Social Rights
ETUI	European Trade Union Institute
EU	European Union
EU-OSHA	European Agency for Safety and Health at Work
Eurofound	European Foundation for the Improvement of Living and Working Conditions
GDPR	General Data Protection Regulation
GPS	Global Positioning System
ICT	Information and Communications Technology
ILO	International Labour Organization
ITSS	Inspección de Trabajo y Seguridad Social
LOM	Law No 2019-1428 of 24 December 2019 on the orientation of the means of transport
OECD	Organisation for Economic Co-operation and Development
OSH	Occupational safety and health
PPE	Personal protective equipment
P2B	Platform to Business Regulation
SLIC	The Senior Labour Inspectors' Committee
TFEU	Treaty on the Functioning of the European Union
UGC	User-generated content

1 Introduction

1.1 Background

The digitalisation of our economies has transformed and disrupted labour markets and business sectors across the European Union (EU), changing the nature, organisation and conditions of work. One of the central and most visible players in this digital transformation are the digital labour platforms, which match clients requesting services with workers offering them (Eurofound, 2018a; European Commission, 2020). The European Agency for Safety and Health at Work (EU-OSHA, 2017) defines online platform work as ‘all labour provided through, on or mediated by online platforms, and which features a wide array of standard and non-standard working arrangements/relationships ...’. Similarly, the European Commission (2020) defines platform work as ‘all labour provided through, on or mediated by online platforms in a wide range of sectors, where work can be of varied forms and is provided in exchange for payment’. Core features of platform work are (i) the triangular relationship among platform, platform worker and client, (ii) the online intermediation of smaller tasks in which technology plays an important role and (iii) the provision of work on demand and on a temporary or piecemeal basis. The European Parliament (2020) builds further on this definition, by making explicit that platform work relies on the ‘use of an app or technology owned by the platform ... to intermediate work but also in work allocation, organisation and evaluation and [that] the extensive collection and analysis of data provided or generated by the platform worker and the customer is a key determinant, distinguishing platform work from other forms of work.’

Digital labour platforms have rapidly gained ground in Europe over the past decade (Eurofound, 2019a; European Commission, 2020). The most cited data on the prevalence of digital platform work come from the two COLLEEM surveys, which confirm that the share of individuals who have ever provided labour via platforms increased from 9.5 % in 2017 to about 11 % in 2018 in the EU (Pesole et al., 2018; Urzi Brancati et al., 2020). Digital platform work is the main form of employment (those who provide labour via platforms at least monthly, and work on platforms at least 20 hours a week or earn at least 50 % of their income via platforms) for 1.4 % of the working population, while another 10 % do it at various levels of intensity and frequency in addition to other employment forms (Urzi Brancati et al., 2020; Eurofound, 2020).

Platform work creates new work opportunities by lowering the barriers to labour market entry and by providing workers with options to earn an income through flexible work (Eurofound, 2018a; European Commission, 2020; ILO, 2021). Platform work, however, may also present challenges for workers, such as an ambiguous employment status, inadequate access to social protection, weak bargaining power, poor working conditions, and safety and health issues (EU-OSHA, 2017; European Commission, 2020). Given their disruptive nature, fast growth, high visibility, and concentration in sectors that are traditionally strictly regulated, such as the transport sector, digital labour platforms quickly were high on the agenda of the research and policy communities (Lenaerts et al., 2018). Lawmakers and social partners, however, have struggled to fit these new business practices and new forms of work into the existing regulatory frameworks at the EU and the national levels, including in the area of occupational safety and health (OSH). At the same time, it appears that safety and health aspects have been somewhat overlooked in the policies and practices targeting digital platform work, at the detriment of the growing group of (vulnerable) workers involved in such work.

1.2 Policy context

Protecting workers’ safety and health is a priority in EU policy, given its impact on workers, businesses and the EU economy and society at large.¹ Having a healthy, safe and well-adapted work environment is one of the key principles of the **European Pillar of Social Rights**.² Under this principle, workers have

¹ See Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Safer and healthier work for all - Modernisation of the EU occupational safety and health legislation and policy (COM/2017/012 final). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:012:FIN>

² See Interinstitutional Proclamation 2017/C 428/09 on the European Pillar of Social Rights of 13 December 2017 (OJ C 428, 13.12.2017, pp. 10-15). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017C1213%2801%29>

(i) the right to a high level of protection of their health and safety at work, (ii) the right to a working environment that is adapted to their professional needs and enables them to prolong their participation in the labour market, and (iii) the right to have their personal data protected in the employment context. Platform workers, however, experience a range of physical and psychological safety and health risks. These risks are difficult to prevent and manage, in particular as the OSH legislation in the EU and the Member States only applies to 'dependent employment' relationships and most platform workers are classified by the platforms themselves as self-employed. This implies that, in general, platform workers are responsible for health and safety issues themselves, and usually work in ill-adapted work environments and with limited access to appropriate equipment. Finally, data protection is a pressing issue in platform work as well, given that digital platforms' business models heavily rely on the monetisation and exploitation of the data provided and generated by users (European Parliament, 2020). In addition, platform workers may not know what data of theirs are collected or how their data are used and by whom, which can lead to anxiety.

Besides the right to a healthy, safe and well-adapted work environment (principle 10), the European Pillar of Social Rights contains several principles on working conditions and social protection relevant to platform work. These include the right to secure and adaptable employment (principle 5), the right to fair wages, which provide for a decent standard of living (principle 6), the right to information about employment conditions and protection in case of dismissals (principle 7), the right to social dialogue and workers' involvement in matters relevant to them (principle 8) and the right to a good work-life balance (principle 9), as well as all principles related to social protection and inclusion (principles 11-20).

On 9 December 2021, the European Commission put forward a set of measures to improve the working conditions in platform work.³ As part of the package, the Commission proposed: a) a Communication setting out the EU approach and measures regarding platform work; b) a proposal for a Directive on improving working conditions in platform work; and c) to draft Guidelines clarifying the application of EU competition law to collective agreements of solo self-employed seeking to improve their working conditions, including those working through digital labour platforms. These aspects are further elaborated on below. In any case, platform workers' safety and health has been identified as a **core challenge** to be addressed by this initiative. The initiative, directly targeting platform work, complements previous initiatives that contribute to good working and employment conditions in platform work, including the EU **Directive on Transparent and Predictable Working Conditions** and the **Regulation on promoting fairness and transparency for business users of online intermediation services**,⁴ with the latter aiming at 'regulating a triangular relationship in which digital applications or platforms 'intermediate', by granting business users guarantees in terms of transparency, fairness, and effective redress possibilities. Additionally, a number of EU directives currently under discussion are relevant to digital platform work, such as Directive 89/654/EEC on workplace requirements (minimum safety and health requirements for the workplace)⁵ and Directive 2003/88/EC on working time (organisation of working time),⁶ which set standards that can improve the working conditions in platform work. Another issue to highlight is the current debate on the need to introduce legislation on the 'right to disconnect'. The European Commission also proposed the first legal framework on artificial intelligence (AI), which addresses the risks of 'AI systems used in employment, worker management and access to self-employment'.⁷ Finally, the EU social partners' autonomous framework agreement on digitalisation⁸ also covers platform workers in cases where an employment relationship exists.

³ See: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6605

⁴ 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 (OJ L 186, 11.7.2019, pp. 57-79).

⁵ Council Directive 89/654/EEC of 30 November 1989 concerning the minimum safety and health requirements for the workplace (first individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC) (OJ L 393, 30.12.1989, pp. 1-12).

⁶ Directive 2003/88/EC of the European Parliament and of the Council of 4 November 2003 concerning certain aspects of the organisation of working time (OJ L 299, 18.11.2003, pp. 9-19).

⁷ Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (artificial intelligence act) and amending certain union legislative acts (COM(2021) 206 final). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52021PC0206>

⁸ With this framework agreement (ETUC, 2020a), the social partners aim to achieve a consensual transition by successfully integrating digital technologies in the workplace and by reaping the opportunities, as well as preventing and minimising the risks for workers and employers. This includes efforts to support continuous learning by workers and businesses, to ensure workers'

In recent years, issues related to platform work have also received increased attention from national legislators and courts. A series of highly publicised decisions by courts throughout the EU demonstrates the inadequacies of regulatory frameworks in grasping the peculiarities of digital platform work, including the classification of digital platform work arrangements and employment statuses, resulting in risks of precariousness (European Parliament, 2020; De Stefano, 2021). Most national legislation thus far has been aimed at ensuring fair competition in the sectors of passenger transport services (such as Uber) and food delivery (such as Deliveroo) (European Commission, 2020). However, there seems to be an increased (albeit still limited) tendency of national legislators to encroach on other policy domains relating to digital platform work, such as employment status, working conditions and social protection (Lenaerts et al., 2018; European Commission, 2020). A case in point is the so-called Riders' Law (Royal Decree Law 9/2021, of 11 May, 2021, ratified by Law 12/21 of 28 September, 2021)⁹ providing a presumption of dependent employment status for digital platform workers active in the transport sector and transparency rights regarding the algorithms that are central in the functioning of digital labour platforms (for all types of digital platform workers). Awaiting final approval from the parliament, Portugal is set to follow that same path by granting employment status to digital platform workers and obliging digital labour platforms to inform workers and their representatives about the criteria of algorithms and artificial intelligence mechanisms used.¹⁰

1.3 Aims of this report

This report summarises the main findings of a research project on digital platform work carried out on behalf of the EU-OSHA in 2021 that aims to contribute to a better understanding of safety and health in platform work by mapping OSH challenges and opportunities and exploring if and how these are tackled. It sets out to provide an overview of regulation, policies, practices and research regarding digital platform work and its impact on OSH. Although the working and employment conditions of digital platform work have received significant attention in policy and research recently, these issues have been less explored through the lens of OSH.

The research was structured around two main themes and the following research questions:

Theme 1: Identifying the OSH challenges and opportunities in digital platform work

- What OSH risks do digital platform workers encounter and what is driving them?
- Do these risks differ across different types of digital platform work and in what way?
- Do these risks affect different groups of platform workers in different ways?
- What is the impact of the COVID-19 pandemic on OSH in digital platform work?
- What are the opportunities in the area of OSH related to platform work?

Theme 2: Policies and practices addressing OSH in digital platform work

- What OSH prevention and management policies, practices, strategies, and so on, exist?
- What is the scope of these policies, practices, strategies and so on?
- What risks do these policies and practices address?
- What challenges are not addressed?
- Are these monitored and enforced?

These topics and research questions were tackled in three interlinked steps. A first step was to develop a comprehensive literature review and assessment of OSH challenges and opportunities in the context of platform work (EU-OSHA, 2021a; 2021b). This includes the OSH risks facing platform workers and their impacts on workers' physical and mental health, safety and overall wellbeing, and the challenges

safety and health, including in the context of working time and the right to disconnect, and to ensure the safe, fair and transparent use of digital surveillance and artificial intelligence following the 'human in control' principle.

⁹ See also: https://www.boe.es/diario_boe/txt.php?id=BOE-A-2021-7840 and <https://www.boe.es/buscar/act.php?id=BOE-A-2021-15767>

¹⁰ See: <https://www.reuters.com/technology/portugals-gig-economy-workers-set-become-staff-2021-10-22/>

related to risk prevention and OSH management. Following the identification and analysis of the OSH challenges and opportunities of platform work, the second part of this project focused on the regulation, policies, practices, strategies, initiatives, actions, and programmes that are available or under discussion at the EU level and in the EU Member States with the aim of addressing those issues. Within that context, four examples of policies and practices were identified and described in depth: (i) the Spanish Riders' Law (EU-OSHA, 2022a); (ii) the Italian legal framework (Bologna Charter) (EU-OSHA, 2022b); (iii) the French legal framework (EU-OSHA, 2022c); and (iv) practices of labour and social security inspectorates (EU-OSHA, 2022d). Finally, building on the knowledge and evidence gathered in the first two phases of the project, four in-depth case studies of different types of platform work were developed, covering examples of both online and on-location and of both high- and low-skilled work: (i) parcel delivery (EU-OSHA, 2022e); (ii) handiwork (EU-OSHA, 2022f); (iii) online content review (EU-OSHA, 2022g); (iv) remote programming (EU-OSHA, 2022h).

By addressing the above issues, the study aims to help develop and disseminate the most recent evidence on the challenges and opportunities for OSH to EU-OSHA's target audience, which comprises policy-makers, social partners, civil society, researchers, the OSH community at large and other actors and stakeholders in the Member States and at the EU level. By linking this evidence on OSH challenges with insights on existing policies and practices to address them (at the EU, the Member State and the workplace levels), gaps are revealed and the need for further policy action, decision-making and development can be assessed. This report also contains conclusions and recommendations targeting different stakeholders and considering the different types of platform work.

Methodologically, the study builds on a combination of desk research and field work (for more details on the methodology, see Annex 1). More specifically, the study relies on a review of the academic and grey literature on OSH and digital platform work and available data, a consultation of EU-OSHA's national focal points, case studies (policy case studies and case examples of platforms), and interviews with key informants from research and policy as well as both digital labour platform and digital platform workers. By using a mixed-methods approach, the findings could be validated through triangulation, and their robustness across national contexts, types of platform work and, types of OSH risks and impacts, could be verified. Another key point is that any knowledge or data gaps identified in the literature, could be taken up in the fieldwork.

In the remainder of this report, the main findings emerging from the literature on OSH risks and their prevention and management are presented, following a similar logic and structure as previous reports on this topic, notably Huws (2015) and EU-OSHA (2017). First, we present the conceptual framework guiding the report (section 2). Section 3 then presents the available evidence on the OSH implications of carrying out work through a digital labour platform for platform workers. We first identify those OSH challenges and risks directly related to the activities or tasks that are performed as platform work and touch on how these are managed (section 3.3.1). Next, we explain why these challenges and risks are increased in the case of platform work and examine the factors complicating the prevention and management of these risks (section 3.3.2). As part of this study and to expand the knowledge of OSH issues related to digital platform work, four case studies were carried out in depth to explore the safety and health risks in four distinct types of platform work (section 3.2). Section 4 then zooms in on the policies, practices, initiatives and actions targeting OSH that are available or are under discussion at the EU level and in the EU Member States. Finally, section 5 presents the conclusions and potential recommendations following from the results of the study.

2 Conceptual framework

This section presents the conceptual framework guiding the study, comprising both the definition and a taxonomy of digital platform work. It is based on an extensive review of the academic and grey literature on OSH in the context of digital platform work. The information reported here is a summary of this extensive literature review, which is published as EU-OSHA (2021a).

2.1 Defining digital platform work

For the purpose of this study, the following concepts and definitions are used (see EU-OSHA, 2021a):

Digital platform work: All paid labour provided through, on or mediated by an online platform.

The main characteristics of platform work are as follows:

- Paid labour is organised/coordinated through a digital labour platform.
- Specific tasks are performed or specific problems are solved.
- Algorithmic management based on digital technologies is used to allocate, monitor and evaluate the work performed and the platform workers' behaviour and performance, including reliance on customer rating mechanisms.
- Three parties are involved, namely a digital labour platform, a client and a digital platform worker.
- There is a prevalence of non-standard working arrangements, and digital labour platforms tend to classify digital platform workers as self-employed in their terms and conditions.

The risks, liabilities and responsibilities, including in the area of safety and health, are shifted onto digital platform workers.

Digital platform worker (or 'a person working through a platform'): An individual person providing labour intermediated with a greater or lesser extent of control via a digital labour platform, regardless of that person's legal employment status.

Platform workers can have the status of employee, self-employed or any third-category status.

Digital labour platform: An online facility or marketplace operating on digital technologies (including the use of mobile apps) that are owned and/or operated by an undertaking, facilitating the matching between the demand for and supply of labour provided by a platform worker.

Platforms matching the demand and supply of goods are excluded, as are platforms whereby services are exchanged without remuneration or where the remuneration only covers the cost of providing the services (such as car-sharing). Furthermore, labour provided directly to the platforms as employers (such as working *for* a platform), or in related satellite activities, do not fall under this definition.

The above definitions and concepts are rooted in the academic literature and earlier publications by EU-OSHA (2017), Eurofound (2018a; b, 2019)a, the European Commission (2020) and the European Parliament (2020). The definitions and concepts adopted in these publications, however, have been updated here, to account for the terminology and framework proposed by the European Commission in relation to its upcoming initiative on improving the working conditions in digital platform work,¹¹ which mirrors the main characteristics of platform work as identified by Eurofound (2018a). The Commission proposes using the term 'people working through platforms' rather than 'platform worker'. This term is more neutral and it signals that those working through platforms can have different employment statuses.

Our definition of digital platform work highlights the **use of algorithmic management** as one of its most distinguishing features in comparison with other forms of work, and because algorithmic management is one of the main underlying drivers (exacerbating) OSH risks in digital platform work. In addition, emphasis is put on the prevalence of working arrangements resembling **non-standard forms of work** (such as temporary work, on-demand work or casual work) and the classification of **digital platform workers as self-employed** in the platforms' terms and conditions. All of these can affect potential risks and the way these risks are managed in practice. In particular, the classification as self-employed is crucial in this regard, because the status of an employee is still the main determinant of whether or not that employee is entitled to employment protection in most Member States (as well as in EU law), including OSH protections.

¹¹ See Consultation document: first phase consultation of social partners under Article 154 TFEU on possible action addressing the challenges related to working conditions in platform work (C(2021) 1127 final). Available at: ec.europa.eu/social/BlobServlet?docId=23655&langId=en

2.2 Digital platform work taxonomy

A review of the literature has identified an extensive array of taxonomies developed in the context of digital platform work (see also EU-OSHA, 2021a). These taxonomies are useful heuristic devices for reflecting the wide heterogeneity of digital platform work, capturing key features that allow to distinguish between different digital labour platforms, including in OSH matters.

The most developed taxonomy for digital platform work was proposed by Eurofound (2018a). It identified 10 types of digital platform work, which have reached a 'critical mass' in Europe in terms of the numbers of digital platforms and digital platform workers. Five features of digital platform work are considered in this typology (Eurofound, 2018a): (i) the scale of the tasks (micro-tasks vs larger tasks); (ii) the format of service provision (on-location vs online); (iii) the level of skills required (low vs high); (iv) the actor allocating the work (client, digital platform worker or digital platform); and (v) the matching process (offer vs contest structure). Studies carried out by both the European Commission (2020) and the European Parliament (2020) have built further on the taxonomy proposed by Eurofound (2018a). Other typologies, including the one presented by ILO (2021) and OECD (2018) largely separate between online and on-location forms of digital platform work. Bérastégui (2021) similarly categorised digital platforms into those corresponding to 'tangible activities performed in the physical world' and 'digital platforms dedicated to various virtual services performed and completed online'. In that sense, three primary categories were identified¹² in his recent contribution: (i) on-demand physical services, (ii) online freelancing and (iii) microwork.

The platform work taxonomy used in this study builds further on the taxonomies identified in the literature as laid out above (EU-OSHA, 2021a). Nonetheless, for the purposes of this study, it is imperative to capture those dimensions influencing the OSH risks that platform workers are exposed to, as well as providing insight into potential challenges with regard to OSH prevention and OSH management. Our proposed typology is described in Table 1. It relies on three key dimensions, resulting in four distinct types of platform work.

Table 1: Taxonomy of digital platform work

Dimension	Type 1 (e.g. Uber)	Type 2 (e.g. RingTwice)	Type 3 (e.g. AMT)	Type 4 (e.g. 99designs)
Format of labour provision	On-location	On-location	Online	Online
Skill level required	Lower	Higher	Lower	Higher
Level of control	High	Moderate	High	Low

Source: Authors' own elaboration.

▪ The format of labour provision (online or on-location)

Online platform work refers to tasks that are matched with workers online and are performed only or mostly virtually on an electronic device at any location, although the most common location is the home of the platform worker (referred to in the literature as online web-based platforms, online labour, web-based labour, crowdsourcing, and so on). Although the process of matching tasks with workers still happens online, **on-location platform work** refers to tasks that are performed only or mostly in the physical world, either on-site in public areas, on the road or at the client's premises (referred to in the literature as location-based platforms, location-based labour, gig work, on-demand work, and so on).

¹² The author also classified these three primary categories in relation to task division (such as micro-tasks vs larger projects) and task complexity (such as skill level required).

From an OSH perspective, the physical environment in which digital platform work takes place determines to a large extent (but not exhaustively) which risks digital platform workers are exposed to (Huws, 2015), and the particular difficulties in managing these OSH risks in practice. The remainder of this report will take this dimension into account when analysing the available evidence.

▪ The skill level required in platform work

Skill level serves as a proxy for the nature, scale and complexity of the task in question. Thus, it determines whether or not a task can be allocated to anyone active on the platform ('the crowd'; see Schmidt, 2017, who makes a distinction among local micro-tasking, online micro-tasking and online content-based creative crowdwork) or to a selected individual. The concept 'crowd' refers to the idea that it is open to anyone, without prior qualifications. In particular, in online micro-tasking, very small-scale tasks that are distributed across a large and unspecified group of workers who self-assign to tasks are assumed to generally require unskilled workers who are interchangeable (Schmidt, 2017). Online content-based creative crowdwork can also involve more complex tasks, however. In this case, clients launch a contest and select the winner. Importantly, the level of skill required to execute a task does not reveal anything about the general skills that a digital platform worker needs (such as in strategies to find work) or has (such as education level). In fact, previous research on platform work suggests that many platform workers are faced with a skills mismatch (Cedefop, 2020). Many food delivery riders and drivers, for example, are highly educated students on the verge of obtaining a university degree. Interviews with such workers have revealed that many feel overqualified and frustrated, and do not see platform work as a way to develop their skills or as a step towards a possible future career (Eurofound, 2018a; Cedefop, 2020). Moreover, some of these workers tend to accept whatever conditions the platform imposes, as platform work is only a temporary 'job' that fits within their current life (Eurofound, 2018a). At the same time, platform workers may lack the skills necessary to perform the task in question, leading to anxiety. The scale of such tasks ranges from micro-tasks, such as click work, in which a single task takes only a few seconds, to medium-scale tasks, such as parcel delivery, which require a few minutes or hours of work, to larger scale tasks, such as fully fledged projects that could take several weeks or months to complete, such as website design. Platform work is diverse not only in terms of the scale of the tasks, but also in terms of the activities themselves and the skills required to execute them (Cedefop, 2020). This heterogeneity in the tasks performed, as well as in the skills mismatch, has important implications for digital platform workers' safety and health.

▪ The level of control exercised by the platform

The 'level of control' is an umbrella term encapsulating several dimensions within which to classify digital platforms. It serves as an indicator of the extent of the hierarchical power and managerial prerogatives that a digital labour platform deploys in its relationship with digital platform workers; more specifically, it relates to (unilateral) decisions on work allocation, work organisation and work evaluation. The dimension of 'level of control' already features in existing typologies through a wide array of variables, which indirectly determine the level of control existing in a particular digital platform work type (such as the matching process, initiator, payment type, price-setting powers, employment status or algorithmic control and techniques).

Eurofound (2019a) looks at this dimension in an alternative way: digital platforms can be placed along a spectrum that distinguishes between markets (such as spaces where supply and demand meet), on one side, and hierarchy (such as structures of command applied within firms) on the other. On the (extreme) market side of the spectrum are those digital platforms that can be classified as purely online information society services - they simply act as a (digital) tool that allows the matching of clients with digital platform workers - with limited interference in the actual service provision. On the other extreme, the digital platform assumes (far-reaching) managerial prerogatives towards its digital platform workforce, through (unilateral) decisions on work allocation, work organisation and work evaluation, offsetting the autonomy of digital platform workers completely. Clearly, these two extreme forms of digital platforms are not operational in their ideal forms in practice (see also Stark and Pais, 2021). Nonetheless, based on this dimension, we can distinguish between digital platforms deploying a higher or lower level of control over digital platform workers (Table 2).

Table 2: Platforms by level of control in various dimensions

Type	Work allocation	Work organisation	Work evaluation	Level of control by platform
1	High	High	High	High
2	Low	Moderate	Moderate	Moderate
3	High	Moderate	High	High
4	Low	Low	Moderate	Low

Source: Authors' own elaboration.

The 'level of control' dimension is particularly relevant from an OSH perspective. In reality, the platform's intermediation can range from minimal to very significant. This is important given that the level of control serves as an important proxy for the notion of subordination, which in most Member States still remains the **key legal criterion in the determination of employment status**. In that sense, the status of employee serves as the main determinant in the application of employment regulations, including OSH regulation. However, in practice, most digital platforms classify their platform workers as self-employed, despite a rising number of European courts deciding otherwise (albeit predominantly in the personal transport and (food) delivery sector).

At the same time, this dimension is strongly interrelated with the reliance of most digital platforms on **algorithmic management (and digital monitoring and surveillance)** and the way that it shapes working conditions in digital platform work. Two characteristics of digital platform work are key in this regard. First, digital platforms have to manage a workforce that is out of the direct sight of (human) supervisors (Ivanova et al., 2018; ILO, 2021). Second, many digital platform workers have a high level of flexibility in deciding when, where and how to work (Ivanova et al., 2018; European Commission, 2020; ILO, 2021). In this situation, a digital platform controls the labour process to maximise the number of tasks completed on time and with good quality (Ivanova et al., 2018; Bérastégui, 2021). What is unique in digital platform work is that decisions on managing the workforce in the areas of work allocation, work organisation and work evaluation are made on the basis of metrics and ratings (such as customer rating mechanisms), which are part of the algorithmic management process through which work is also monitored (ILO, 2021). Although there is no uniform practice among digital platforms in terms of the pervasiveness in the deployment of such management techniques, initial indications suggest that there is a clear link between the degree of algorithmic control and the rise and/or exacerbation of occupational risks, in particular regarding the psychosocial wellbeing and mental health of digital platform workers (see European Parliament, 2019; Bérastégui, 2021).

3 OSH challenges and opportunities of platform work

3.1 Introduction

This section presents the available evidence on the OSH implications of carrying out work through a digital labour platform for platform workers. It provides an account of the risks that platform workers are exposed to and describes the safety, health and wellbeing implications of these risks. The chapter also explains how these **safety and health risks are prevented and managed**, referring to key examples from the literature. An overview table of the key challenges of OSH management in digital platform work in relation to the OSH Framework Directive is included in Annex 2 and discussed in the following sections, bearing in mind that the directive is applicable only to dependent employment relationships.

Based on a review of the literature covering OSH in platform work, it became clear that (i) most attention is paid to safety and health issues related to **food delivery services and passenger transport services** (not only in research but also in policy, for example, Christie and Ward, 2019; Polkowska, 2021a, b)¹³; (ii) **few studies cover the EU or its Member States**, whereas there is more research on the situation in the United States, in the United Kingdom and at the global level (Bajwa et al., 2018); and (iii) **the prevention and management of OSH risks** is discussed less often than other topics. The sparse literature that is available mainly focuses on potential OSH risks present in digital platform work, with OSH risk prevention and management only superficially touched on. Examples of studies on OSH in platform work include Huws (2015), Wilde (2016), EU-OSHA (2017), Howard (2017), Huws et al. (2017), Tran and Sokas (2017), ILO (2018), Malenfer et al. (2018), Christie and Ward (2019), Samant (2019) and Bérastégui (2021).¹⁴

Notwithstanding that the evidence on safety and health in platform work is quite scarce, the importance of this subject has been recognised in a multitude of academic and policy publications. The current body of research on safety and health in platform work has highlighted the impact of **precarious employment conditions**, including low income, irregular working times, a lack of autonomy and control, job insecurity, unconventional workplaces and a lack of collective representation, on the **physical and psychological health and wellbeing of platform workers** (Huws, 2015; Berg, 2016; EU-OSHA, 2017; Bajwa et al., 2018; Muntaner, 2018; European Parliament, 2020).¹⁵ The European Parliament study (2020), for example, argues that platform workers who provide services using global profit-oriented platforms face **high risks of precarious working conditions**, irrespective of their employment status.

The main challenge in platform work is the uncertainty regarding the employment status of platform workers, which has implications for rights and obligations in terms of the labour and social protection of both digital labour platforms and those working through digital labour platforms (discussed at length in, for example, EU-OSHA, 2017; Eurofound, 2019a; European Commission, 2020; European Parliament, 2020). Platform work blurs the boundaries between employees and the self-employed. Digital platforms often state explicitly in their terms and conditions that no employer-employee relationship exists between them and the workers using their platform. Platform workers are categorised as self-employed almost by default, irrespective of the actual circumstances under which the work is allocated, organised, carried out, monitored and evaluated. Research has shown that, especially in the case of low-skilled on-location and online platform work, this is often a misclassification, as illustrated by a range of highly publicised national court decisions in recent years. In relation to OSH, the employment status of platform workers is critical in terms of OSH risk prevention and management, as **the self-employed are not covered by EU OSH directives or by national OSH legislation** in most Member States and are often not among those who are targeted by prevention measures such as training. Another key issue relates to the **rapid changes** and **high heterogeneity** in platform work, which complicates the identification, prevention and management of OSH risks, as well as the application of OSH regulations. Indeed, regulating platform work has been described as trying to ‘hit a moving target’ (EU-OSHA, 2017; Eurofound, 2018a,b).

⁽¹³⁾ This is because these types of platform work are widespread and highly visible, reporting higher shares of workers and platforms (than other types of platforms), and are under intense scrutiny by researchers, the media and politicians.

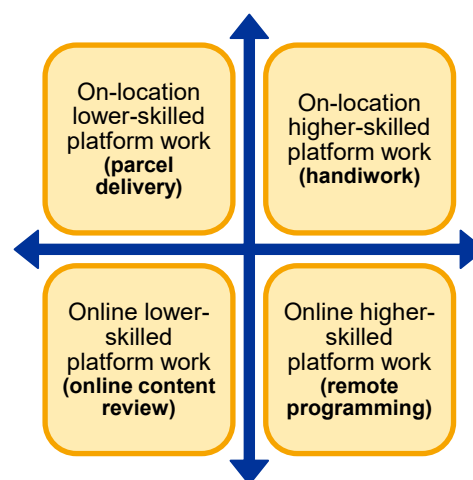
⁽¹⁴⁾ A number of these studies was presented at a workshop organised by EU-OSHA in May 2018: ‘Protecting workers in the online platform economy’. Available at: <https://osha.europa.eu/en/tools-and-resources/seminars/workshop-protecting-workers-online-platform-economy>.

⁽¹⁵⁾ Following Kalleberg and Vallas (2018), precarious work is understood as work that is uncertain, unstable and insecure, and in which workers bear the risks of the work (as opposed to businesses or the government) and receive limited social benefits and statutory protections. See also European Parliament (2020).

Studies by Huws (2015) and EU-OSHA (2017) highlight how typical characteristics of platform work, such as the uncertainty surrounding employment status and work arrangements, interact and reinforce each other, aggravating the risks that platform workers face. For example, while working as a delivery rider through an online platform or a traditional company may involve highly similar tasks and associated risks, the risks are likely significantly higher for platform workers due to the working conditions in platform work, in combination with the need to be allocated more tasks, to attain good ratings and similar issues. Digital platform work indeed resembles elements of a multitude of non-standard working arrangements, such as zero-hour contracts, on-demand contracts, part-time contracts, casual work, temporary agency contracts and temporary contracts. Traditionally, these have all challenged and diffused the responsibilities of OSH management for the providers of non-standard work, the workers involved in such arrangements and OSH professionals (Howard, 2017; Tran and Sokas, 2017; European Parliament, 2020).

3.2 Case studies of four types of digital platform work

As part of this study and to expand the knowledge of OSH issues related to digital platform work, four case studies were carried out to explore the safety and health risks in four types of platform work, as per the taxonomy in section 2.2. The case studies cover the following activities carried out as digital platform work: **parcel delivery**, **handiwork**, **online content review** and **remote programming** (for detailed information on the four cases, see EU-OSHA, 2022e; 2022f; 2022g; 2022h). In this section, a brief overview of the four types and their OSH implications is presented.



Parcel delivery involves the **transport and delivery of small and light parcels** by a worker using a motorised or a non-motorised vehicle. It is a type of on-location lower-skilled platform work, which is found on both global and local digital labour platforms, which tend to exercise a high level of control over the digital platform workers using their platform as regards the work organisation, allocation, monitoring and evaluation. Common tasks in parcel delivery work are delivering and picking up goods at various locations; operating a vehicle or equipment; loading and unloading a vehicle and handling different types of goods (involves sorting items, loading goods from a truck or warehouse into the vehicle); performing maintenance on the delivery vehicle (such as refuelling); obtaining signatures and/or payments; recoding related information; receiving information on recipients (such as an address); having contact with recipients; and handling technology (for example, a phone or GPS).

Handiwork involves a **range of professional and household tasks**, such as small repairs, plumbing, painting, electricity, gardening, and so on. The provision of domestic services, such as cooking, cleaning and babysitting, are outside of the scope of the case study. Depending on the precise job at hand, it involves a set of different tasks, which are typically carried out in private individuals' homes and heavily rely on the use of (specialised) equipment and materials. This type of work involves a variety of skills, also depending on the precise activity that is being carried out. Handiwork is categorised as a form of higher-skilled on-location work, which is intermediated by both global and local platforms. Previous research suggests that digital labour platforms intermediating this type of work tend to exercise a low to moderate degree of control over the platform workers, who in turn tend to have significant autonomy over working times and task discretion.

Online content review involves **screening user-generated content (UGC)**, such as text, images or videos, in terms of illegal or abusive content, following a predefined set of guidelines and rules, and decisions as to whether this content can stay online or should be taken down (Berg et al., 2018; Soderberg-Rivkin, 2019). More specifically, content reviewers review user-generated content flagged by other users and/or automated systems (Soderberg-Rivkin, 2019). Such automated systems use algorithms, based on artificial intelligence and machine learning, to identify illegal or abusive content but they currently lack the sophistication to make human involvement obsolete (Berg et al., 2018;

Soderberg-Rivkin, 2019). Instead, the decision to take UGC offline is made by human labour, ‘invisible’ to the users of the social media platform or website (Cherry, 2016; Berg et al., 2018; Soderberg-Rivkin, 2019; Royer, 2021). The work that content reviewers perform involves filtering through countless posts, images or videos, of which some may be live (in real-time). It involves the identification, categorization, verification and validation of content (Royer, 2021). Content reviewers only have a few seconds to go through each step and to make a decision on whether specific content is allowed on the platform. In sum, online content review is a form of lower-skilled online work and typically involves very small-scale, simple and repetitive tasks of a clerical nature that require little training and coordination and are poorly paid.

Remote programming involves a process of writing and testing code that allows computer applications and programmes to function properly. This includes professions such as web and multimedia developers, software developers and applications programmers. If a programming task is outsourced, programmers can be working either as an employee in a company contracted by the client or instead carry out these tasks as an independent contractor (directly for the client or through a third party). The latter case is applicable in the context of platform work, with platforms bringing into contact clients with software development requests and IT professionals who offer this expertise and who carry out this work on a task-by-task basis. Remote programming can be categorised as a form of higher-skilled online platform work, which is intermediated by both global and local platforms.

For each case, the aim was to explore in detail the OSH challenges and opportunities, practices regarding worker protection, safety and health, and the prevention and management of OSH risks. A first group of OSH challenges and risks identified are directly related to the activities and tasks that are performed as platform work. A range of physical and psychological health and safety issues associated with each of these four types of digital platform work are summarised in the table below (Table 3). At the same time, the distinctions among the types of platform work within the scope of this study also led to different degrees by which the potential health and safety risks and the implementation of a sound health and safety policy may be aggravated. Overall, the available evidence suggests that OSH challenges are most striking for online content reviewers and parcel delivery riders and drivers, although challenges persist in the other types of platform work as well. Unsurprisingly, platforms intermediating online content review and parcel delivery typically exercise a significant degree of control regarding task allocation, organisation and evaluation of work; particularly in comparison with platforms intermediating handiwork and programming tasks.

Table 3: Various health and safety issues in selected examples of platform work

	Physical risks	Psychological risks
Parcel delivery	<ul style="list-style-type: none"> Ergonomic risks, related to physical overexertion or repetitive manual tasks Vehicle or bicycle accidents Slips, trips and falls Workplace violence Exposure to extreme weather temperatures Exposure to hazardous substances or biological materials ... 	<ul style="list-style-type: none"> Excessive workload Working hours Isolation Bullying, verbal abuse, harassment ...
Handiwork	<ul style="list-style-type: none"> Exposure to hazardous substances (e.g. lead, asbestos, etc.) Working in awkward positions or performing awkward manual tasks, increasing the risk of MSDs Lifting heavy or awkward objects Exposure to electricity, extreme temperatures or noise Working at heights Slips, trips and falls Working with various tools ... 	<ul style="list-style-type: none"> Excessive workload Working hours Isolation Bullying, verbal abuse, harassment ...
Online content review	<ul style="list-style-type: none"> Ergonomic issues, due to inappropriate setting of the workstation, including the visual display unit, keyboard, desk and chair Prolonged sitting and sedentary behaviour Excessive screen time ... 	<ul style="list-style-type: none"> Exposure to violence, crime, abuse and illegal content when working Isolation Excessive workload and time pressure ...

	Physical risks	Psychological risks
Remote programming	<ul style="list-style-type: none"> Ergonomic issues, due to inappropriate setting of the workstation, including the visual display unit, keyboard, desk and chair Prolonged sitting and sedentary behaviour Excessive screen time ... 	<ul style="list-style-type: none"> Isolation Excessive workload and time pressure ...

Source: Authors' own elaboration.

Table 4 presents a concise overview of the features aggravating OSH risks in the selected case studies, by level of importance. Section 3.3 will provide a further elaboration and analysis of the OSH challenges related to digital platform work, with examples extracted from the four case studies. Section 3.4 is dedicated to the opportunities of digital platform work.

Table 4: Factors aggravating OSH risks in selected types of platform work (by risk level)

Factors aggravating OSH risks	Selected types of platform work			
	Parcel delivery	Handiwork	Online content review	Remote programming
Employment status	High	Low	High	Low
Algorithmic management	High	Medium	High	Medium
Professional isolation/social support	Medium	Medium	High	High
Work-life balance	Medium	Low	High	High
Job/income insecurity	High	Low	High	Low

Source: Authors' own elaboration

3.3 OSH challenges related to digital platform work

3.3.1 OSH challenges related to work activities

A first conclusion that emerges from the literature on OSH and platform work is that the tasks performed as platform work are **highly similar or identical to those carried out in the traditional labour market** (see Huws, 2015; EU-OSHA, 2017; Huws et al., 2017; Tran and Sokas, 2017; Samant, 2019; European Commission, 2020; European Parliament, 2020).¹⁶ Considering the similarities in tasks, the consensus in the literature is that, in principle, platform workers are exposed to similar OSH risks as other workers performing these tasks (Huws, 2015; EU-OSHA, 2017; Samant, 2019). However, and as will be elaborated on in the following sections, the risks are heightened because of the way in which platform work is organised and the conditions under which it is performed.

¹⁶ Only micro- or smaller-scale online tasks appear less common and are explicitly associated with the rise of platform work by some authors (ILO, 2018). Examples of these 'new' tasks include online content moderation, tagging images.

It is important to note here that platform work often involves work in occupations and sectors that are generally considered more dangerous, such as in the transport, cleaning and construction sectors (such as handiwork), which report higher incidence rates of (severe) occupational accidents, work-related injuries and illnesses. A similar issue has been noted for other forms of non-standard work, such as temporary agency work. Working in such sectors and occupations is already challenging for trained professionals; however, platform workers may lack the training, qualifications or certifications required to do certain activities (such as electrical repairs), putting them at higher risk. Furthermore, few platforms ask platform workers to provide formal evidence of their qualifications or skills when setting up a profile (for example, require platform workers to upload a diploma or certificate to their profile) (European Commission, 2020). When platform workers feel pressured to work faster, to take on more tasks, and so on, the risks become greater.

Within that context, in the separate case study on handiwork (EU-OSHA, 2022f), it was stressed how the exercise of specialised handiwork in many Member States is conditioned on the attainment of licenses or certifications (such as for plumbers, electricians, and so on). Only workers possessing the necessary (certified) technical skills can execute this kind of job, which at the same time forms an important buffer against potential OSH risks. The question then rises as to what extent platforms are responsible for checking these credentials, particularly considering the activities performed which are in and of themselves dangerous and accident-prone. Two platforms interviewed for this case study mentioned that they conducted introductory interviews after a platform worker subscribed, although it cannot be determined whether this is an effective barrier. Overall, it seems that platforms usually externalise the assessment of necessary qualifications to the platform workers and clients, in line with their own estimation as being a purely online intermediary (for example, see TaskRabbit's terms of services in Figure 1).

Figure 1: TaskRabbit's terms of services

23. Licensing

Taskers alone are responsible for identifying and obtaining any required licenses, permits, or registrations before offering services and undertaking Tasks. Indeed, certain types of Tasks and services may be prohibited altogether, and it is the responsibility of Taskers to avoid such prohibited Tasks and services. Penalties may include fines or other law enforcement. If you have questions about how national/ state/ provincial/ territorial and local laws apply to your Tasks and services on the TaskRabbit Platform, you should first seek appropriate legal guidance.

Because TaskRabbit does not supervise, scope, direct, control, or monitor a Tasker's work or performance of Tasks, Clients must determine for themselves whether a Tasker has the skills and qualifications necessary to perform the specific Task at hand. Clients may wish to consult their national/state/provincial/territorial or local requirements to determine whether certain Tasks are required to be performed by a licensed or otherwise registered professional. Clients may also wish to discuss with their Tasker any specific hazards, obstacles, or impediments in the Task location (both visible and concealed) that may impact the performance of the Task.

Source : <https://www.taskrabbit.com/terms>

On the other hand, the OECD (2019) highlights the fact that reputation rating mechanisms (see below) can to some extent act as alternatives to formal qualifications and occupational licenses to signal quality of providers. Nevertheless, a good practice¹⁷ in this regard can be found on the Australian-based platform Airtasker, where so-called 'Licence Badges' have made their entry, which is a visual representation on the platform workers' profile once their existing licence has been verified by a third-party verification provider. This initiative came after initial criticism by the unions when it appeared that many unlicensed operators were taking on risky jobs, such as asbestos removal, at low costs (Gregory, 2018). Another issue is that platform work typically involves **additional tasks and/or a different combination of tasks** from those associated with similar jobs in the traditional labour market. It typically involves **extra work**, that is, work that is not required in comparable jobs outside the platform economy. Setting up and maintaining an account, obtaining work and communicating with clients are all examples of tasks that are common in platform work but are not necessarily required by workers performing similar tasks in other settings. These tasks may call for a different set of skills. Cedefop (2020) research on skills use and skills development in platform work suggests that many platform workers develop communication and technical skills doing platform work, along with developing their personal attributes

¹⁷ Available at: <https://support.airtasker.com/hc/en-au/articles/360001621807-Airtasker-Badges>

(such as independence or resilience), skills needed to obtain work and skills needed to become established as freelancers. Finally, such additional tasks may be associated with other OSH risks and negative health effects. For example, an individual working as a handyperson through digital labour platforms may spend many hours each day in front of a computer looking for work, managing appointments and updating their profile, which could cause eye soreness, back pain, and so on, that they would not experience if they received assignments from an employer (see EU-OSHA, 2022f). Similarly, in the case of remote programming (EU-OSHA, 2022h), it was highlighted how platform workers may spend considerable (unpaid) time waiting for work to be assigned (Ropponen et al., 2019; Berg et al., 2018; Urzi Brancati et al., 2020). For instance, on most platforms the final price for their work is set via a negotiation process with the client, which can take a considerable amount of time (Berg et al., 2019). One platform worker interviewed complained explicitly about the very slow process of selection, which can take up to a week in some cases.

Looking only at the work activities, the **physical risks of platform work** depend on the precise task in question and whether it is performed on-location or online (Huws, 2015).

Platform workers engaged in on-location platform work face a variety of physical risks. Because of the heterogeneity in on-location platform work, it is impossible to provide an exhaustive list of risks. Common examples from the literature include cleaners being exposed to chemical products, ergonomic risks and safety risks such as slipping on wet floors; handypersons being exposed to physical agents (such as noise or dust and vibration when drilling holes) and dangerous substances (such as gas when fixing a boiler) or facing ergonomic risks (see EU-OSHA, 2022f). Parcel delivery drivers and riders (see EU-OSHA, 2022e) face ergonomic risks, which are related to having to operate a vehicle and having to handle the parcels. Depending on the type of work, delivery workers may be sitting down for extended periods of time in a rather confined space, in static and awkward postures, and experience cumulative exposure to whole-body vibration and noise that can cause musculoskeletal disorders (MSDs) (in particular low-back pain), cardiovascular diseases (heart problems), fatigue and diabetes (Huws, 2015; Christie and Ward, 2019). Parcel delivery workers have to load, unload and handle parcels of various weights, shapes, dimensions and natures (such as large fragile items), and in doing so experience cumulative exposure to manual handling of items. Of particular note are risks which we group here under road and vehicle safety risks (Christie and Ward, 2019). Road safety refers to classic traffic hazards and risks, such as (unexpected) traffic jams, roadblocks and route deviations causing delays and making travelling more dangerous and more stressful, difficulties in finding the delivery address or finding a safe space to park. Indeed, the journey in itself holds risks (OSHWiki, 2021). In general, on-location platform workers interact with clients and may face violence, harassment or criminal acts perpetrated against them. Other reported sources of stress for platform workers performing on-location tasks are the weather conditions and traffic congestion (European Commission, 2020).

Online platform work, for example, the case studies on remote programming or online content review (EU-OSHA, 2022g,h), involves desk-based tasks that rely heavily on the use of a computer. The physical risks associated with this type of work are similar to those of office workers, such as sedentary behaviour; poor posture due to incorrect workstation set-up and working in a cramped space; prolonged sitting; working for long periods with a keyboard, mouse and other devices requiring frequent and repetitive arm, hand and wrist movements; using an inappropriate screen (in terms of size, flickering, glare, reflection or poor legibility); and working with poor lighting (EU-OSHA, 2017). Common health issues relate to MSDs, such as pain in the neck, back and upper limbs, headaches and tired-looking, red or sore eyes, cardiovascular diseases, diabetes and visual fatigue, and other health problems (Huws, 2015).

Additionally, the **pandemic** again has underscored several issues related to OSH and to social protection in the context of on-location platform work, and in some cases aggravated already poor conditions (OECD, 2020; Eurofound, 2021; ILO, 2021). Some platform workers have continued to work during the COVID-19 crisis, either being 'essential' workers (such as food delivery riders and drivers during the lockdowns) or out of necessity as they are dependent on the income gained from platform work. These workers, however, run the risk of being exposed to the virus or may pass it on to others with whom they come into contact. Platform workers may become ill, have to self-isolate, and be unable to work. However, platform workers generally have limited social protection coverage, which includes unemployment or illness benefits (European Parliament, 2020). To continue operating, platforms needed to convince their clients and platform workers, as well as the public authorities, that the services they intermediate could be provided safely and in compliance with the government measures in place (such as a lockdown). The Belgian platform RingTwice (formerly ListMinut), for example, urges its

platform workers to respect the rules imposed by the government at all times, to perform tasks online whenever possible (such as tutoring) and to postpone or cancel tasks when they feel ill or if they are unsure that the rules can be followed. On TaskRabbit this includes the option to cancel a task because of illness, without repercussions to the platform workers' business metrics.¹⁸

During the pandemic, only 60 % of platforms providing on-location services claimed to provide personal protective equipment (PPE) (such as disinfectant or, to a lesser extent, masks and gloves) to their workers, according to a study by Fairwork (2020). Yet, even in those cases, digital platform workers reported limited, irregular provision of PPE, sometimes even after platforms promised such provision. The European Trade Union Confederation (ETUC) (ETUC, 2020a; 2020b; ETUI, 2020) also published several reports highlighting the lack of provision of PPE to digital platform workers. A data collection exercise carried out by the OECD in collaboration with the AppJobs Institute (OECD, 2020) has also revealed that digital platforms offering on-location tasks have taken measures to protect the health of digital platform workers. More than half of the surveyed digital platforms (58 %) reported having taken measures to promote social distancing and the safe provision of services, such as contactless delivery, the removal of the obligation to obtain a signature upon delivery, or even the temporary suspension of high-risk services. However, only 25 % of digital platforms reported providing PPE (hygiene products or masks) to digital platform workers, with some digital platform workers complaining about the quality and quantity of PPE provided (such as the number of masks made available and their quality). This number is considerably lower than the share reported by Fairwork (2020). A complementary OECD survey of digital platform workers (both online and on-location) revealed that only 35 % of the respondents said that their platform had taken measures to assist them during the COVID-19 crisis.

Turning to the **psychosocial risks** related to the tasks performed, the literature again points to a link with the nature of the task itself (such as tasks involving direct contact with clients in their homes) (see Huws, 2015; EU-OSHA, 2017), but also highlights that most platform workers **experience stress**. This is driven by the manner in which tasks are allocated, monitored and evaluated (algorithmic management and digital surveillance), the conditions in which platform workers operate (such as being available at short notice, lack of job control, professional isolation, blurring of work and private life, insecure income or lack of collective voice), and further aspects discussed in section 3.3.2 (see also Bérastégui (2021) for a detailed discussion). As platform workers often depend on having a good reputation and positive reviews to be assigned work, being in contact with (prospective) clients can be stressful (Huws, 2015). Out of fear that 'saying no' to a client or going against their wishes will lead to a negative review, platform workers may accept work that they are not qualified for or have no experience with or take unnecessary risks. Similarly, platforms rely on a range of nudges and incentives ('gamification')¹⁹ that aim to encourage platform workers to be available for work for longer periods of time (such as Uber encouraging workers to stay online rather than logging off) or to work faster (such as workers being paid based on the number of deliveries made rather than the number of hours worked), and so on (see section 3.3.2 on algorithmic management). Some platform workers may also face violence, harassment and abuse, and be exposed to crime (Eurofound, 2018; ILO, 2021). The literature suggests that these are concerns particularly for on-location platform workers working as **taxi drivers** or **delivery riders and drivers**. For instance, in the case study on parcel delivery, common issues in dealing with clients such as language issues and clients who are not satisfied with the service provided (such as wrong parcel or long delivery time) were highlighted. And although the risk from aggressive, drunken and drugged clients is traditionally most observed in food delivery, it constitutes a risk in parcel delivery too (EU-OSHA, 2011). Online platform workers may also experience cyberbullying and harassment, although there is less literature covering this issue. In the case of online content review, it was highlighted how content reviewers and moderators, given the sensitivity of this work, are typically required to sign **non-disclosure agreements** (NDAs), which protect content reviewers' identities and thus shield them from cyberbullying and online abuse targeted at them. At the same time, NDAs imply that workers cannot communicate about their employment or working conditions or the health impacts of their work (Arsht and Etcovitch, 2018; Iver and Barve, 2020; Meskill, 2021).

In general, online content reviewers are regularly exposed to violence, crime, abuse and illegal content when working. This is very stressful, and it may cause long-run psychological harm and post-traumatic stress disorder (such as anxiety or insomnia) (EU-OSHA, 2017; Berg et al., 2018; Kessler, 2018; Meskill,

¹⁸ Available at: <https://support.taskrabbit.com/hc/en-us/articles/360040752692-COVID-19-Updates>

¹⁹ Schmidt (2017, p. 2) describes gamification in the context of platform work as a technique that allows platform providers to reward favourable user behaviour by awarding virtual credit points and by ranking the users' performance on public leaderboards.

2021). Based on interviews, Arsht and Etcovitch (2018) report that many content reviewers experienced fatigue, distress and depression. Fussell (2019) further explains that being exposed to illegal or abusive content without being able to act on it (such as call the police), may trigger workers to distance themselves emotionally, and it dehumanises them. This point also came up during an interview with a platform worker, who described how content review can become ‘boring’ after a while; like a very routine job that one does without thinking about it.

3.3.2 OSH challenges specific to platform work

Whereas the previous section focused on the tasks or activities executed in the platform economy and highlighted the OSH risks associated with them, this section will clarify why these risks are aggravated in platform work, what the main factors driving this are, what factors complicate the prevention and management of OSH risks in platform work, and related questions. Based on recent literature on this topic (notably Huws, 2015; EU-OSHA, 2017; European Commission, 2020; Bérastégui, 2021), this discussion is organised into four topics: (i) employment status and contractual arrangements; (ii) algorithmic management and digital surveillance; (iii) professional isolation, work-life balance and social support; and (iv) work transience and boundaryless careers. These topics largely correlate with the challenges identified by the European Commission to be addressed by its upcoming initiative, which aims to improve working conditions in platform work. Employment status and contractual arrangements are key in relation to the applicability of OSH regulations. The temporary and piecemeal nature of the working arrangements in digital platform work undermines to a certain extent effective labour inspection, representation and collective organisation.

▪ Employment status and contractual arrangements

In the academic and policy literature on platform work, the **uncertainty regarding the employment status of platform workers** has been identified as the core challenge to be addressed (European Commission, 2020), including from the perspective of OSH (EU-OSHA, 2017; Tran and Sokas, 2017; Pesole et al., 2018). As platform work blurs the boundaries between the traditional concepts of employees and the self-employed, determining the status of platform workers is not a straightforward task.

Digital platform work is characterised by the **triangularity of the parties** involved. Typically, there are three parties involved (although in some cases additional parties are included): the digital platform, the digital platform worker and the client. Additional parties could be restaurants, for example, in the case of food delivery. Both the digital platform worker and the client can act in a private or professional capacity. In the latter case, the triangular relationship bears similarities to that of temporary work arrangements, for which research has identified worsened OSH experiences, including inadequate safety training, inadequate worker representation, poor-quality PPE and a lack of clarity of supervisory roles in OSH management (Hopkins, 2015; Countouris et al., 2016). That being said, temporary work agencies are in fact responsible for the safety and health of their temporary workers, as an employer-employee relationship is identifiable; therefore, OSH regulations apply, including the implementation of collective technical measures and collective organisational measures if it is not deemed possible to eliminate or substitute potential risks (under the ‘hierarchy of control’).

In practice, platform workers are typically classified as self-employed (Prassl, 2018). This, however, has consequences for the labour and social protection rights and obligations of digital platforms and digital platform workers, and it determines the applicability of the OSH regulatory framework and its provisions. Digital platforms repeatedly contend that they provide purely online intermediation services and not the underlying services (European Parliament, 2020), notwithstanding the extensive control exerted by digital labour platforms through algorithmic management regarding work organisation, work allocation and pricing, which does not seem to reflect that assessment. Indeed, while the application of OSH obligations depends in most national contexts on a dependent employment relationship, available research has revealed that most digital platforms qualify their relationship with digital platform workers as being through contracts for services, and digital platform workers themselves as independent contractors (self-employed) (Donovan et al., 2016; Eurofound, 2018a, 2019a; Pesole et al., 2018; European Commission, 2020). Thus, the core issue in the application of the existing regulatory framework is the shifting of responsibility of the management of OSH risks to the individual digital platform workers. This is particularly problematic for platform workers engaged in relatively low-skilled on-location work, as these workers are more likely to be wrongly classified as self-employed (European Commission, 2020). It is important to highlight in this regard that especially platform workers with weaker labour market profiles tend to be over-represented in types of platform work associated with more

precarious employment conditions and more serious OSH risks. For example, new labour market entrants and workers with a migrant background are the dominant groups among platform workers working as delivery riders or taxi drivers. There are numerous accounts of near misses and of severe and deadly traffic accidents involving young delivery riders using bicycles or motorbikes (Bartel et al., 2019; Christie and Ward, 2019).

The case studies on four different types of platform work corroborated these findings, as most platform workers were classified as self-employed workers (with one notable exception in the case study on parcel delivery where one platform interviewed employed its platform workers; EU-OSHA (2022e)). For those in high-skilled platform work, the default status of being self-employed more often seems to reflect the real situation. In both case studies (remote programming and handiwork), platform workers appear to enjoy a large degree of autonomy and flexibility in determining how, when and how much they work. In most cases, they are also able to set their own prices without interference from the platform. Additionally, outside the widespread use of rating mechanisms, algorithmic control and digital surveillance appear to be less pronounced in these types of platform work (see below).

In that context, the case studies made clear that only minimal information and support is provided by the platforms about health and safety standards. No general policies regarding OSH have been found in the platforms under investigation, despite some anecdotal evidence that positive changes are being made. In some cases, platforms interviewed mentioned that they are willing to address OSH issues further, but fear requalification of the labour relation between the platform and its platform workers if they provide training, PPE, and so on.

Importantly, being classified as self-employed also implies that platform workers are not, in the vast majority of cases, collectively organised or represented (EU-OSHA, 2018; Eurofound, 2018a; Vandaele, 2018; Lenaerts et al., 2018; Aloisi, 2019; European Commission, 2020; European Parliament 2020). While the ILO and the Council of Europe include independent contractors within the scope of the right to association, competition law at EU and national levels have severely limited collective rights for independent contractors (Johnston and Land-Kazlauskas, 2019; Lenaerts et al., 2018; ILO, 2021). In that sense, the European Commission's launch of a public consultation on draft guidelines on the application of EU competition law to collective agreements of solo self-employed people is to be welcomed.²⁰ President von der Leyen's mission letters underlined the importance in this mandate to 'ensure the working conditions of platform workers are addressed'.²¹ This initiative forms part of the actions seeking to address this issue. Nonetheless, it must be recognised that the essential features of digital platform work are not conducive to representation structures. The triangular nature of the relationship, the 'virtualisation' of work, the high workforce turnover, the temporary nature of the working relationships, the solitary nature of digital platform work, the absence of a common workplace and the inherent competitiveness among digital platform workers all constitute major barriers to effective collective action (Nekhoda and Kuklina, 2020; European Commission, 2020; European Parliament, 2020). Finally, research has revealed that digital platform workers are often not aware of their collective rights as workers, with reports demonstrating digital platforms pushing back against efforts to unionisation (Lenaerts et al., 2018; Johnston, 2018; European Commission 2020).

Worker participation, however, is an essential component of an effective OSH management system. Article 6(3)(c) and Articles 10 and 11 of the OSH Framework Directive guarantee the right to information, consultation and participation of workers and their representatives in questions relating to safety and health at work. Representation and unionisation are indeed key to strengthening workers' labour situations and ensuring fair employment conditions (European Commission, 2020). In this regard, several studies have demonstrated that union-trained and -backed safety representatives are highly effective at improving OSH results (Walters and Nichols, 2007; Cox and Fletcher, 2014).

▪ Algorithmic management and digital surveillance

A key issue identified in the literature relates to the use of algorithmic management and digital surveillance, that is, the use of an algorithm to allocate, monitor and evaluate tasks and workers'

²⁰ See: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6620; See also: Inception Assessment of 6 January 2021 on Collective bargaining agreements for self-employed - scope of application of article 101 TFEU. Available at: <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>. In the Inception Impact Assessment, explicit reference is made to the situation of digital platform workers, who often lack the individual bargaining power to negotiate their terms and conditions.

²¹ See: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6620

performance. Digital platforms are one of the main actors in the development of algorithmic management as a way of managing and controlling a dispersed workforce (Lee et al., 2015; Ivanova et al., 2018; De Stefano, 2019; Mateescu and Ngyuen, 2019; European Commission, 2020). Paradoxically, it seems that digital platform workers' perceived autonomy regarding how and when to fulfil certain tasks may be offset by the far-reaching managerial control derived from algorithmic management (Möhlmann and Zalmanson, 2017; Ivanova et al., 2018; Malenfer et al., 2018; Prassl, 2018). In turn, this gives rise to the question of whether these practices amount to subordination or direction, which in many Member States still serves as the main legal indication regarding the classification of employment status (see above).

In the literature, algorithmic management is defined as '**oversight, governance and control practices conducted by software algorithms over many remote workers**' (Möhlmann and Zalmanson, 2017, p. 4). Algorithmic management is characterised by the continuous monitoring and evaluation of workers' behaviour and performance through digital technologies (such as digital surveillance), and the automatic implementation of decisions. These workers interact with a 'system' rather than humans, which reduces transparency and causes asymmetries in information and power among the parties involved. Workers often have no insight into the rules governing the algorithm (Möhlmann and Zalmanson, 2017), although the recently adopted Riders' Law in Spain serves as a good example in this regard, by defining transparency obligations of all digital platforms towards their digital platform workers regarding the algorithms they use (see section 4.4.1 in this report and EU-OSHA (2022a) for an extensive analysis). Additionally, although algorithmic management relies heavily on data collected from workers, those workers are also generally not compensated for their data or informed about how their data are used, despite the provisions laid down in the **General Data Protection Regulation (GDPR)**.²²

Among the characteristics of algorithmic management identified by Möhlmann and Zalmanson (2017) are, first and foremost, the **continuous tracking of platform workers' behaviour** and the **continuous evaluation of their performance**. Tracking of workers' behaviour undermines their autonomy and level of job control, and may cause anxiety and stress (Lee et al., 2015). Examples include tracking workers performing delivery tasks (such as Deliveroo) or passenger transport tasks (such as Uber) using the Global Positioning System (GPS), collecting data on their speed and route, and monitoring online workers by taking screenshots of their screen, and tracking mouse clicks and keystrokes when working (such as Upwork) (Schmidt, 2017; European Parliament, 2020; Bérastégui, 2021). Based on these data, platforms can rank platform workers and issue rewards or penalties (Möhlmann and Zalmanson, 2017). For example, platforms can give preference to high-ranking platform workers when allocating tasks or set up the platform so that clients can see the profiles of workers with the highest ratings only. For workers with lower ratings, it then may become difficult to be assigned (sufficient) tasks. Having to maintain a good rating at all times and in real time, and dealing with the consequences of having a poor rating, can be very stressful for platform workers (Möhlmann and Zalmanson, 2017). Rating systems put individual digital platform workers in direct competition with each other, leaving underperforming platform workers with fewer chances to be assigned tasks (in general or during their preferred working hours). In addition, rating mechanisms encourage a rapid pace of work, with digital platform workers continuously working to tight deadlines to maintain high ratings, which may increase the likelihood of accidents (EU-OSHA, 2017).

Platforms also use techniques such as surge pricing, nudging and gamification, and withhold information to manage platform workers' behaviour (Huws, 2015; Rosenblat and Stark, 2016; European Commission, 2020; Pastuh and Geppert, 2020; ILO, 2021). These are all soft control mechanisms, signalling to platform workers that changing their behaviour could potentially lead to additional income (Bérastégui, 2021). Examples include platforms showing the number of hours active on the platform, performance thresholds to be met (such as number of assignments completed in a certain time period) and surge prices that are applicable at specific times or in specific areas. This increases the level of competition among platform workers.

The case studies on four types of platform work were in line with the findings of the literature review. Nonetheless, it appeared that the intrusiveness of algorithmic practices and their effect on the working conditions of platform workers were particularly present with platforms intermediating lower-skilled platform work (parcel delivery and online content review). For instance, platforms intermediating online content review continuously monitor behaviour and performance, with platforms keeping track of a range

²² 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, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1-88).

of parameters, for example as it relates to the number of tasks accepted/rejected, the number of tasks completed/failed, speed, accuracy, availability (time, duration), and so on, allotting a score (rating) to each worker to create a ranking. Similarly, the case study on parcel delivery demonstrates the widespread use of mobile telephones and GPS systems for pre- and on-route planning allowing for the tracking of workers' activities, whereabouts, driving, and not in the least for monitoring workers' efficiency and productivity. One caveat must be mentioned though because even if such practices are typically more specific to the platform economy, they do not necessarily differ very much from systems put in practice in traditional courier companies as soon as technology allowed for them. On the other hand, algorithmic management and its OSH-related challenges appeared to be less pronounced in the context of higher-skilled platform work (remote programming and handiwork). Indeed, platforms intermediating higher-skilled work tend to guarantee a large degree of autonomy for platform workers in their work organisation. Nonetheless, a key role is still played by rating or reputation systems, which constitutes a major factor in future task allocation on platforms intermediating higher-skilled platform work. All in all, it requires platform workers to have a service-based mentality and be ready to respond to any request from the client, making it much more emotionally demanding than the jobs of some of their counterparts in the traditional labour market (for example, remote programmers working as full-time employees in a company).

Besides the continuous monitoring of platform workers' behaviour and performance, algorithmic management **involves (semi-)automated decisions made without human intervention** (Möhlmann and Zalmanson, 2017). Algorithmic management leads to a flattening of organisational structures with fewer middle-management posts, which were traditionally responsible for OSH management (IFA, 2017). Instead, this managerial role is replaced by algorithms that decide on work organisation and allocation with little to no human involvement (Simonite, 2015; Ivanova et al., 2018; European Commission, 2020). As such, algorithmic management determines the **power relations among all parties involved in platform work**: platforms, clients and platform workers (Bérastégui, 2021). More generally, the use of (opaque) algorithms in the decision-making process, the individualisation of work relationships and the lack of a collective voice, and the incidence of bogus self-employment all leave platform workers in weaker positions than their counterparts in traditional employment (Bérastégui, 2021). Closely related to this, platform workers typically interact with a system and consequently **cannot negotiate or ask for feedback**. There are few opportunities for recourse or conflict resolution (Möhlmann and Zalmanson, 2017). In many cases, all communication is automated. To be able to work, platform workers need to set up an account or profile on the platform. In principle, platform workers are in charge of their account and can close it when they no longer want to work through the platform. Platform workers whose account has been suspended by the platform, however, often do not have any way of getting it reinstated. Examples include workers whose rating drops below a specific minimum level and are consequently banned from the platform, or who have been suspended based on a complaint from a client, which may or may not have been justified (Eurofound, 2018).

In sum, there exists a major **lack of transparency concerning the functioning of algorithms** (Möhlmann and Zalmanson, 2017). Platforms are reluctant to share any information about how the algorithm works, arguing that it is part of their business model.²³ Indeed, as it stands now, opacity seems to be at the core of the algorithmic design ('black box of intermediation') (Burrell, 2016; Mateescu and Ngyuen, 2019; European Commission, 2020; European Parliament, 2020). In that context, the proposal of a Directive on improving working conditions in platform work put forward by the European Commission is to be welcomed, as it includes provisions aiming to increase transparency in the use of algorithms by digital labour platforms, ensuring human monitoring of their respective working conditions and giving workers the right to contest automated decisions (article 6-9).

Besides reshaping the power relationships among the parties involved, Bérastégui (2021) lists two key issues related to algorithmic management. The first issue is **occupational overload**, which can be split into 'quantitative overload' and 'qualitative overload' (Bérastégui, 2021). Quantitative overload means that a worker performs a large amount of work in a given timeframe; qualitative overload refers to a worker performing assignments that are far above their abilities. As Bérastégui (2021) explains, digital labour platforms aim to maximise the number of completed tasks to ensure that all clients' demands are met on time with good quality. Algorithmic management is used to coordinate and maximise the workload to this end. As a result, platform workers may be assigned too many tasks or tasks that are

²³ Here, it is important to recall the new legislation introduced in Spain (Riders' Law), which contains provisions in relation to the transparency of algorithmic management.

not in line with their skills, thus generating frustration, stress and anxiety. Moreover, platform workers may experience overload due to an overflow of information that they cannot process. Coupled with the pressure to perform to maintain a good rating and with a lack of social support in the workplace, occupational overload, micromanagement through digital surveillance and overall continuous and real-time monitoring reduce workers' autonomy and cause exhaustion and stress, as well as physiological responses such as back pain and headaches, and cardiovascular disease (Bérastégui, 2021).

Second, algorithmic management is associated with a breakdown in the **trust** that platform workers have in the platform. Organisational trust can be understood as the confidence that workers have that the organisation will perform actions that are beneficial or at least not detrimental to them (Bérastégui, 2021). Organisational trust is associated with higher levels of job satisfaction and better mental and physical health. Organisational trust is closely linked to **organisational justice** (Bérastégui, 2021).²⁴ Previous research suggests that fostering organisational trust by ensuring organisational justice is critical, as perceived injustice may cause poorer physical and mental health and behavioural issues, such as stress, burnout, psychiatric disorders, heightened susceptibility to illness, cardiovascular disease and aggressiveness.

▪ Professional isolation, work-life balance and social support

Platform work is characterised by an individualisation of work and work-related physical and social isolation, also known as 'professional isolation' (Bérastégui, 2021). Digital platform work marks a radical shift away from formalised workplaces, as it is usually home based (online digital platform work) or on the road/in public spaces and/or at the client's premises (on-location digital platform work), thereby creating a **(globally) dispersed workforce** (EU-OSHA, 2017; Tran and Sokas, 2017; Garben, 2019; Bérastégui, 2021; ILO, 2021). Previous research highlights that such work-related professional and social isolation means that in platform work the protective effect of working in a conventional workplace together with others is lost (Quinlan, 2015; EU-OSHA, 2017; Tran and Sokas, 2017; Samant, 2019; Nekhoda and Kuklina, 2020). In addition, platforms rely on algorithmic management and digital surveillance, automating many of the interactions that workers would usually have in a more traditional work setting. This gives rise to a range of OSH challenges, which may be difficult to prevent and/or manage (Huws, 2015; EU-OSHA, 2017; Tran and Sokas, 2017; European Commission, 2020; Bérastégui, 2021).

Bérastégui (2021) identifies three main areas of concern in terms of psychosocial risks related to professional isolation: (i) professional identity, (ii) work-life balance and (iii) workplace social support. First, in both on-location and online platform work, activities are executed in **unconventional workplaces** (including the home), which, in the case of on-location platform work, may not be known to the platform workers before accepting a task (EU-OSHA, 2017). **Workplaces and work equipment are often not adapted** to the needs of platform workers (Huws, 2015; EU-OSHA, 2017). For example, platform workers working at home may not have a proper desk and may instead use their personal laptop, visual display unit, keyboard and mouse, which may not meet ergonomic requirements for desk-based work. Another example relates to those platform workers working in clients' homes: these workers may have to work in confined and poorly lit spaces. In traditional employer-employee relationships, it is the employer's responsibility to adapt workplaces and provide the work equipment required. Platform workers, being classified as self-employed, typically have to provide this themselves.

Second, platform workers may face difficulties in achieving a good **work-life balance**, since the **boundaries among work time, personal time and spaces are also blurred** (Bérastégui, 2021). To encourage platform workers to be available, work longer hours, and so on, platforms use various types of incentives, which can worsen **work-life conflicts**. In general, a poor work-life balance is associated with sleep problems, exhaustion, difficulties recuperating from work, stress, depression, burnout and an overall dissatisfaction with work and personal life (Bérastégui, 2021). However, several studies indicate that platform work can also contribute to improving platform workers' work-life balance, as it allows them to work when it fits in with their life, such as women working from home and combining platform work

²⁴ For example, the algorithm can be programmed such that all tasks have the same remuneration, without accounting for experience or effort. Another example is that algorithms may favour workers with specific human capital or assets (such as a specific type of car, in the case of Uber). Turning to procedural justice, an example would be that platforms may not consistently apply the same procedure to all workers or cases, or may favour clients over workers. Finally, regarding interactional justice, the lack of conflict resolution mechanisms is seen by many platform workers as a signal that they are not respected. Bérastégui (2021) concludes that platforms do not live up to platform workers' expectations of distributive, procedural and interactional justice.

with caregiving tasks (Berg, 2016; Caracciolo di Torella and McLellan, 2018; Eurofound, 2018a; Advisory Committee on Equal Opportunities for Women and Men, 2019).

Nonetheless, platform workers may spend many hours online looking for work (for example, time spent that is not remunerated) or executing tasks, have unpredictable and unstable/irregular work schedules, and have little or no control over their working time. These issues arise across all types of platform work, on-location and online. In particular, platform workers engaged in online work such as programming may need to be available for extended periods of time or adapt to the time zone of their client (such as freelancers working anti-social hours or through the night to be available to respond to a client's requests). For instance, in the case study on online content reviewers, overwork and long hours are common, due to fierce competition among workers, the work intensity, and workers' dependence on having a good reputation and constant availability to get work (Graham et al., 2017; Eurofound, 2018a). In the case of remote programmers, Urzi Brancati et al. (2020) report that 'online software development' are among the types of platform work for which the incidence of longer hours is the highest. Moreover, this type of platform work tends to take place to a large degree outside typical (9:00 to 17:00) working hours (Urzi Brancati et al., 2020).

Third, digital platform workers are typically isolated when performing their tasks; they have **no support from colleagues or management** (which in the case of platform work may be replaced by an algorithm) (European Parliament, 2020; Bérastégui, 2021) and work on their own, often without direct contact with their clients. In addition, the high turnover of workers, the anonymity of platform work and the lack of a common workspace mean that platform workers in general have little or no contact with other platform workers. At the same time, platform workers continuously compete with other workers, who they might not even be able to identify or contact, for the same tasks. Finally, the use of algorithms to allocate, monitor and evaluate work means that platform workers often have no or very little direct contact with the platform either (for example, perhaps only via a helpdesk accessed through a chat function on the platform app or automated messages). This is a source of stress for many platform workers, and it leaves little or no room for emotional support (Eurofound, 2018a, 2019a; Bérastégui, 2021). Workplace social support, in the form of coaching, career mentoring, task support or collegial support, however, is critical to job satisfaction and job tenure (Bérastégui, 2021).

The findings from the four case studies on platform work illustrated that professional isolation becomes particularly pressing in the context of online platform work (such as remote programming and online content review), which is usually performed at home (physical isolation) with little or no physical contact with the platform, the client or other platform workers (social isolation), as the entire process of contracting, executing and delivery of tasks is done online. Management roles are taken up by algorithms, and often rely on little to no human involvement (EU-OSHA, 2021). For example, workers may only be able to contact the platform via a chatbot or website, which can cause frustration, especially when platform workers urgently need assistance (for example, due to an accident) (Eurofound, 2018). Moreover, dehumanisation of work and relationships can make jobs less satisfying as the human/social aspects are lost and tasks become less varied (EU-OSHA, 2018). Additionally, the lack of face-to-face communication and an overall lack of social contact has the potential to lead to less well-developed social skills (EU-OSHA, 2018). On the other hand, the issue of professional isolation and its OSH implications appear to be less pronounced in on-location platform work. In the case on parcel delivery, it was observed that many platform workers build up relationships with other workers in their field (Urzi Brancati et al., 2020; Bérastégui, 2021). In the case on handiwork, it was observed that isolation as such is very specific to this type of job, regardless of whether they are working for themselves or on a platform. However, although limited, platforms may provide more support than what would be the case if performing these jobs outside the platform economy (as a non-professional or self-employed), (Eurofound, 2018a; 2020b). For instance, the platform worker interviewed for RingTwice mentioned that the platform organised some online video calls to meet him. During these meetings other platform workers were also present and the interviewee stated that he felt motivated to start applying for new tasks again. Another platform interviewed has also set up Facebook groups in each country where they are active, in which platform workers can have exchanges with each other and share thoughts, grievances as well as professional tips'.

▪ **Work transience and boundaryless careers**

Platform work is associated with **(chronic) job insecurity and income insecurity**, as platform workers depend on the tasks that they are assigned or choose to take up, and platform work is based on temporary, short-term assignments that do not guarantee any long-term work relationship. Job and income insecurity are major work-related stressors and have been associated with poor mental

health, burnout, depression, anxiety and physical health issues such as fatigue and pain (Cottini and Lucifora, 2013; Huws, 2015; Mattila-Wiro et al., 2020; Bérastégui, 2021; ILO, 2021). Many types of platform work, especially relatively low-skilled online work, provide little or no opportunities for skills development through training or for career progression in the longer term (European Commission, 2020; Bérastégui, 2021). Being considered self-employed, platform workers are deemed responsible for their own training and career development.

In most cases, it is either the platform or the client who assigns tasks to platform workers, which means that **platform workers have little or no control over how much work they actually have to do**. Platform workers are thus faced with both objective and subjective job insecurity (Bérastégui, 2021). In only 1 out of the 10 most common types of platform work identified by Eurofound (2018a) could the platform worker determine the work allocated to them. This leaves platform workers in a vulnerable position and may pressure them into being available on a near-continuous basis and to do as many tasks as possible. Many platform workers may fear being dismissed by the platform for refusing to take up certain tasks, even if they have little experience in the work required, which could lead to dangerous situations. This is particularly true for those engaged in low-skilled online and on-location work that does not require specific skills and can be done by anyone, as they often feel that they could be easily replaced (European Commission, 2020; Bérastégui, 2021). Finally, platform workers fear not only that they might find themselves without work, but also that the terms and conditions under which they work might be unilaterally changed/worsened (Graham et al., 2017; Bérastégui, 2021). In addition, platform workers may not earn sufficient **pay per task** to make a living (or are not allocated a sufficient number of tasks to earn a living). In general, the income earned through platform work tends to be unpredictable depending on a number of factors.

Moreover, because of the way platform work is organised, platform workers are faced with considerable **emotional demands**, which may be a source of stress especially when the power relationships between the platform/client and the platform worker are imbalanced (Bérastégui, 2021). To be assigned work and maintain a good rating, both on-location and online platform workers may need to hide their feelings, be friendly and flexible, and be ready to answer any request (Rosenblat and Stark, 2016; Bajwa et al., 2018; Eurofound, 2018a; European Commission, 2020). This is emotionally exhausting. Coupled with the high level of work transience and lack of career prospects, platform work is more emotionally demanding than similar jobs in the traditional labour market (Bérastégui, 2021).

Although platform work in general is thus often associated with (chronic) job insecurity and income insecurity, diverging results appear when analysing findings from the fieldwork on the case studies of the four types of platform work. These differences appear to be associated with the skill level of the platform worker (such as a proxy for the nature, scale and complexity of the task in question), whether tasks are assigned by the platform, and whether or not the platform worker is able to set his/her own price. For instance, despite being freelancers, platform workers in microwork (such as online content reviewers; see EU-OSHA (2022g)) typically cannot set their own price and get a very low pay per task. According to COLLEEM II survey data, the calculated average pay per hour in microwork is about EUR 7 (Urzi Brancati et al., 2020). Berg et al. (2018) find that the calculated average hourly earnings range between USD 2 and 6.5, which is attributed to the low pay per task and the fact that many workers spend a significant amount of unpaid time looking for work or working on tasks that are rejected. Additionally, online content reviewers usually get tasks assigned by the platform and consequently have little control over when and how much to work. On the other hand, in the case on handiwork (see EU-OSHA, 2022f), job and income insecurity seemed less pertinent. Overall, the pay received for this type of platform work is generally high. Platform workers can set their own prices, although this is strongly correlated to the ratings they acquire (European Parliament, 2020). This also implies that it is often difficult for new platform workers to compete for tasks, which was echoed by one platform worker interviewed (Martin, 2016; Eurofound 2019a; European Parliament, 2020). Nonetheless, the available evidence suggests that the hourly pay for physically provided services does not seem to be lower for platform workers than non-platform workers carrying out comparable jobs (OECD, 2019; Eurofound, 2019b; De Groen et al., 2016). Eurofound (2018a), for example, also reports that some professionals (such as electricians) may charge higher prices doing platform work than through their own business or that of their employer, because they know that clients cannot find anyone else to perform the task. Likewise, in the case study on remote programming (see EU-OSHA, 2022h), Urzi Brancati et al. (2020) found that for 'software development', payment is the highest per task and per hour, in comparison with the other nine types of platform work covered.

3.4 Opportunities to improve OSH made possible by digital labour platform/platform work

Literature and evidence on the opportunities that platform work brings to OSH is quite scarce. In general, it is clear that the platform economy has led to the creation of jobs and income for workers who commonly face issues entering the labour market. Examples include newcomers who do not speak the local language but could easily take up online work in their own language, or on-location platform work which does not require knowledge of the local language, such as parcel delivery. Research has also indicated the opportunities that digital platform work presents for people with disabilities, as it (to some extent) allows them to independently control their work schedule and create individualised disability-accessible work systems (Yamamoto et al., 2011; Berg, 2016; Harpur and Blanck, 2020). Berg (2016) also highlighted the importance of online digital platform work for people with caretaking responsibilities for children or elderly family members, by the flexibility it presents as to when, how and where to work. In that way, digital platform work also presents opportunities for women, who long have dominated caretaking responsibilities in the European Union (Spasova et al., 2018; Zigante, 2018).

At the same time, many of the jobs offered in the platform economy were often performed to a large degree in the grey economy (for example, domestic work and handyman jobs). In that sense, platform work may present an excellent pathway in the fight against undeclared work, concerning both underreporting of the self-employed and the ‘formalisation’ of non-professionals. The marketisation of such work through digital marketplaces means increased traceability, and since digital platforms are facilitated by electronic payment systems, there is an increased opportunity to bring undeclared work out of the shadow economy (Hodgson, 2020). In that way, it may also provide opportunities for improved OSH and working conditions, as it allows the relevant authorities to reach those workers who were previously invisible.

In addition, albeit mostly theoretical, the literature has identified several opportunities an increased reliance on digital technologies brings to OSH management which are more adapted to these new working environments such as platform work, where a dispersed and diverse workforce, controlled by algorithmic management is the standard (Podgórski, 2017; 2021; Moore et al., 2018; Cockburn, 2021). It must be mentioned that some of these options allow a high degree of intrusiveness into the lives of digital platform workers, thereby raising concerns of data protection and privacy (Podgórski, 2021; De Stefano, 2019, European Parliament, 2021). These must all be accounted for in the design of new approaches to OSH management, including through a revamped focus of collective bargaining in this regard (Moore et al., 2018; De Stefano, 2019). In that sense, methodological transparency regarding algorithms is a necessary precondition (Burrell, 2016; Mateescu and Ngyuen, 2019; European Parliament, 2020; European Commission, 2020).

Digital platforms’ algorithms could theoretically be adapted by integrating OSH prevention measures into their design, for example by aligning working-time obligations and implementing safety management programmes (such as fatigue assessment technology) (Samant, 2019). For instance, since the outbreak of COVID-19, it has been reported that digital platforms are increasingly connecting health and safety measures to surveillance measures, such as temperature scans or mandatory selfies to prove that they have been wearing masks (Ustek-Spilda et al., 2020; Fairwork, 2020). Furthermore, the ‘virtualisation’ of digital platform work could also mean that workplace safety and health training move online, through the use of safety and health apps and online training programmes (Moore et al., 2018). From the perspective of enforcement, ‘smart’ monitoring tools might increase the efficiency of labour inspections (Samant, 2019; Cockburn, 2021). For example, this could allow tele-inspections based on real-time video feeds, which are particularly relevant for access to the workplace for online digital platform workers, who mostly operate from home (EU-OSHA, 2018; Samant, 2019). Additionally, although it was mentioned above how on-location platform workers may face violence, harassment and abuse, and be exposed to crime (Eurofound, 2018; ILO, 2021), the features of platform work do present opportunities to reduce the risk of third-party violence, for instance by the elimination of cash payment and the identification of clients through their registration on the platform. In addition, algorithmic practices such as geolocation should in theory allow for quicker police or medical intervention, reducing the severity of the incident or the consequences of the injuries.

4 Policies, practices, initiatives and actions related to OSH in digital platform work

4.1 Introduction

Following the mapping of the OSH challenges related to digital platform work, this section zooms in on the policies, practices, initiatives and actions targeting OSH that are available or are under discussion at the EU level and in the EU Member States. The section first recalls the EU OSH strategic framework on health and safety at work. It then highlights what policies, practices, initiatives and actions address - directly or indirectly - OSH in digital platform work, looking both at top-down and bottom-up measures. Finally, four policy case studies are highlighted.

4.2 The EU OSH Strategic Framework

The European Commission recently launched **the EU Strategic Framework on Health and Safety at Work 2021-2027**,²⁵ which was adopted on 28 June 2021.²⁶ Building on the 2014-2020 EU OSH Strategic Framework, the new framework aims at maintaining and improving safety and health standards while accounting for a changing world of work, not in the least concerning digital platform work. Indeed, one of the three key objectives identified in the framework is 'anticipating and managing change in the new world of work brought about by the green, digital and demographic transitions'.

OSH Framework Directive and its 'Daughter Directives'

Directive 89/391/EEC - OSH Framework Directive - lays down the main principles for encouraging improvements in the safety and health of workers. The OSH Framework Directive contains obligations for both employers and workers, although workers' obligations do not affect the primary responsibility of the employer (Article 5(3) OSH Framework Directive). It is the employer's obligation to ensure the safety and health of workers in every aspect related to work (Article 5(1) OSH Framework Directive). To that end, the OSH Framework Directive contains general principles concerning risk assessment, prevention and control measures, and the informing, consultation, balanced participation and training of workers and their representatives (Article 1(2) OSH Framework Directive). EU Member States must ensure adequate controls and supervision in the implementation of these obligations, which is a role usually borne by labour inspectorates and OSH agencies (Article 4(2) OSH Framework Directive).²⁷ The OSH Framework Directive is accompanied by single directives (daughter directives)²⁸ that make the principles and instruments of the OSH Framework Directive more concrete regarding the specific hazards at work, single tasks and different workplaces with elevated risks.

However, as indicated above, the OSH Framework Directive and its daughter directives do not apply outside the domain of 'dependent employment'. Therefore, as most platform workers are classified as self-employed (EU-OSHA, 2017; European Commission, 2020), the vast majority of those working through digital labour platforms are excluded from the provisions laid down in these directives.

²⁵ Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: EU Strategic Framework on Health and Safety at Work 2021-2027 Occupational safety and health in a changing world of work (COM 2021(23) final). Available at: <https://ec.europa.eu/social/BlobServlet?docId=24122&langId=en>.

²⁶ The legal basis for the OSH Strategic Framework lies in Article 153(2) of the Treaty on the Functioning of the European Union (TFEU), authorising the EU to adopt legislation on health and safety to support and complement the activities of its Member States.

²⁷ Labour inspectorates play a central function in promoting safety and health at work and are increasingly focusing their attention on the anticipation, definition and prevention of emerging risks (Cockburn, 2021).

²⁸ For example, Directive 1989/654/EEC on the minimum safety and health requirements for the workplace, Directive 2009/104/EC on the minimum safety and health requirements for the use of work equipment by workers at work, Directive 1989/656/EEC on the minimum health and safety requirements for the use by workers of personal protective equipment, Directive 1990/270/EEC on the minimum safety and health requirements for work with display screen equipment and Directive 1998/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

4.3 Policies and practices targeting OSH in digital platform work

With the proliferation of digital platform work, policy- and decision-makers are increasingly taking action to address some of the challenges that this new form of work and the new business models bring. Based on an expert survey, the European Commission (2020) identified 177 measures or initiatives across the EU-27, the United Kingdom, Norway and Iceland, targeting digital platform work. Most of them related to digital platform workers' employment status, representation, earnings, and social protection (European Commission, 2020). In the Commission (2020) study, measures are divided into 'top-down' and 'bottom-up' measures. Top-down measures include legislation (laws formalising policies, setting out standards, procedures or principles), case law (judicial decisions), actions of administrations or inspectorates (for example, inspectorates issuing declarations). Bottom-up measures are collective agreements and social partner initiatives, actions by platforms, and actions by platform workers.

The European Commission (2020) study reports that with the exception of Italy and France, at the time, no countries had introduced legislation directly targeting the **working conditions or social protection** of digital platform workers, though most countries had legislation that indirectly addressed these areas, for example by strengthening the rights and protection of non-standard workers or the self-employed. The study also revealed actions by administrations and inspectorates, for example in Belgium, Denmark, France, the UK and Sweden, but not all of those had a link with working conditions or OSH. In fact, the research indicates that the **issue of OSH in the digital platform economy has been largely overlooked by policy- and decision-makers**. Among the bottom-up responses, some examples were noted of basic safety training and insurance against work-related accidents and occupational diseases offered by platforms, as well as of provisions of basic PPE by platforms. Although OSH was raised as a concern by unions and grassroots organisations representing workers, research revealed a general lack of awareness and a lack of action.

The 2021 thematic review on platform work of the European Centre of Expertise (ECE) in the field of labour law, employment and labour market policies (ECE, 2021) updates this exercise, and corroborates its main findings. The aim of the report was to present the most recent evidence and challenges related to work through digital platforms across all 27 Member States. Its results show that very few EU Member States have addressed the challenge of the **ambiguous employment status** of people working through platforms, tackling it directly through legislation on platform work (such as in Italy, France or Spain). Regarding national policy measures addressing **labour and social rights** in platform work, several country articles highlighted how some national legislators have taken steps to address these challenges of platform workers carrying out activities in specific sectors such as personal transport and food/parcel delivery (France, Greece, Italy, Lithuania, Portugal). For example, in Portugal, new legislation (2018) regulates the activity of individual paid transport of passengers by ordinary vehicles (TVDE).²⁹ Among other aspects, the law ensures a limitation of working time, while obliging platforms to apply instruments to ensure that these limits are complied with. At the same time, the report stressed that in several Member States there is a strong continuing debate and potential new policy initiatives underway, aimed at improving the working conditions of platform workers (France, Germany, Finland, Luxembourg, Lithuania, Portugal, Spain). For example, in Germany, a Green and White book on the future of work was published, in which digital platform work took prominence. The German Federal Ministry of Labour proposes establishing transparency and reporting obligations for all platforms as well as give platform workers the right to data portability and the transferability of their own ratings.

An even more recent update of this work was published in December 2021, as part of a study prepared to support the impact assessment of an EU initiative to improve the working conditions in platform work (European Commission, 2021). This EU initiative itself has been designed to address three core issues emerging in digital platform work: (i) misclassification of the employment status of platform workers; (ii) fairness and transparency of algorithmic management practices applied by digital labour platforms; and (iii) enforcement, transparency and traceability of platform work, including in cross-border situations. In the study, a review of national policies and measures implemented in the area of digital platform work in the EU-27 and seven non-EU countries is presented. More specifically, countries can be clustered into four groups based on these policies and measures. A first group includes those countries that are most active in regulating digital platform work, and have, at least in part, tackled the issue of the classification of the employment status of digital platform workers (Austria, Denmark, France, Germany, Ireland, Italy, the Netherlands, Luxembourg). The second group of countries reports only limited

²⁹ ACT No 45/2018. Available at: <https://dre.pt/dre/detalhe/lei/45-2018-115991688>

discussion about the classification of the employment status of digital platform workers, either because misclassification is not perceived as a priority or because the existing regulatory framework is seen as sufficiently adequate to tackle such issues (Croatia, Czechia, Finland, Hungary, Lithuania, Malta, Poland, Romania, Slovakia, Sweden). The third group of countries is characterised by an absence of initiatives addressing the status of platform workers (Bulgaria, Cyprus, Estonia, Latvia, Slovenia). The fourth group of countries (Belgium, Greece, Spain, Portugal) falls somewhere among the three other clusters: these countries do report measures and initiatives tackling misclassification but have fewer other initiatives aimed at improving the working conditions in digital platform work and have a lower prevalence of platform work overall. The study also confirms that there are few measures directly addressing digital platform work, and that direct measures tend to have a narrow scope.

Within this study, the main findings of which are presented in this report, the aim of the **consultation of EU-OSHA's national focal points** was to update this overview from the OSH perspective. The consultation focused on five types of measures taken by (i) the government or public authorities (such as legislation or court cases); (ii) OSH authorities or labour inspectorates; (iii) social partners, including social dialogue; (iv) platform or platform workers (or their associations), and (v) any other measure. The consultation confirmed that the levels of awareness about digital platform work and its OSH implications significantly differed across the EU Member States and underlined the differences in approaches taken by different actors within these countries to address them. According to the national focal points, digital platform work is perceived as a **relatively new trend and a new form of atypical work**, which has spurred debate on issues such as platform workers' employment status and social rights (including OSH) in some countries (Austria, Finland, France, Croatia, Norway, Poland, Sweden), however, digital platform work has received limited attention in other countries (Latvia, Lithuania). Actors involved in the debate are policy-makers, administrations, platforms, social partners, experts, and so on. In many countries, a lack of evidence on digital platform work has triggered (a call for) further research and data collection, including on OSH issues. In a few countries, a platform work observatory has been set up, for example in France, a trade union dedicated to the self-employed (FNAE) created the 'observatory of uberisation' in 2016.³⁰

While EU-OSHA's national focal points recognise the OSH risks in digital platform work, they **confirm that platform workers are usually not considered when it comes to OSH measures in their country**, pointing to the difficulties with the qualification of the labour relation (Austria, Finland). Several countries report legislation - either legislation that was announced, under discussion, or already in place - targeting digital platforms or digital platform work, but this generally appears to target specific types of platforms or platform work only (mostly transport services). Actions by inspectorates were reported in Luxembourg, Poland and Croatia, while in Finland and Norway, digital platform work is also a topic of interest for the inspectorates. Few initiatives and actions by social partners were identified (again mostly in the transport sector), and even fewer initiatives by platforms in relation to OSH (such as a working group uniting digital platforms, set up by the Lithuanian Business Confederation, which is discussing the provision of accident insurance for couriers). These inputs and insights from the national focal points fed into the selection of the policy case studies presented below.

Taken together, the latest research and additional fieldwork carried out in this study reveal that, although the challenges of digital platform work are a priority at both the EU and the Member States levels, it is clear that **few regulations, policies, strategies, programmes, initiatives and actions directly relate to OSH**. Although a somewhat **larger number of measures addresses OSH indirectly**, for example by clarifying the nature of the labour relationships, OSH issues in digital platform work remain largely unaddressed by all actors and stakeholders concerned at all levels. On this note, the case studies of four types of platform work presented in section 3.2 uncovered **only few practices undertaken by digital labour platforms**. In almost all cases, digital platform workers were classified as self-employed and thus deemed responsible for their own health and safety. Overall, there was limited awareness of and attention to OSH among platforms, and no examples were found of platforms that had an overall OSH policy for their platform workers. When OSH procedures were in place, for example, in relation to work accidents, these were often poorly documented or remained quite basic. Efforts related to OSH risk prevention and management appeared limited overall (for example, only basic training is provided). There was also limited or no involvement of digital platform workers in OSH matters, which is problematic, as described above.

³⁰ This observatory can be found here: <https://www.uberisation.org/>.

From this overview, it is clear that there are key regulatory gaps concerning OSH in digital platform work. In this light, the new EU proposal of Directives aimed at improving the working conditions and social rights of platform workers, with a view to support conditions for the sustainable growth of digital labour platforms, presents important opportunities. More specifically, this initiative addresses:³¹

- the **correct classification of the employment status** – which is critical as the OSH regulatory framework in the EU and the Member States most often only tackles dependent employment relationships;
- the **fairness, transparency and responsibility of algorithmic management** – which is the most distinguishing feature of digital platform work, and has significant impacts on the physical and psychological health, wellbeing and safety of digital platform workers; and
- the **transparency, traceability and knowledge of developments in digital platform work** and the **enforcement of applicable rules** – which is essential to improve the knowledge base on digital platform work, to foster the exchange of data and information among stakeholders, to clarify the applicable regulatory framework and contribute to the monitoring and enforcement of these rules.

4.4 Deep dive: four policy case studies

To gain further insights into relevant programmes, strategies, policies, regulatory and legislative actions and initiatives in the area of OSH in digital platform work, four case studies presenting examples of such measures were developed. Cases were selected based on several criteria, including the type of measure (such as legislation or inspectorate initiative), the actors involved (such as government, monitoring and enforcement bodies or social partners), the types of digital platform work, digital labour platforms or digital platform workers targeted (for example, only transport sector or all digital platform workers), and the thematic scope (for example, employment status or working conditions). The case studies covering Italy (Bologna Charter, overall legal framework) (EU-OSHA, 2022b) and France (overall legal framework) (EU-OSHA, 2022c) were selected as these countries are frontrunners in adopting legislation directly targeting the working conditions in digital platform work. The Spanish Rider's Law case study (EU-OSHA, 2022a) was chosen as it is highly innovative, it tackles digital platform work at its core by imposing rules on algorithmic management and helps clarify the employment status of some platform workers. The fourth case study highlights key actions and initiatives undertaken by labour and social security inspectorates in several EU Member States and reveals how these inspectorates have overcome key barriers raised by digital platform work (EU-OSHA, 2022d). This section presents a summary of each of these four case studies, while further details can be found in the accompanying publications (see EU-OSHA, 2022a, 2022b, 2022c, 2022d).

4.4.1 The Spanish Riders' Law³²

The **Riders' Law**³³ is the first to establish, at the national level, a right to **algorithmic transparency** (Article 64.4 of the Workers' Statute) and further introduces a **legal presumption of a dependent employment relationship for digital platform workers working in the delivery sector** (Additional Provision 23 of the Workers' Statute). The law is the outcome of tripartite social dialogue between the Spanish Ministry of Labour and Social Economy, trade unions and business associations. Although it remains to be seen how some of the law's provisions will be interpreted in courts, the combination of algorithmic management and the legal presumption are such that the requirement of legal dependence may be met whenever the working conditions and the conditions of service are set by algorithms. However, it is important to point out the extremely limited scope of this law. Nevertheless, together with the different actions and initiatives taken by the Spanish Labour and Social Security Inspectorate, in many respects, Spain provides different best practices that can serve as an example.

■ Legal presumption of a dependent employment relationship

Spanish courts have ruled on several platform work cases, in particular in the food delivery and personal transport sectors. Here also, one of the main issues regarding platform work is the nature of the labour

³¹ See: https://ec.europa.eu/commission/presscorner/detail/en/ip_21_6605

³² A brief summary of this case study is presented here; the full study is available as EU-OSHA (2022a).

³³ The law was adopted on 11 May 2021 and entered into force on 10 August 2021. Real Decreto-ley 9/2021, BOE, 12 May 2021, Sec. I, p. 56733 et seq. (Available at: <https://www.boe.es/boe/dias/2021/05/12/pdfs/BOE-A-2021-7840.pdf>). See also: <https://www.eurofound.europa.eu/nl/data/platform-economy/initiatives/riders-law>

relationship between the digital platform worker and the digital labour platform, which in Spain centres around the criteria for the qualification of a worker as an employee in the Workers' Statute. As in other Member States, court cases have led to different outcomes over the years. In September 2020, this uncertainty was somewhat resolved by an important ruling of the Supreme Court, which ruled that a digital platform worker active in the delivery sector should be classified as an employee.³⁴

The Riders' Law adds an article to the **Workers' Statute**, which stipulates that activities of persons who provide paid services consisting of the delivery or distribution of consumer products or merchandise by employers who exercise business powers of organisation, management and control directly, indirectly or implicitly using algorithmic control to manage the service, or to shape the working conditions, through a digital labour platform, fall within the scope of the law. In this way, there is a rebuttable presumption of a dependent employment relationship for such workers. The 'burden of proof' (presumption) falls on the employer to prove that the worker is self-employed and not an employee. As a result, Law No 31/1995 on the Prevention of Occupational Risks also applies to platform workers in the delivery sector, obliging platforms to conduct OSH risk assessments, implement risk prevention measures, and consult and inform platform workers on all issues concerning safety and health at work.

▪ **Algorithmic management and the importance of algorithmic transparency**

As discussed in detail in section 3.3.2, algorithmic management presents severe OSH risks. Despite its far-reaching impact, little is known about how algorithms work or why decisions are made. The Spanish Riders' Law is a critical step forward in that respect, as it obliges all platforms to inform platform workers' legal representatives about the functioning of the algorithms used which may affect the working conditions and the access to and maintenance of employment, including profiling (Article 64.4 of the Workers' Statute). It compels digital labour platforms to inform the work council on the inner workings of the platform (such as parameters, rules or instructions guiding algorithms). Although the organisation and representation of platform workers is a challenge in itself, efforts have been made in this area by multiple parties (including self-organisation by workers, for example, Riders X Derechos and unions).

▪ **Conclusions**

The Riders' Law addresses some of the most pertinent challenges associated with digital platform work, including issues indirectly related to OSH. The legal presumption that platform workers active in the delivery sector are employees, but even more so by opening up the 'black box' of algorithmic management, the Riders' Law constitutes a leap forward in addressing OSH risks specific to the context of platform work. Furthermore, the law serves as a key example of the continued importance of social dialogue and worker participation in this context. Nevertheless, areas for further improvement could be identified. First, the presumption of employment only applies to platform workers in the delivery sector, which limits its scope and does not reflect the wide heterogeneity of platform work. Second, digital labour platforms may seek to circumvent the law by working with subcontractors. Finally, further clarification on the technical and practical scope of the provision on algorithmic management is needed.

4.4.2 The Italian legislative framework and the 'Bologna' Charter³⁵

A second case study analyses the Bologna Charter - Charter of Fundamental Rights of Digital Labour in the Urban Context³⁶ - and provides an overview of the Italian legislative framework targeting digital platform work. This case is of particular interest, given its **direct link to OSH**, and since it highlights the **specific urban dimension of policy responses** and documents how local initiatives **help to pave the way for national legislation**.

▪ **Court cases and legislative initiatives in Italy**

In Italy, the employment status of platform workers in the delivery sector is one of the most contentious issues related to digital platform work, as evidenced by the number of court cases with conflicting results. In 2019, the Italian legislator intervened on the matter by easing the scope of the concept of employer-organised work³⁷ for those working through digital platforms, and by introducing specific rights for self-

³⁴ Spanish Supreme Court 805/2020, of 25 September 2020.

³⁵ A brief summary of this case study is presented here; the full study is available as EU-OSHA (2022b).

³⁶ Available at: http://www.comune.bologna.it/sites/default/files/documenti/CartaDiritti3105_web.pdf.

³⁷ See the case study on Italy for a more in-depth discussion of the concepts of and the differences between the concepts of 'employer-organised work' (collaborazioni continuative organizzate) and 'employer-coordinated work' (collaborazioni coordinate e continuative) in relation to the concepts of employee and self-employed worker.

employed workers active in the delivery sector on digital platforms (rights regarding transparency and information, data protection, applicability of OSH provisions, anti-discrimination and fixed hourly wages). These provisions are to be considered the default rule absent any collective agreements.

In September 2020, a collective agreement was announced between AssoDelivery (organisation which represents the majority of platforms active in the delivery sector) and UGL (a smaller trade union).³⁸ This agreement was immediately contested by the major Italian trade unions and the Ministry of Labour: the introduction of piece-work methods of payment in the collective agreement was deemed incompatible with the legal provisions requiring platforms in the delivery sector to pay out hourly wages.

Following an investigation launched after a series of digital platform workers' accidents, the Milan public prosecutors' office and the Italian Labour Inspectorate jointly ordered four major food delivery platforms to hire over 60,000 couriers as 'employer-organised workers' and to pay a total of EUR 733 million in fines. In a press release, the Milan Public Prosecutors' Office emphasised that labour relation between the workers and the platforms involved are not qualifiable as 'autonomous and occasional services' but are 'coordinated and continuous services'.

The investigation not only revealed several violations of OSH regulations but also discovered that workers are managed by an algorithm which ranked them according to performance and forced them to accept all orders in order not to be demoted, rendering it impossible in practice to take holidays or sick leave. Another example that clearly rebuts the 'flexibility for workers' mantra all too often falsely advertised by too many platforms.

In 2019, the Lazio region in Central Italy adopted legislation covering all digital platform workers, obligating platforms to provide workers with OSH insurance, access to training, PPE and compensation for the maintenance costs thereof, as well as a prohibition of the 'pay per task' system.

Also in 2019, the northern region of Piedmont introduced a legislative proposal which aims to codify the criteria regarding the qualification of labour relations of platform workers applied by the Italian courts. Furthermore, the proposal includes a right to be consulted for trade unions regarding the design of managerial algorithms. It prohibits rating mechanisms based on the performance of digital platform workers. Both initiatives seem to be inspired by actions of the municipality of Bologna.

▪ **Bologna Charter: Fundamental Digital Labour Rights in an Urban Context**

After an episode of heavy snowfall in the city of Bologna in the fall of 2017, a group of delivery riders went on strike and marched to the city hall to demand decent working conditions for platform workers, highlighting the importance of OSH. In response to these demands, the City Council of Bologna started negotiations with trade unions and digital labour platforms. The reasoning of the Bologna City Council was simple: given that the riders' workplace is the streets of the city, the City Council felt that it had the responsibility to take care of the situation. This ultimately led to the adoption of the 'Charter of fundamental rights of digital labour in the urban context' in 2018. The Charter's legal status must be placed within the realm of tripartite social dialogue, with the Bologna city authorities as the state-side stakeholder. As for its scope, the provisions only apply to the territory of Bologna and include all platform workers *irrespective of their employment status*. As such, challenges related to the qualification of the labour relation, for which the local level has no legal competences, are avoided. However, in practice, the main focus lies on platform delivery services.

Since concerns about OSH were one of the main demands of Riders Union Bologna when appealing to the City Council to take action, the Bologna Charter is particularly ambitious regarding OSH matters, requiring platforms to develop an OSH management system, and to adopt all appropriate measures to assess, prevent and reduce risks and hazards and to provide insurance for work-related accidents and occupational diseases. Last but not least, the Charter provides that workers have the right to refuse tasks without repercussions when faced with extraordinary weather conditions.

▪ **Conclusions**

In Italy, the emergence of digital platform work gave rise to a number of court cases and actions from enforcement authorities with disparate results, leading to interventions from both higher-level courts and the legislature. More specific to Italy are regional (legislative) initiatives often taken within the framework

³⁸ See the case study on Italy: <https://www.eurofound.europa.eu/data/platform-economy/initiatives/collective-agreement-between-assodelivery-and-ugl>

of, or as a result of, a social dialogue. For example, the Riders Union Bologna played an important role in relation to the Bologna Charter as explained above.

In particular, the innovative and proactive approach of the City of Bologna may inspire other cities and regions in Europe facing similar issues with the platform economy. Nevertheless, one should bear in mind the **limited scope** of the initiative, and not just territorially: only four platforms active in the delivery sector in Bologna signed the voluntary agreement so far. Even more important issues: the lack of competence to legislate in the field of the Charter's core provisions, combined with its non-binding and voluntary nature, renders hard enforcement impossible. That being said, 'softer' tools such as voluntary (and non-binding) charters are more easily achievable and can produce direct concrete improvements of the working conditions of digital platform workers, including OSH. However, given the relevance of OSH and the potential impact of non-compliance with the OSH regulatory framework on fundamental rights of workers involved, but also third parties (such as traffic participants), one can raise questions by the fact that such issues need to be addressed by soft law measures or measures with questionable legal grounds, leaving them unenforceable and completely dependent on the goodwill of actors among which some have proven to be most active in the evasion of any rule or regulation applicable.

Nevertheless, the Charter has been a factor in raising awareness on important issues with platform workers in Italy, which is reflected both at the national level, through the adoption of Legislative Decree No 101/2019, and at the regional and local levels, where public administrations have implemented similar agreements (such as Piedmont, Lazio, Milan and Modena). The Charter contains provisions about important issues such as OSH, algorithmic management and its impact on OSH, minimum remuneration and how this is calculated, transparency and worker participation, and it has had a direct positive impact on the working conditions of platform workers in Bologna. Indeed, all the stakeholders consulted in this case study firmly acknowledged the positive difference in working conditions between digital platforms that signed the Charter and the ones that didn't.

4.4.3 The French legislative framework on digital platform work³⁹

Since 2016, a number of legislative initiatives have been introduced in France, relating to digital platform work. This framework consists of three main laws and two ordinances, yet the latter are not yet in force:

- Law No 2016-1088 of 8 August 2016 on labour, the modernisation of social dialogue and the securing of professional careers (the 'El Khomri law')
- Law No 2018-898 of 23 October 2018 on the fight against fraud
- Law No 2019-1428 of 24 December 2019 on the orientation of the means of transport ('LOM')
- Ordinance No 2021-487 on the exercise of the activities of digital intermediation platforms in various sectors of public road transport
- Ordinance No 2021-484 on the terms of representation of self-employed workers using platforms in the course of their activity, and the conditions for the exercise of this representation

The El Khomri law in particular has often been described in research and policy as a major step forward towards protecting platform workers, which could inspire policy-makers in other Member States to act (European Commission, 2020). A more critical assessment, however, points to the limited scope of the law and only limited rights granted to platform workers under this legislative framework. In addition, there are few direct links of these laws and ordinances to OSH. All legislative initiatives under investigation address OSH indirectly.

Interestingly, however, is that Ordinance No 2021-487 obliges platforms to share data and information with authorities and administrations.⁴⁰ Any proof that supports the authority's **control mission** must be provided, and any medium (books, invoices, other professional documents, whomever may have it in their possession) suitable for **inspections** must be provided on request. Platforms are required to provide the necessary means to carry out inspectors' verifications and they must grant access to stored

³⁹ A brief summary of this case study is presented here; the full study is available as EU-OSHA (2022c).

⁴⁰ Note the distinctions the French Legislation makes a) between passenger transport and the transport of goods, and b) between digital platforms providing food delivery and taxi services ('opérateur de plateforme d'intermédiation numérique') and online platforms for ride-sharing and car-pooling ('opérateur de bourse numérique'). The obligations for the latter are less severe.

data or algorithms and to the unencrypted restitution of information suitable to facilitate inspections. **The provision of such information and data is critical to perform monitoring and enforcement actions.**

Importantly, Ordinance No 2021-484 will provide **collective rights for self-employed platform workers**. Also here, while the direct link may not be obvious, the relevance and importance of worker participation and collective bargaining in the field of OSH is an established fact and is a key component of the EU OSH body of EU law.

- **El Khomri law**

As one of the first laws specifically aimed at the platform economy in an EU Member State, the El Khomri law stipulates that **platforms which determine the characteristics of the goods sold or of the services provided, and set the price thereof**, have a ‘**social responsibility**’ towards workers using their platforms. However, **the personal scope of the El Khomri law is limited**: it is only applicable to workers who are **self-employed** and use digital labour platforms in the context of their **professional activities** (Chatzilaou, 2020).

For all digital platform workers that fall within this limited scope, the El Khomri law provides **the right to form and join a trade union, and to defend their collective interests through it** (Chatzilaou, 2020; Grelet-Certenais, 2019-2020). For digital platform workers that meet the conditions and earn at least 13 % of the annual social security ceiling of sales revenue through platform work (EUR 5,347.68 in 2021, as set by Decree) (Chatzilaou, 2020), the El Khomri law foresees a right to **continuous professional training** and to be **insured against work-related accidents and occupational diseases**. In both cases, digital labour platforms bear the costs, which in practice comes down to reimbursing platform workers during the following year, provided workers are able to prove that their annual turnover met the minimum threshold. Another limitation is that being insured remains voluntary.

- **Law on the fight against fraud**

The law on the fight against fraud aims towards a **better detection, understanding and sanctioning** of different sources of fraud, not limited to those within the platform economy. To this end, the law establishes new means of detecting and characterising fraud by harmonising the tools available to administrations and by intensifying data sharing between administrations. The law strengthens the means to sanction fraud, notably by introducing administrative sanctions against parties who did not commit fraud but did facilitate it.

The law on the fight against fraud contains several provisions regarding digital platform work. It uses a broad conceptualisation of platforms: it applies to any platform connecting people remotely by electronic means, with a view to sell goods, provide services, or exchange or share goods or services (Article 242 bis of the General Tax Code). The law obliges digital labour platforms to **report amounts paid to digital platform workers to the tax administrations**. The law also obliges platforms to provide its users and the French fiscal authorities with information on the **identification details** of the platform and its users, the **status of private person or professional** as indicated by users, and **the number and the gross total sum of the transactions performed** during the past year (Article 242 bis of the General Tax Code). If known to the platform, details of the bank accounts in which the income earned via the platform is deposited must be provided.

Digital labour platforms failing to meet the obligations set in the law get a global flat-rate fine of maximum €50,000 and a fine equal to 5 % of the undeclared sums. According to the latest available data, about 120 platforms have filed declarations for income received in 2019, covering about 1.2 million natural persons and 0.4 million professionals and legal entities.

- **LOM**

Although the law **on the orientation of the means of transport** was introduced to make the daily means of transport cleaner, easier and less expensive, the LOM is of particular relevance to digital labour platforms. More specifically, the LOM introduced a ‘**right to refuse**’ and a ‘**right to disconnect**’ for digital platform workers **driving a ‘transport car’ or delivering goods using a motorised or non-motorised two- or three-wheeled vehicle**, such as taxi services. The right to refuse implies that platform workers can refuse tasks without penalty. The right to disconnect ensures that platform workers can freely decide on when to work. Both provisions are also important from an OSH-perspective.

Furthermore, the LOM provides that digital labour platforms can establish a **charter** (but are not obliged to do so), which lays out key aspects related to working via the platform, such as OSH risk prevention,

working conditions, price setting, skills development, opportunities for career progression, information sharing and dialogue between platform worker and platforms, changes in the terms and conditions, and so on. The idea behind this charter is to **foster transparency and ensure workers' rights**, including on safety and health.⁴¹ These elements may all contribute to OSH risk prevention and risk management. Most importantly, and in contrast to the provisions of the Spanish Riders' Law, the LOM initially provided that the establishment of a charter would entail **a legal presumption that the platform workers concerned were not in a relationship of subordination with the platform** and thus could not be qualified as employees. This provision - and this legal presumption in particular - was subsequently **annulled by the French Constitutional Court**.⁴² In this light, it has to be noted that, to date, no charters have been established.

▪ **Conclusions**

The French legislative framework, often lauded as a key example of progress towards improved working conditions of digital platform work, is tainted by important limitations. This legal framework is **very limited in both material and personal scope**, leaving at least the majority of platform workers (if not all) faced with legal uncertainty. The key issue of the **employment status** of platform workers remains unaddressed, and thus the majority of **issues regarding OSH unresolved**.

In addition, despite **major steps forward in the area of information and data sharing**, which indeed is critical to help detect labour relations in the platform economy and to clarify their nature, it is clear that currently there is **little monitoring and enforcement of compliance** of platform work, even with basic OSH rules and regulations. As such, **vast areas of the platform economy remain uncharted and unmonitored territories**.

Nevertheless, parts of the legislative framework do pay attention to **empowering platform workers and giving them a voice** - which is also key for OSH risk prevention and management. The framework further engages platforms and by doing so, it may foster social dialogue in the platform economy, which in turn could help improve working conditions and OSH.

However, in light of the issues discussed above, in practice, the French legal framework may not be very effective.

4.4.4 Actions and initiatives of labour and social security inspectorates⁴³

The digital platform economy has triggered actions from different enforcement authorities in a large number of EU Member States. In most Member States, these actions have been, and unfortunately in many cases still are, characterised by **a lack of an efficient and coordinated strategy** in dealing with this 'new' phenomenon. This complicates both the monitoring and enforcement of OSH regulations, resulting in **a high number of infringements of workers' labour rights, creating risks and hazards to society at large, and disrupting the level playing field for compliant market players**.

Data on paid activities performed on digital labour platforms are mostly absent, as are data on workers concerned, the number and severity of infringements, and data on the number and severity of OSH-related infringements and work-related accidents and diseases.

▪ **Disparate actions by different enforcement authorities: lessons to be learned**

A prime example of the disparity of actions by enforcement authorities, can be found in Poland, where the majority of the reported cases that involved labour and social security inspectorates were instigated by traffic police and thus **confined to the most visible forms of platform work**: taxi and delivery services. Investigations by the labour inspectorates revealed a very high number of infringements of various rules and regulations. Moreover, around 10 % of the workers investigated were found to be illegally staying third-country nationals or legally staying third-country nationals without proper work permits. Such situations typically are **precarious**, with detrimental effects on the fundamental rights of the workers concerned, not in the least with regards to OSH.

Another interesting case is Belgium. Similar to France, Belgium was one of the first and few EU Member States with dedicated legislation on platform work, although primarily in the field of fiscal law (European

⁴¹ See <https://www.eurofound.europa.eu/data/platform-economy/initiatives/revision-of-the-legal-framework-for-platform-workers>

⁴² French Constitutional Court, Decision No 2019-794 DC, 20 December 2019. More details can be found at: https://www.conseil-constitutionnel.fr/sites/default/files/as/root/bank_mm/decisions/2019794dc/2019794dc.pdf.

⁴³ A brief summary of this case study is presented here; the full study is available as EU-OSHA (2022d).

Commission, 2020). Already in 2016, the government introduced a legislative framework⁴⁴ aiming to boost digital platform work. Of key interest in the Belgian case are the recent joint inspections carried out by the labour and social security inspectorates targeting Deliveroo.⁴⁵ The investigation led to the initiation of judicial proceedings against Deliveroo, launched by the public prosecutors at the labour court. On 9 December 2021, the Labour Court in Brussels ruled in favour of Deliveroo, deciding that the couriers were rightly classified as independent contractors. In the judgment, the court pointed out, among other things, that the couriers have the freedom to organise their work themselves (they can refuse deliveries, for example), and that the investigation does not show the existence of legal subordination.⁴⁶

▪ Spain: a good practice with some room for improvement

The actions and initiatives of the Spanish Labour and Social Security Inspectorate (ITSS, Inspección de Trabajo y Seguridad Social) can be considered good practice. As in other EU Member States, before 2017, the initial monitoring actions in Spain were initiated mainly after **complaints by platform workers, which raised the ITSS's awareness** that the digital platform economy needed scrutiny. These initial actions were dispersed and showed that **using different approaches led to different outcomes**. In this light, in 2017, the ITSS took the firm **decision to harmonise the monitoring of the digital platform economy and started aggregating information from different sources** (such as previous cases, information obtained via workers who filed complaints, from trade unions or from the platforms' websites). The ITSS developed a **'guide on the collaborative economy'**, aimed explicitly at assisting ITSS inspectors in the monitoring of platform work and the enforcement of applicable legislation, by providing information on the platform economy, information on specific investigation procedures for inspections of platform work, indicators that focus on aspects such as an analysis of the website or app, the concept of platform or algorithmic management, guidelines, case examples and so on.

As in many other countries, the qualification of the employment relationship between the platform and its workers was, and is, one of the key issues in monitoring and enforcing compliance of applicable regulations. However, **the ITSS tackled this issue by treating platform activities as other forms of undeclared work**. Campaigns targeting **bogus self-employment in platform work** have been developed as part of the 2018-2020 Labour and Social Security Inspection Strategic Plan.⁴⁷ The plan presents a range of **operational measures directly targeting platform work**, for example, providing the inspectorates with the technical means necessary to facilitate the identification of those involved in digital platforms; **issuing an operations manual to assist inspectorate officials and train specialists**; and conducting a campaign to inspect platforms.

▪ Conclusions

Although policy-makers, social partners and researchers have underlined the role that labour and social security inspectorates could play in the application and enforcement of existing regulations, the cases discussed here uncovered many challenges, of which the **ambiguous employment status of platform workers** emerges as the main issue. A more performant system to qualify labour relationships and easier pathways to requalification in the case of bogus or false self-employment, are imperative in this regard. The idea of making the core of the OSH framework applicable to all digital platform workers regardless of their employment status, was also raised by several stakeholders. The Polish case is a telling example here, given the broad application of the OSH regulatory framework.

Another common issue is the **lack of data and information** on digital platform work. The Spanish ITSS, in particular, has been active, adaptive and successful in monitoring the platform economy and enforcing applicable legislation. In 2019-2020, the ITSS identified 11,013 false self-employed workers on a single platform alone. Such actions, dating from before the Riders' Law, make clear that inspection services *can* monitor and enforce compliance despite issues regarding the qualification of the labour relation

⁴⁴ Programmawet 1 juli 2016, Belgisch Staatsblad 4 juli 2016, 40.97, also known as the 'Law De Croo'.

⁴⁵ Sometime before these inspections took place, the national social security office (NSSO) asked Uber Belgium for data, Uber Belgium claimed not to have any and referred the NSSO to its Dutch counterpart, UBER BV. Neither UBER BV nor the Dutch inspection services provided any data. The NSSO left it at that. Given the vast competences on data collection bestowed to Belgian inspection services, this is a remarkable decision. Furthermore, the refusal of both UBER BV and the Dutch inspection services to provide data should have raised red flags.

⁴⁶ See: https://trends.knack.be/economie/bedrijven/deliveroo-koeriers-zijn-geen-werknemers-maar-zelfstandigen-oordeelt-brusselse-arbeidsrechtbank/article-news-1810315.html?cookie_check=1639684012

⁴⁷ See http://www.mitramiss.gob.es/ficheros/ministerio/plandirector/National_Plan_for_Decent_work.pdf.

between worker and platform. The successes of the ITSS are the result of a predetermined strategy, in which much attention is dedicated to training inspectors to deal with new challenges. Actions by the ITSS were organised in a coordinated manner, unifying investigation procedures. As such investigations are difficult and time- and resource-intensive, some actions were coordinated by a Special Unit at the Central Services, for example, when different regional divisions were involved. The guide the ITSS developed is another best practice to be picked up by other countries' inspection services. Finally, from the case of Belgium, the importance of information exchange and a close collaboration between the authorities and other stakeholders emerges as a key building block.

A final point relates to the **tools and approaches which inspectorates have available**. As pointed out by the Polish labour inspectorates, they do not have the right tools to monitor digital platform work. The Spanish case presents a good illustration here, as much effort was devoted to capacity building and training of inspectors, for example through the development of information campaigns, technical manuals, trainings and related actions.

5 Conclusions and policy implications

The literature review and field work conducted in this study revealed that in the area of OSH, digital platform work not only presents severe challenges to the physical and psychological health, safety and wellbeing of digital platform workers, but also challenges the prevention and management of such OSH risks.

5.1 OSH challenges in digital platform work

In spite of all the fuss, the digital platform economy does not create completely new jobs, but rather gives rise to additional tasks or a different combination of tasks within existing jobs, and involves a new way of organising and managing them. As a result, at the task and job level, the OSH risks that emerge are similar to those in the regular economy and that are encountered by other workers doing comparable tasks. On this note, it is important to recall that platform work is often concentrated in sectors and occupations that are, as such, considered dangerous.

These OSH risks, however, are aggravated in the case of digital platform work as a result of the nature of this type of work and the conditions under which it is performed. Digital platform work combines the use of **algorithmic management and digital surveillance** with **non-standard work arrangements**, which in practice typically implies that high levels of control over work organisation, allocation, monitoring and evaluation lie with the digital labour platform. Digital labour platforms monetise and exploit the data that are provided by and generated by their users (clients and workers), and processed by the algorithm. The **uncertainty about the correct legal classification of the employment status** of digital platform workers additionally has a severe impact on OSH in digital platform work, as most OSH regulations at the EU level and in the Member States are applicable to those in a dependent employment relationship only. Additionally, platform work has been associated with **professional isolation, work-life conflicts, a lack of social support**, and **(chronic) job and income insecurity**. This all not only leads to an externalisation of risks and costs, including concerning OSH, but also to an externalisation of key managerial and organisational responsibilities.

The **four examples of platform work** analysed in this study revealed different degrees by which the potential health and safety risks are aggravated. Overall, the available evidence suggests that OSH challenges are most striking for online content reviewers and parcel delivery riders and drivers, although challenges persist in the other types of platform work too (remote programming, handiwork).

- Regarding the employment status, in all types under review, nearly every platform worker is classified as self-employed or as an independent contractor. For remote programmers and those carrying out handiwork, this classification does appear to reflect the actual situation. Overall, these platform workers experience a large degree of autonomy and flexibility in determining how, when and how much they work. Additionally, they are more often than not able to set their own prices, and select their own clients, without interference from the platform.
- Online content reviewers and parcel delivery riders are much more restrained in that regard. In those cases, tasks are typically assigned by the platform, with workers having less control over when and how much they work. Digital labour platforms appear to deploy a relatively high level of control through algorithmic management and digital surveillance in those types of platform work, which raises questions about the degree of subordination that platform workers in these types of platform work are subjected to. Despite being freelancers, platform workers in online content review and parcel delivery typically cannot set their own price.
- As it relates to job and income insecurity, differences between the types of platform work are associated with the nature, scale and complexity of the task, whether tasks are assigned by the platform, and whether the platform worker is able to set his/her own price. In that respect, challenges are less important in the context of high-skilled professionals performing on-location work (such as handiwork) or online work (such as programming).
- In general, it appears that only minimal information and support are provided by the platforms regarding health and safety standards (see also below). No general policies regarding OSH have been found in the platforms under investigation, despite some anecdotal evidence that positive changes are being made.

5.1.1 Key takeaways for policy- and decision-makers

Takeaway 1: Focus efforts on getting a good understanding of the OSH challenges and opportunities in digital platform work by gathering knowledge and data on working and employment conditions (such as OSH), considering differences among various types of digital platform work, digital labour platforms and digital platform workers:

- The study has revealed that the understanding of digital platform work, and in particular of OSH challenges in digital platform work, is limited among core stakeholders across the EU Member States. Efforts should be made to raise awareness and exchange data and knowledge among such stakeholders (labour inspectorates, OSH authorities).
- Further research and targeted data collection efforts are needed on OSH prevention and management in platform work (such as through registration and reporting obligations for digital platforms). These topics have been largely overlooked in the literature, but they are critical to supporting the actions of governments, social partners, labour inspectorates and OSH authorities in the field. This topic is also elaborated on further below.
- There is scarce and mostly theoretical evidence in research on the OSH opportunities created by digital platform work and how these can be reaped, which is a gap to be addressed. For instance, the opportunities provided by algorithms to integrate OSH prevention measures into their design (such as aligning working-time obligations) need to be explored further.

Takeaway 2: Introduce measures to help reduce or eliminate information asymmetries and power imbalances between digital labour platforms and digital platform workers by:

- facilitating the determination of the employment status of platform workers
- addressing the prevalence of undeclared work in the platform economy
- opening up the algorithmic 'black box' to shed light on the functioning of the platforms' algorithms and the repercussions of algorithmic management for platform workers
- creating opportunities for dialogue among digital platform workers and among platform workers, platforms and other stakeholders (for example, social partners, OSH authorities)
- addressing issues in relation to working time, non-transparent or unpredictable working conditions
- ensuring effective monitoring and enforcement of existing OSH regulatory frameworks, as applicable (see also below).

5.2 OSH risk prevention and management in digital platform work

The study also confirmed how the nature and conditions of platform work complicate OSH risk prevention and risk management. More specifically, the **unclear employment status and classification of digital platform workers as self-employed** imply, in practice, that digital platforms externalise obligations, which were historically assumed by employers based on traditional employer-employee relationships. This is mainly because platforms contend that they solely provide online intermediation and not the underlying services. Moreover, other **essential characteristics of digital platform work** complicate the implementation of fundamental components of OSH management systems with respect to risk assessment, preventive and protective measures, training, worker participation and labour inspections. The examples are plenty: difficulties in identifying and reaching platform workers (due to the anonymous and geographically spread workforce with a high turnover), the lack of a common and fixed workplace, the temporary nature of the contractual relations, the lack of collective organisation, and related issues.

From this, however, it follows that the **OSH regulatory framework at the EU level and in the Member States may not be (fully) applicable to platform workers**. It also implies that OSH authorities may be unsure if platform work falls within their remit, as was confirmed in the case example covering the French legislative framework. The study has indeed shown that the uncertainty about the nature of the labour relations has deterred governments and public bodies, including labour and social security inspectorates and OSH authorities, from taking action concerning digital platform work, arguing that only work activities set in a dependent-employment relationship fall within their remit.

With the adoption of the Riders' Law, Spain became the first country to oblige digital labour platforms active in the delivery sector to recognise digital platform workers as employees by way of presumption.

While this is an important step forward, the presumption only applies to a specific group of platform workers, who are performing work with characteristics that resemble, to a large extent, the features of dependent employment. In addition, uncertainty is likely to persist, as digital labour platforms are likely to resort to subcontracting to avoid any responsibilities, a practice which we have seen continuing as well in Spain after the adoption of the Riders' Law. At the same time, the European Commissions' proposed Directive does not provide any relevant clause in relation to subcontracting either, thereby not offering platform workers any protection against those practices. Overall, the question can be asked whether the singular focus on the divide between the self-employed and employees as the gateway to labour protections (including OSH) for platform workers is the right way forward for policy-makers in Europe, if the desired end result is the improvement of working conditions and OSH for *all* platform workers.⁴⁸

That being said, the European Commission's proposed Directive on improving the conditions of platform work draws inspiration from this Spanish law, but with the explicit ambition to be applicable to all platform workers, including also cases where the employment status is not so clear. The proposed directive confirms that the determination of the existence of an employment relationship must be guided primarily by the facts relating to the actual performance of the work, accounting for the use of algorithms in the work allocation, irrespective of how this relationship is classified by the parties involved. Of critical importance is the proposed rebuttable legal presumption of the status of employee for platform workers in cases where the digital labour platform controls the performance of work.

To determine whether this is the case, at least two of the following conditions must be met: a) the platform effectively determines, or sets upper limits to, workers' remuneration; b) workers are required to respect specific, binding rules with regard to appearance, conduct towards the recipient of the service or performance of the work; c) the platform supervises the performance of work or assesses the quality of its results, including by electronic means; d) the platform effectively restricts, including through sanctions, the freedom to organise one's work, in particular, working time and the ability to accept or to refuse tasks or use subcontractors or substitutes; and/or e) the worker's ability to build a client base or perform work for a third party is effectively restricted.

Although in recent years a growing debate on the working conditions of digital platform workers concerned can be observed, it is clear that there is an **overall lack of awareness for and attention to OSH and other fundamental rights** of digital platform workers in both research and policy. A sense of urgency seems to be lacking among many stakeholders and actors at all levels in the EU (digital labour platforms, platform workers, authorities, policy-makers, academia). This complicates both risk prevention and management, including monitoring and enforcement of the OSH regulations.

Another observation is that despite the efforts of some actors and stakeholders, in practice, **remedies for the challenges in the field of OSH are mostly absent and, if not absent, often insufficient or narrow in scope**. At the level of the digital labour platform, for example, the four case examples zooming in on particular digital platform work types uncovered some basic guidelines and recommendations to manage OSH, but no examples were found of general OSH policies implemented by the platforms. A recurring argument heard by platforms during interviews for the case studies was that they are willing to do more regarding OSH, but they fear reclassification as employer if they do so. Turning to policies and regulation, this study showed that only few measures target digital platform work directly, and **legislation that does target platform work specifically often does not address OSH or, when it does, in some cases it appears to diminish OSH-coverage rather than extend it**. This is the consequence, at least partially, of the underlying reasoning that platform workers are self-employed - a reasoning that in recent years has increasingly been contradicted in jurisprudence, especially in the

⁴⁸ In that context, during the EU-OSHA symposium on the new EU OSH Strategic Framework, EU Commissioner for Jobs and Social Rights, Nicolas Schmitt, who launched the Framework on 28 June 2021, stated that 'digitalisation is rapidly changing the world of work, including working conditions - and not always for the better'. Referring to platform workers, the EU Commissioner highlighted 'the need to provide protection for all of them, independently of their status' and said: 'Platform workers are very often not protected by our OSH rules because they are considered self-employed, which I personally consider not appropriate. Our rules in terms of health and safety should apply to everybody; employed, self-employed and entrepreneurs and that the new OSH Framework aims to address these changes to the way we work to ensure that everybody is protected - all of the time'. (ibid) See: <https://euoshahybrid2.nirestream.com/uploads/evento/euoshahybrid2/symposium-5-july-summary-final-pdf.pdf?updated=1626790742>

case of on-location low-skilled platform workers. Starting from the reasoning that workers are self-employed, granting them 'extra' rights (for example, regarding OSH) seems a legitimate course of action.

However, such 'extension' of rights, could easily result in a diminished protection for workers who could otherwise fall under the protection for employees. A similar issue has been noted in countries where a 'third status' in between employee and self-employed exists: digital platform workers are often classified under this category and miss out on rights and protection that they would have received if classified as an employee instead (such as food delivery riders with the 'auto-entrepreneur' status in France; see Eurofound, 2018). Moreover, policy that starts from or embraces the idea that digital platform workers are mostly self-employed is often inconsistent in other areas, as it is typically not accompanied by a monitoring and enforcement of rules applicable to similar self-employed workers outside of the platform economy, for example, qualifications or licenses required for certain professions, quality or safety standards and certifications, regional and/or federal business taxes, VAT and social security contributions.

Additionally, the available evidence shows that the limited policies and regulations in place target lower-skilled on-location workers overwhelmingly, despite the fact that this subset only constitutes a fraction of the wide, heterogeneous landscape of platforms operating in Europe. As referred to above, this can partly be explained by the fact that those platform workers are among the most visible examples of people active in the platform economy as well as the fact that the characteristics of this type of platform work resemble to a large extent the features of dependent employment as opposed to other forms of platform work.

A closer look at Member States' legislative frameworks thus reveals that digital platform work is **largely left unregulated**. In many Member States, neither labour nor social security inspectorates competent for monitoring the self-employed actively monitor the platform economy. As a result, and as also reported by various interviewed stakeholders, the largest part of the digital platform economy remains uncharted territory, and also involves significant amounts of undeclared work activities. As such, digital labour platforms may create unfair competition with other market players both inside and outside of the platform economy, with negative effects on, for example, professional standards and consumer protection and on the health and safety of workers and the general public. At the same time, it has to be acknowledged that platform work has created opportunities for some workers and activities to come out of the undeclared economy, for example, domestic workers and handiworkers.

The case studies focussing on policies, practices, initiatives and actions targeting OSH in digital platform work corroborated these conclusions. The French legislative framework, for example, and the El Khomri law, in particular, introduced changes in the social and fiscal legislative framework, providing some self-employed platform workers with individual and collective rights that are common among employees: access to training, insurance against accidents at work and occupational diseases, and the right to join and to form a trade union. The scope of the French legislative framework targeting digital platform work, however, is limited and its provisions are often voluntary, for example the establishment of a charter by the digital labour platforms. This undermines the effectiveness of the legislative framework. The Bologna Charter, too, is often applauded as a major step forward in improving the working conditions of platform workers in the Italian city of Bologna, although its non-binding and voluntary nature makes enforcement of the minimum standards set out in the Charter nearly impossible. Moreover, although the Charter's scope extends to all types of platform work, its main focus lies on (food) delivery, notably as all signatories to the Charter are active in this area.

In addition, several stakeholders point out the **lack of data** concerning both the platform economy as a whole, and of platforms, platform workers and activities performed in particular. Regarding OSH, such lack of data is problematic, by making it difficult to estimate the size and severity of risks and challenges, but also by rendering monitoring and enforcement of applicable rules and legislation de facto impossible. Last but not least, it is difficult to estimate the cost of work-related accidents or health issues that are not declared as occupation-related issues and remain either uncovered, or covered under the general health care system of the Member States concerned. Although some digital labour platforms do provide some form of work-related insurance, both the platforms and the insurance companies concerned refuse to reveal data on the number and nature of work-related accidents and other health-related issues.

5.2.1 Key takeaway for policy- and decision-makers

Takeaway 3: *Increased efforts should be made to raise awareness about the key importance of OSH issues in general and of risk prevention and management, as well as to foster respect for OSH fundamental principles among government authorities, digital labour platforms and digital platform workers:*

While this lack of awareness is inherently connected with the debate on the employment status of platform workers, this should not be a barrier to increasing transparency and support overall. This can be grounded on the principle of public interest and the principles of the welfare state (for example, reducing healthcare costs, playing a critical role in protecting workers' health for the functioning of society and the continuity of critical economic and social activities). Awareness raising and information campaigns and strategies targeted at workers, digital labour platforms, trade unions, authorities and competent inspection services, policy-makers at all levels and any third party concerned would be helpful in this regard. For instance, the Bologna Charter was a major factor in raising awareness about the situation of platform workers in Italy, which is reflected both at the national level, through the adoption of Legislative Decree No 101/2019, and at the regional/local level where public administrations have implemented similar agreements.

Takeaway 4: *More transparency is needed to facilitate the work of OSH actors (such as competent authorities, workers and workers' organisations):*

To facilitate the work of OSH actors (such as competent authorities, workers and workers' organisations), more transparency is urgently needed. This can be achieved by including provisions in policy and legislation on digital platform work that support the identification of platforms and of platform workers, for example by imposing reporting obligations on platforms towards the authorities (such as labour and social security inspection services, tax authorities and so on), as in the French legislative framework. It must also be acknowledged that the European Commission's proposal of a Directive on improving working conditions in platform work should also bring more transparency around the platform economy by clarifying existing obligations to declare work to national authorities and asking platforms to make key information about their activities and the people who work through them available to national authorities.

Related to this point, transparency about the functioning of platforms' algorithms is critical given algorithms' severe impact on workers' health and safety. The Spanish Riders' Law serves as an excellent source of inspiration for what can be done (see also below). The proposed Directive on improving working conditions in platforms equally forms an important step in that direction (Article 6-9).

Takeaway 5: *Monitoring and enforcement of OSH regulations in digital platform work should be strengthened:*

This can be done by ensuring that the respective authorities have the knowledge, means and resources to do so. The example of Spain, where labour inspectors are trained and receive guidance on how to inspect digital platform work, can serve as inspiration here. At the same time, their actions make clear that inspection services *can* monitor and enforce compliance despite issues regarding the qualification of the labour relation between the worker and the digital labour platform. An inventory of resources and capacity of inspection services, in particular those services competent for OSH, and a collection of reliable and interoperable data on the number of actions related to platform work, the number of platform workers and platforms monitored, the assessment of OSH risks in the platform economy by inspection services, the number of incidents and health-related issues recorded and the outcomes of the actions undertaken. The Senior Labour Inspectors' Committee (SLIC) and/or the European Labour Authority (ELA),⁴⁹ in cooperation with EU-OSHA, could potentially play a critical role of coordination in this regard, and foster knowledge exchange among (OSH) authorities in various Member States.

Takeaway 6: *Digital platform workers and their representative organisations (grassroots organisations, trade unions) should be informed and involved in the prevention and management of OSH risks in digital platform work:*

Social partners are highly recommended to continue their efforts in organising and representing platform workers, paying attention in particular to those workers who are less visible. This is also in line with the

⁴⁹ See Article 7 of Regulation (EU) 2019/1149 of 20 June 2019 establishing a European Labour Authority.

European Commission's communication on the EU Strategic Framework on Health and Safety at Work 2021-2027 which, with regard to social dialogue, highlighted how social partners are very well placed to find solutions adapted to the circumstances of a specific activity or sector.⁵⁰ In that sense, the recently proposed guidelines on the application of EU competition law to collective agreements of solo self-employed people is to be welcomed. The case study on the Bologna Charter also provides a testimony of the important role that workers and workers' organisations could play in making progress in the working conditions and health and safety of digital platform work. Platforms should ensure that such involvement is respected and guaranteed, for example by making it mandatory for digital labour platforms to consult workers on OSH issues when changes are made to the work organisation or conditions, and which affect OSH. The Riders' Law in Spain equally provides a key example in this regard, by obliging platforms to inform the legal representatives of platform workers on the inner workings of the algorithms leading to (semi-)automated decisions 'influencing working conditions and work allocation'. Additionally, this provision is a first and vital step in the process of implementing the Human-In-Command approach (HIC), as promoted by the European Economic and Social Committee, the ILO and ETUC among others.⁵¹ Applied to the context of platform work, this would ensure that platform workers are actively participating/negotiating in the design of the algorithms, while also ensuring that the final decisions affecting working conditions are taken by human beings.

⁵⁰ European Commission, Communication on the EU Strategic Framework on Health and Safety at Work 2021-2027 - Occupational safety and health in a changing world of work, COM (2021) 323 final, Brussels, 28 June 2021 (Available at: <https://eur-lex.europa.eu/legal-content/en/TXT/HTML/?uri=CELEX:52021DC0323&from=EN>).

⁵¹ European Economic and Social Committee (2017), '*Artificial intelligence -The consequences of artificial intelligence on the (digital) single market, production, consumption, employment and society*'. Opinion No 7; ILO (2019), 'Global Commission on the Future of Work. Work for a Brighter Future'. Available at: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_662410.pdf; ETUC (2020a); 'AI - Humans must be in command'. Available at: <https://www.etuc.org/en/document/ai-humans-must-be-command>

6 References

- Advisory Committee on Equal Opportunities for Women and Men. (2019). *Opinion on new challenges for gender equality in the changing world of work*.
https://ec.europa.eu/info/publications/list-previous-opinions-advisory-committee-equal-opportunities-women-and-men_en
- Aloisi, A. (2019). *Negotiating the digital transformation of work: Non-standard workers' voice, collective rights and mobilisation practices in the platform economy* (EUI Working Paper, MWP 2019/03). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3404990
- Arsht, A., & Etcovitch, D. (2018, 2 March). The Human Cost of Online Content Moderation. *Jolt Digest*.
<https://jolt.law.harvard.edu/digest/the-human-cost-of-online-content-moderation>
- Bartel, E., MacEachen, E., Reid-Musson E., Meyer, S. B., Saunders, R., Bigelow, P., Kosny, A., & Varatharajan, S. (2019). Stressful by design: Exploring health risks of ride-share work. *Journal of Transport & Health*, 14, 100571. <https://doi.org/10.1016/j.jth.2019.100571>
- Bajwa, U., Gastaldo, D., Di Ruggiero, E., & Knorr, L. (2018). The health of workers in the global gig economy. *Globalization and Health*, 14(124). <https://doi.org/10.1186/s12992-018-0444-8>
- Bérestégui, P. (2021). *Exposure to psychosocial risk factors in the gig economy: A systematic review*. (ETUI Report, European Trade Union Institute). <https://www.etui.org/sites/default/files/2021-01/Exposure%20to%20psychosocial%20risk%20factors%20in%20the%20gig%20economy-a%20systematic%20review-web-2021.pdf>
- Berg, J. (2016). Income security in the on-demand economy: findings and policy lessons from a survey of crowdworkers. *Comparative Labor Law & Policy Journal*, 37(3).
<https://papers.ssrn.com/abstract=2740940>
- Berg, J., Furrer, M., Harmon, E., Rani, U., & Silberman, M. S. (2018). Digital labour platforms and the future of work: Towards decent work in the online world. *International Labour Office*.
https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_645337.pdf
- Burrell, J. (2016). How the machine 'thinks': Understanding opacity in machine learning algorithms. *Big Data & Society*, 3(1). <https://doi.org/10.1177/2053951715622512>
- Caracciolo di Torella, E., & McLellan, B. (2018). *Gender equality and the collaborative economy*. (Directorate-General for Justice and Consumers, European Commission, Brussels.)
https://www.researchgate.net/publication/332627084_Gender_Equality_and_the_Collaborative_Economy
- Cedefop. (2020). *Developing and matching skills in the online platform economy: Findings on new forms of digital work and learning from Cedefop's CrowdLearn study*.
<https://www.cedefop.europa.eu/en/publications-and-resources/publications/3085>
- Chatzilaou, K. (2020). Can digital platforms challenge French Labour Law? In S. Bellomo & F. Ferraro (Eds.) *Modern Forms of Work A European Comparative Study*, Sapienza University Press.
http://www.editricesapienza.it/sites/default/files/5999_Modern_Forms_of_Work_OA.pdf
- Cherry, M.A. (2016), "Virtual work and invisible labor" in M. Carin, W.R. Oister and M.A. Cherry (eds): *Invisible labor: Hidden work in the contemporary world* (Oakland, CA: University of California Press); pp.71-86.
- Christie, N., & Ward, H. (2019). The health and safety risks for people who drive for work in the gig economy. *Journal of Transport & Health*. 13, 115-127.
<https://www.sciencedirect.com/science/article/abs/pii/S2214140518305772>
- Countouris, N., Deakin, S., Freedland, M., Koukiadaki, A., & Prassl, J. (2016). Report on temporary employment agencies and temporary agency work. *International Labour Organisation*.
https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---ed_dialogue/msu/documents/publication/wcms_541655.pdf

- Cox, A., & Fletcher, L. (2014). *Scoping study for a foresight on new and emerging occupational safety and health (OSH) risks and challenges*. European Agency for Safety and Health at Work. <https://osha.europa.eu/en/publications/reports/scoping-study-for-a-foresight-on-new-and-emerging-osh-risks-and-challenges>
- Cottini, E., & Lucifora, C. (2013). Mental health and working conditions in Europe. *ILR Review*, 66(4), 958-988. <https://www.jstor.org/stable/24369560?seq=1>
- Cockburn, W. (2021). OSH in the future: Where next? *European Journal of Workplace Innovation*, 6, 84-97. <https://doi.org/10.46364/ejwi.v6i1.813>
- De Groen, W. P., Maselli, I., & Fabo, B. (2016). The digital market for local services: A one-night stand for workers? *CEPS Special Report*. <https://core.ac.uk/download/pdf/148900973.pdf>
- De Stefano, V. (2019). Negotiating the algorithm: Automation, artificial intelligence and labour protection. *Comparative Labour and Policy Journal*, 41(1). https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_policy/documents/publication/wcms_634157.pdf
- De Stefano, V. (2021). *Platform work and the employment relationship*. (ILO Working Paper 27), International Labour Organisation. https://www.ilo.org/global/publications/working-papers/WCMS_777866/lang--en/index.htm
- Donovan, S. A., Bradley, D. H., & Shimabukuro, J. O. (2016). *What does the gig economy mean for workers?* Congressional Research Service, United States Congress. <https://fas.org/sqp/crs/misc/R44365.pdf>
- Durward, D., Blohm, I., & Leimeister, J. M. (2016). Crowd work. *Business & Information Systems Engineering*, 58(4). https://www.researchgate.net/publication/303880641_Crowd_Work
- ECE - European Centre of Expertise on labour law, employment and labour market policies (2021). Thematic Review 2021 on Platform work. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8419&furtherPubs=yes>
- Eurofound. (2018a). *Employment and working conditions of selected types of platform work*. <https://www.eurofound.europa.eu/publications/report/2018/employment-and-working-conditions-of-selected-types-of-platform-work>
- Eurofound. (2018b). *Overview of new forms of employment 2018 update*. https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef18050en.pdf
- Eurofound. (2019a). *Platform work: Maximising the potential while safeguarding standards?* https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef19045en.pdf
- Eurofound. (2019b). *On-location client-determined moderately skilled platform work: Employment and working conditions*. <https://www.eurofound.europa.eu/sites/default/files/wpef19058.pdf>
- Eurofound. (2020). *Back to the future: Policy pointers from platform work scenarios*. <https://www.eurofound.europa.eu/publications/report/2020/back-to-the-future-policy-pointers-from-platform-work-scenarios>
- Eurofound. (2021). *Platform economy: Developments in the COVID-19 crisis*. <https://www.eurofound.europa.eu/is/data/platform-economy/dossiers/developments-in-the-covid-19-crisis>
- European Commission. (2020). *Study to gather evidence on the working conditions of platform workers*. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8280>
- European Commission. (2021). *Study to support the impact assessment of an EU initiative to improve the working conditions in platform work*. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8428&furtherPubs=yes>

- European Parliament. (2019). *Health and safety in the workplace of the future*. Briefing requested by EMPL Committee.
[https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/638434/IPOL_BRI\(2019\)638434_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2019/638434/IPOL_BRI(2019)638434_EN.pdf)
- European Parliament. (2020). *The platform economy and precarious work*.
[https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652734/IPOL_STU\(2020\)652734_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2020/652734/IPOL_STU(2020)652734_EN.pdf)
- European Parliament. (2021). *Improving working conditions using Artificial Intelligence*. (Study requested by the AIDA committee.)
[https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662911/IPOL_STU\(2021\)662911_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2021/662911/IPOL_STU(2021)662911_EN.pdf)
- ETUC. (2020a). *EU social partners agreement on digitalisation*.
<https://www.etuc.org/en/document/eu-social-partners-agreement-digitalisation>
- ETUC. (2020b). *Red card for platform abuses in the COVID-19 crisis*.
<https://etuc.org/en/document/red-card-platform-abuses-covid-19-crisis>
- ETUI. (2020). *COVID-19: A 'stress test' for workers' safety and health*.
https://www.etui.org/sites/default/files/2020-12/Covid-19%20a%20stress%20test%20for%20workers%20safety%20and%20health_2020.pdf
- EU-OSHA (2011), 'Delivery and despatch riders' safety and health: A European review of good practice guidelines'. Available at: <https://osha.europa.eu/en/publications/delivery-and-despatch-riders-safety-and-health-european-review-good-practice-guidelines>
- EU-OSHA. (2017). *Protecting workers in the online platform economy: An overview of regulatory and policy developments in the EU*. <https://osha.europa.eu/en/publications/protecting-workers-online-platform-economy-overview-regulatory-and-policy-developments>
- EU-OSHA. (2018). *Foresight on new and emerging occupational safety and health risks associated with digitalisation by 2025*. Publications Office of the European Union, Luxembourg.
<https://osha.europa.eu/en/publications/foresight-new-and-emerging-occupational-safety-and-health-risks-associated>
- EU-OSHA. (2021a). *Digital platform work and occupational safety and health: A review*.
<https://osha.europa.eu/en/publications/le-travail-sur-plateformes-numeriques-et-la-sante-et-la-securite-au-travail-analyse>
- EU-OSHA. (2021b). *Digital platform and occupational safety and health: A policy brief*.
<https://osha.europa.eu/en/publications/digital-platform-work-and-occupational-safety-and-health-policy-brief>
- EU-OSHA. (2022a). *Occupational safety and health risks of parcel delivery work organised through digital labour platforms*.
- EU-OSHA. (2022b). *Occupational safety and health risks of handiwork provided through digital labour platforms*.
- EU-OSHA. (2022c). *Occupational safety and health risks of online content review work provided through digital labour platforms*.
- EU-OSHA. (2022d). *Occupational safety and health risks of remote programming work organised through digital labour platforms*.
- EU-OSHA. (2022e). *Spain: The 'Riders' Law', new regulation on digital platform work*.
- EU-OSHA. (2022f). *Italy: A national and local answer to the challenges of the platform economy*.
- EU-OSHA. (2022g). *France: Lessons from the legislative framework on digital platform work*.
- EU-OSHA. (2022h). *What actions can labour and social security inspectorates take to help manage the OSH risks in platform work?*

- Fairwork. (2020). *The gig economy and COVID-19: looking ahead*. <https://fair.work/wp-content/uploads/sites/97/2020/09/COVID-19-Report-September-2020.pdf>
- Fussell, S. (2019, 15 April). Behind Every Robot Is a Human: Why Amazon workers sometimes listen in on users' conversations with Alexa, and what it tells us about the technology that powers 'smart' devices. *The Atlantic*. <https://www.theatlantic.com/technology/archive/2019/04/amazon-workers-eavesdrop-amazon-echo-clips/587110/>
- Garben, S. (2019). The regulatory challenge of occupational safety and health in the online platform economy. *International Social Security Review*. 72(3), 95-112. <https://doi.org/10.1111/issr.12215>
- Graham, M., Hjorth, I., & Lehdonvirta, V. (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. <https://doi.org/10.1177/1024258916687250>
- Gregory, K. (2018). Airtasker: Unions raise safety concerns over 'gig economy' cowboys. <https://www.abc.net.au/news/2018-03-09/unions-raise-safety-concerns-over-gig-economy-cowboys/9529736>
- Grelet-Certenais, N. (2019-2020). Proposition de loi visant à rétablir les droits sociaux des travailleurs numériques. Rapport n° 226, déposé le 8 janvier 2020, Sénat, Paris, 2020, p. 17. <https://www.senat.fr/rap/19-226/19-226.html>
- Hodgson, G. (2020). *Policy Brief: Migration and the Platform Economy*. https://www.icmpd.org/file/download/48133/file/Policy%2520Brief_%2520Migration%2520and%2520the%2520Platform%2520Economy%2520EN.pdf
- Hopkins, B. (2015). Occupational health and safety of temporary and agency workers. *Economic and Industrial Democracy*. 38(4), 609-628. <https://doi.org/10.1177/02F0143831X15581424>
- Howard, J. (2017). Nonstandard work arrangements and worker health and safety. *American Journal of Industrial Medicine*. 60(1), 1-10. <https://doi.org/10.1002/ajim.22669>
- Harpur, P., & Blanck, P. (2020). Gig workers with disabilities: Opportunities, challenges, and regulatory response. *Journal of Occupational Rehabilitation*, 30, 511-520. <https://doi.org/10.1007/s10926-020-09937-4>
- Huws, U. (2015). A review on the future of work: Online labour exchanges or crowdsourcing. *OSHWiki*. https://oshwiki.eu/wiki/A_review_on_the_future_of_work:_online_labour_exchanges_or_crowdsourcing#cite_note-1
- Huws, U., Spencer, N. H., Syrdal, D. S., & Holts, K. (2017). *Work in the European gig economy: Research results from the UK, Sweden, Germany, Austria, the Netherlands, Switzerland and Italy*. Foundation for European Progressive Studies, Brussels. https://www.feps-europe.eu/Assets/Publications/PostFiles/579_1.pdf
- Huws, U., Spencer, N. H., & Coates, M. (2019). *The platformisation of work in Europe: Highlights from research in 13 European countries*. Foundation for European Progressive Studies. <https://www.feps-europe.eu/attachments/publications/platformisation%20of%20work%20report%20-%20highlights.pdf>
- ILO. (2018). *Job quality in the platform economy*. (ILO Issue Briefs No 5). https://www.ilo.org/wcmsp5/groups/public/---dgreports/---cabinet/documents/publication/wcms_618167.pdf
- ILO. (2021). *World employment and social outlook: The role of digital labour platforms in transforming the world of work*. ILO Flagship Report. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_771749.pdf

- Iver, P., & Barve S. (2020, 2 April). Humanising digital labour: The toll of content moderation on mental health. *Digital Frontiers*. <https://www.orfonline.org/expert-speak/humanising-digital-labour-the-toll-of-content-moderation-on-mental-health-64005/>
- Ivanova, M., Bronowicka, J., Kocher, E., & Degner, A. (2018). *The app as a boss? Control and autonomy in application-based management*. (Work in progress interdisziplinärer Arbeitsforschung No 2.) <https://cihr.eu/the-app-as-a-boss/>
- Johnston, H., & Land-Kazlauskas, C. (2019). *Organizing on-demand: Representation, voice and collective bargaining in the gig economy*. (Conditions of Work and Employment Series No 94, International Labour Organisation, Geneva.) https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_624286.pdf
- Kalleberg, A. L. & Vallas, S. P. (2018). Probing precarious work: Theory, research and politics. In A. L. Kalleberg & S. P. Vallas (Eds.) *Precarious work: 31 (Research in the Sociology of Work)*. Emerald Publishing Limited, Bingley.
- Kessler, S. (2018, 12 June). The Crazy Hacks One Woman Used to Make Money on Mechanical Turk. *WIRED*. <https://www.wired.com/story/the-crazy-hacks-one-woman-used-to-make-money-on-mechanical-turk/>.
- Lee, M. K., Kusbit, D., Metsky, E. & Dabbish, L. (2015). *Working with machines: The impact of algorithmic and data-driven management on human workers*. In CHI' 15: Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems, Seoul, 18-23 April 2015. Association for Computing Machinery, New York, NY, 1603-1612. <https://doi.org/10.1145/2702123.2702548>
- Lenaerts, K., Kilhoffer, Z., & Akgüç, M. (2018). Traditional and new forms of organisation and representation in the platform economy. *Work Organisation, Labour & Globalisation*, 12(2), 60-78. https://www.jstor.org/stable/10.13169/workorglaboglob.12.2.0060#metadata_info_tab_contents
- Malenfer, M., Héry, M., Defrance, M., & Leïchle, J. (2018). 'Plateformisation': quelles conséquences en santé et sécurité au travail en 2027? INRS, Veille et prospective. <https://www.inrs.fr/media.html?refINRS=VP%2019>
- Martin, C. J. (2016). The sharing economy: A pathway to sustainability or a nightmarish form of neoliberal capitalism? *Ecological Economics*, 121(C). <https://ideas.repec.org/a/eee/ecolec/v121y2016icp149-159.html>
- Mateescu, A., & Ngyuen, A. (2019). *Algorithmic management in the workplace*. Data & Society Research Institute. https://datasociety.net/wp-content/uploads/2019/02/DS_Algorithmic_Management_Explainer.pdf
- Mattila-Wiro, P., Samant, Y., Husberg, W., Falk, M., Knudsen, A., & Saemundsson, E. (2020). *Work today and in the future: Perspectives on occupational safety and health challenges and opportunities for the Nordic labour inspectorates*. Ministry of Social Affairs and Health, Helsinki. <https://julkaisut.valtioneuvosto.fi/handle/10024/162419>
- Meskill, T. (2021, 12 May). Facebook content moderator speaks about mental health impact of her job. *RTE*. <https://www.rte.ie/news/ireland/2021/0512/1221241-online-content-moderator/>
- Möhlmann, M., & Zalmanson, L. (2017). *Hands on the wheel: Navigating algorithmic management and Uber drivers' autonomy*. Research Paper for the International Conference on Information Systems. https://www.researchgate.net/profile/Mareike-Moehlmann2/publication/319965259_Hands_on_the_wheel_Navigating_algorithmic_management_and_Uber_drivers%27_autonomy/links/59c3eaf845851590b13c8ec2/Hands-on-the-wheel-Navigating-algorithmic-management-and-Uber-drivers-autonomy.pdf
- Moore, P. V., Upchurch, M., & Whittaker, X. (Eds.) (2018). *Humans and machines at work: Monitoring, surveillance and automation in contemporary capitalism*. London, UK: Palgrave Macmillan.

- Muntaner, C. (2018). Digital platforms, gig economy, precarious employment, and the invisible hand of social class. *International Journal of Health Services*. 48(4) 597-600.
<https://doi.org/10.1177/0020731418801413>
- Nekhoda, E.V., & Kuklina, T.V. (2020, 21-22 May). Occupational safety and health in digital economy: Challenges for government regulation. Paper presented at 54th International Scientific Conference on Economic and Social Development, Novosibirsk, Russia. Varazdin Development and Entrepreneurship Agency, Croatia.
<https://www.proquest.com/openview/fba25ff355b44b57fd0e5c87ee00059c/1.pdf?pq-origsite=gscholar&cbl=2033472>
- OECD. (2018). *Gig economy: boon or bane?* (OECD Working Paper.) https://www.oecd-ilibrary.org/economics/gig-economy-platforms-boon-or-bane_fdb0570b-en
- OECD. (2020). *What have platforms done to protect workers during the coronavirus (COVID-19) crisis?* [https://read.oecd-ilibrary.org/view/?ref=136_136534-6kmopirex5&title=What-have-platforms-done-to-protect-workers-during-the-coronavirus-\(COVID-19\)-crisis%3F](https://read.oecd-ilibrary.org/view/?ref=136_136534-6kmopirex5&title=What-have-platforms-done-to-protect-workers-during-the-coronavirus-(COVID-19)-crisis%3F)
- Pastuh, D., & Geppert M. (2020). A 'circuits of power'-based perspective on algorithmic management and labour in the gig economy. *Industrielle Beziehungen*. 27(2), 179-204.
<https://www.budrich-journals.de/index.php/indbez/article/view/35199>
- Pesole, A., Urzi Brancati, M. C., Fernandez Macias, E., Biagi, F., & Gonzalez Vazquez, I. (2018). *Platform workers in Europe: Evidence from the COLLEEM survey*. JRC Science for Policy Report. Publications Office of the European Union, Luxembourg.
<http://publications.jrc.ec.europa.eu/repository/handle/111111111/52393>
- Podgórski, D. (2017). Towards a conceptual framework of OSH risk management in smart working environments based on smart PPE, ambient intelligence and the internet of things technologies. *International Journal of Occupational Safety and Ergonomics*, 23(1), 1-20.
<https://doi.org/10.1080/10803548.2016.1214431>
- Podgórski, D. (2021). *New opportunities and challenges in occupational safety and health management*. Boca Raton, FL: CRC Press.
- Polkowska, D. (2021a). Unionisation and mobilisation within platform work: towards precarisation—A case of Uber drivers in Poland. *Industrial Relations Journal*, 52(1), 25-39.
<https://ideas.repec.org/a/bla/indrel/v52y2021i1p25-39.html>
- Polkowska, D. (2021b). Platform work during the COVID-19 pandemic: A case study of Glovo couriers in Poland. *European Societies*, 23(Sup. 1), S321-S331.
<https://doi.org/10.1080/14616696.2020.1826554>
- Prassl, J. (2018). *Humans as a service: The promise and perils of work in the gig economy*. Oxford, UK: Oxford University Press.
- Quinlan, M. (2015). *The effects of non-standard forms of employment on worker health and safety*. (Conditions of Work and Employment Series No 67, International Labour Organisation, Geneva.) https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/publication/wcms_443266.pdf
- Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries: A case study of Uber's drivers. *International Journal of Communication*, 10(1), 3758-3784.
<https://ijoc.org/index.php/ijoc/article/view/4892>
- Ropponen, A., Hakanen, J., Hasu, M. and Seppänen, L., Workers' Health, Wellbeing, and Safety in the digitalizing Platform Economy, in Poutanen, S. Kovalainen, A. and Rouvinen, P. (eds.), Digital work and the Platform Economy, Routledge, 2019
- Royer, A. (2021) "The urgent need for regulating global ghost work", Brookings, 9 February, 2021, Available at: <https://www.brookings.edu/techstream/the-urgent-need-for-regulating-global-ghost-work/>

- Samant, Y. (2019). The promises and perils of the platform economy: Occupational health and safety challenges and the opportunities for labour inspections. *International Labour Organisation*. https://www.ilo.org/global/topics/safety-and-health-at-work/events-training/events-meetings/world-day-for-safety/33thinkpieces/WCMS_681619/lang-en/index.htm
- Schmidt, F. A. (2017). *Digital labour markets in the platform economy: Mapping the political challenges of crowd work and gig work*. Friedrich-Ebert-Stiftung. <http://library.fes.de/pdf-files/wiso/13164.pdf>
- Simonite, T. (2015, 1 December). When your boss is an Uber algorithm. *MIT Technology Review*. <https://www.technologyreview.com/2015/12/01/247388/when-your-boss-is-an-uber-algorithm/>
- Soderberg-Rivkin, D. (2019, 30 October). Five myths about online content moderation, from a former content moderator, *R Street Institute*. <https://www.rstreet.org/2019/10/30/five-myths-about-onlin-content-moderation-from-a-former-content-moderator/>
- Spasova, S., Baeten, R., Coster, S., Ghailani, D., Peña-Casas R., & Vanhercke, B. (2018). *Challenges in long-term care in Europe - A study of national policies 2018*. ESPN Report, European Social Policy Network, Directorate-General for Employment, Social Affairs and Inclusion, European Commission. <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8128&furtherPubs=yes>
- Stark, D., & Pais, I. (2021). Algorithmic Management in the Platform Economy. *International Journal for Sociological Debate*, 14(3). <https://doi.org/10.6092/issn.1971-8853/12221>
- Tran, M., & Sokas R. (2017). The gig economy and contingent work: An occupational health assessment. *Journal of Occupational and Environmental Medicine*. 59(4) 63-66. <https://doi.org/10.1097/JOM.0000000000000977>
- Urzi Brancati, M. C., Pesole, A., & Fernandez Macias, E. (2020). *New evidence on platform workers in Europe: Results from the second COLLEEM survey*. JRC Science for Policy Report, Publications Office of the European Union, Luxembourg. <https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/new-evidence-platform-workers-europe>
- Ustek-Spilda, F., Bertolini, A., Neerukonda, M., Taduri, P., Graham, M., & Salem, N. (2020). COVID-19, the gig economy and the hunger for surveillance. *Ada Lovelace Institute*. <https://www.adalovelaceinstitute.org/blog/covid-19-gig-economy-hunger-for-surveillance/>
- Vandaele, K. (2018). *Will trade unions survive in the platform economy? Emerging patterns of platform workers' collective voice and representation in Europe*. (ETUI Working Paper 2018.05, European Trade Union Institute, Brussels.) <https://www.etui.org/publications/working-papers/will-trade-unions-survive-in-the-platform-economy-emerging-patterns-of-platform-workers-collective-voice-and-representation-in-europe>
- Walters, D., & Nichols, T. (2007). *Worker representation and workplace health and safety*. Basingstoke, UK: Palgrave Macmillan. <https://catalogue.nla.gov.au/Record/3992769>
- Wilde, J. (2016, 15 November). Precarious “gigs” are a perfect storm for occupational health. *London Hazards Magazine*. <http://www.lhc.org.uk/precariou-gigs-are-a-perfect-storm-for-occupational-health/>
- Yamamoto, S., Unruh, D., & Bullis, M. (2011). The viability of self-employment for individuals with disabilities in the United States: A synthesis of the empirical research literature. *Journal of Vocational Rehabilitation*. 35, 117-127. https://www.researchgate.net/publication/287007220_The_viability_of_self-employment_for_individuals_with_disabilities_in_the_United_States_A_synthesis_of_the_emirical-research_literature
- Zigante, V. (2018). *Informal care in Europe: Exploring formalisation, availability and quality*. European Commission, Publications Office of the European Union, Luxembourg. <https://op.europa.eu/en/publication-detail/-/publication/96d27995-6dee-11e8-9483-01aa75ed71a1>

7 Annexes

7.1 Annex 1: Methodology

7.1.1 Review of the academic and grey literature and available data

The literature review builds on academic (peer-reviewed) and grey literature references and available data. To find relevant publications, the team consulted a number of bibliographic electronic search databases with extensive and up-to-date resources from the academic and grey literature. More specifically, the team used Web of Science, an electronic database that provides access to various databases across multiple scientific disciplines (science, social science, humanities and arts). Web of Science contains references to peer-reviewed articles published in academic journals, books, editorials, conference proceedings and similar scientific outputs. Literature from multiple scientific disciplines including law, sociology, medicine, and management, was consulted to get a good perspective on OSH and platform work. The study team also consulted the platform economy repository managed by Eurofound, which contains a significant number of grey literature references (including in the national languages). The research team further used snowballing techniques to identify relevant studies listed in the bibliographies of related papers. This list of publications was completed with materials proposed by EU-OSHA's national focal points, which were consulted in a survey. Finally, consulted experts were also asked to share any relevant sources during the interviews.

The search strategy underpinning this work accounted for the keywords in the definitions and taxonomy, outlined above, as well as for concepts that can be derived from these keywords (see Annex 1). The team used this strategy to examine the challenges (and opportunities) related to OSH in the context of platform work. This included both the risks facing platform workers and also the challenges as regarding the management of these risks.

Keywords used in the search of relevant literature:

Employment and working conditions (General):

("Precarious(ness)") OR ("Working conditions") OR ("Employment conditions") OR ("Contractual relations") OR ("Employment status") OR ("Employment relations") OR ("Platform as employer") OR ("Job security") OR ("Flexibility") OR ("Income") OR ("Earnings") OR ("Payment") OR ("Price-setting") OR ("Wage") OR ("Fee") OR ("Working time") OR ("Work intensity") OR ("Speed pressure") OR ("Tight deadlines") OR ("No breaks") OR ("Exhaustion") OR ("Repetitive work") OR ("Task autonomy") OR ("Algorithmic management") OR ("Non-conventional workplace") OR ("Work environment") OR ("Physical environment") OR ("Public space") OR ("Clients' homes") OR ("Telework") OR ("Home-based work") OR ("Career development") OR ("Career progression") OR ("Learning") OR ("Access to training") OR ("Participation") OR ("Worker voice") OR ("Worker participation") OR ("Consultation") OR ("Representation") OR ("Collective organisation") OR ("Collective bargaining") OR ("Collective rights") OR ("Collective agreements") OR ("Social protection") OR ("Social protection coverage") OR ("Social security") OR ("Income support measures") OR ("Income replacement benefits") OR ("Sickness benefits") OR ("Unemployment benefits") OR ("Decent work") OR ("Job satisfaction")

OSH risks, hazards and health outcomes:

("Occupational health and safety") OR ("Health and safety") OR ("Risk") OR ("Hazard") OR ("Physical risk") OR ("Physical health") OR ("Psychosocial risk") OR ("Psychological risk") OR ("Psychosocial issues") OR ("Psychological health") OR ("Well-being") OR ("Wellbeing") OR ("Mental health") OR ("New and emerging risks") OR ("Dangerous substances") OR ("Physical agents") OR ("Ergonomics") OR ("Musculoskeletal (disorders)") OR ("Posture") OR ("Noisy workplace") OR ("Dirty work") OR ("Visual strain") OR ("Use of materials") OR ("Use of tools") OR ("Use of equipment") OR ("Health outcomes") OR ("COVID-19") OR ("Pandemic") OR ("Stress") OR ("Burn-out") OR ("Work accidents") OR ("Work-related injuries") OR ("Work-related illness") OR ("Lack of awareness") OR ("Lack of training") OR ("Lack of equipment") OR ("Poor quality equipment")

OSH management:

("OSH management") OR ("OSH system") OR ("OSH programme") OR ("Risk assessment") OR ("Prevention and control measures") OR ("Prevention") OR ("Preventive measure") OR ("Protection")

measure”) OR (“Hierarchy of control”) OR (“Avoiding”) OR (“Elimination”) OR (“Substitution”) OR (“Collective protection measure”) OR (“Individual protection measure”) OR (“Collective technical measure”) OR (“Engineering controls”) OR (“Collective organisational measure”) OR (“Administrative controls”) OR (“Personal protective equipment”) OR (“Protective equipment”) OR (“Mitigation measure”) OR (“Information”) OR (“Risk awareness”) OR (“Training”) OR (“Worker participation”) OR (“Worker consultation”) OR (“Enforcement”) OR (“Sources of support”) OR (“COVID-19”) OR (“Pandemic”) OR (“Insurance”) OR (“Liability”)

Policies, strategies, initiatives and programmes:

(“Policy”) OR (“Strategy”) OR (“Initiative”) OR (“Programme”) OR (“Action”) OR (“Guideline”) OR (“Regulation”) OR (“Law”) OR (“Legislation”) OR (“Court case”) OR (“Campaign”) OR (“Inspection”) OR (“Collective agreement”) OR (“Research project”)

Launched by:

(“Government”) OR (“Public authority”) OR (“Agency”) OR (“EU level”) OR (“National level”) OR (“Regional level”) OR (“Local level”) OR (“Labour inspectorate”) OR (“Social affairs inspectorate”) OR (“OSH agency”) OR (“Social partners”) OR (“Trade union”) OR (“Employer organisation”) OR (“Grassroots organisation”) OR (“Platform workers organisation”) OR (“Platform”) OR (“Platform worker”) OR (“Insurance provider”) OR (“Training provider”) OR (“Prevention service”)

In combination with conceptualisations around digital platform work:

(“Digital platform work”) OR (“Digital platform economy”) OR (“Online platform work”) OR (“Online platform economy”) OR (“Platform economy”) OR (“Platform work”) OR (“Sharing economy”) OR (“Peer economy”) OR (“Gig economy”) OR (“Gig-economy”) OR (“Uber economy”) OR (“Crowd economy”) OR (“Collaborative economy”) OR (“Participative economy”) OR (“On-demand economy”) OR (“Gig work”) OR (“Gig job”) OR (“Crowdwork”) OR (“Crowd work”) OR (“Crowdsourcing”) OR (“Work-on-demand”) OR (“Work on demand”) OR (“Work on-demand”) OR (“On-demand econ*”) OR (“Just-in-time workforce”) OR (“Micro-task”) OR (“Precariat”)

7.1.2 Consultation of EU-OSHA’s national focal points

To further enrich the information on regulation, policies, practices, strategies, initiatives or programmes obtained from the literature review, a survey was sent out to EU-OSHA’s network of national focal points, with the support of the EU-OSHA team overseeing the project. The survey questionnaire was prepared in English. Focal points had the choice of completing the survey online or filling out the questionnaire in a separate document. Focal points received instructions on how to complete the survey as well as the contact information of the research team in case of any issue. Definitions of key concepts and examples were also provided to facilitate the understanding of the survey questions. Although the main goal of the national focal point consultation was to get more insight into policies, practices, programmes and actions targeting OSH and platform work in their country, the focal points were given a broad range of questions on digital platform work and its OSH challenges and opportunities, in general and considering four types of platform work - lower-skilled on-location work, lower-skilled online work, higher-skilled on-location work, and higher-skilled online work (see section 2.2 for the digital platform work taxonomy). Focal points were asked to share as many examples and concrete cases as possible.

The survey questionnaire had a modular design, structured into four sections. The first section covered *digital platform work and its OSH implications* (incl. debate on OSH and digital platform work, OSH risks and impacts on workers’ physical and mental health, safety and wellbeing, challenges in risk prevention and management and OSH opportunities). The second section concerned *regulation, policies, programmes, initiatives or strategies related to OSH and digital platform work* (both implemented or under discussion, in the last five years). Focal points were asked about the different measures launched by governments or public authorities at the national, regional or local level, by inspectorates and OSH authorities, by the social partners, by digital labour platforms, digital platform workers or their representative organisations, as well as any other measure. The third part zoomed in on the *COVID-19 pandemic* (impact on OSH in digital platform work and awareness raising about OSH matters). The final part covered relevant resources. Each part consisted of several main research questions (all open-ended questions), with sub-questions.

7.1.3 Interviews with experts and stakeholders

Semi-structured interviews were carried out with four types of stakeholders, complementary to the desk research: (i) *academics and experts* (incl. experts working at international organisations, EU Agencies); (ii) *policy- and decision-makers* (incl. government representatives, labour inspectorates, OSH authorities, enforcement agencies, social partners and other representative bodies); (iii) *digital labour platforms* and (iv) *digital platform workers*. These interviews proved important to help fill knowledge gaps, gather data and information that is not (yet) publicly available or only in the national language (not English), account for the experiences of platforms and platform workers and so on.

Interviews were conducted following a common protocol and using a detailed interview guide, tailored to each type of interviewee. At the start of each interview, the aim of the project was briefly recalled, key concepts were clarified, the way that any information shared during the interview would be used in the study was explained and the interviewee's consent was asked once again. The interview guide had a modular structure. Each module started with a more general, open question on the topic of interest, followed by more specific as well as closed questions. The protocol and interview guides were jointly elaborated on by the research team, to ensure consistency and comparability of results. Interviews were conducted by a team of experienced researchers in this line of work.

The identification of potential interviewees was based on joint work by the research team. For the four case studies highlighting specific policies, legislation, programmes, and so on, the team targeted interviewees who were directly concerned with the design, implementation, monitoring or enforcement of the measure, or (in)directly affected by it. For the case studies on the four types of platform work - such as parcel delivery, handiwork, online content review and remote programming - at least one digital labour platform and at least one digital platform worker was interviewed per case. The semi-structured interviews with platforms focused on identifying the OSH risks and challenges they see in relation to the platform work activities they intermediate, and their role and responsibilities as regards the prevention and management of OSH risks and challenges. Platforms were asked about their practices, experiences and the drivers and barriers they are faced with as regards OSH management. The semi-structured interviews with platform workers aimed at getting a thorough understanding of their experiences with occupational health and wellbeing, the challenges they have faced or are facing, underlying drivers or circumstances contributing to these challenges, the impact of the challenges on their personal and professional lives, as well as the steps they have taken to overcome these challenges and impacts. These interviews are envisaged as testimonials. In addition to fact-finding, these interviews gather insights into awareness, perceptions and attitudes of platform workers towards OSH challenges and OSH risk prevention and management.

In addition, interviews were conducted with leading academics and experts in the field, representatives from international organisations such as ILO and ELA, to get a bird's-eye view of OSH and digital platform work. In terms of country coverage, the research team ensured that interviewees from all major regions of the EU were consulted.

In total, 61 interviews were conducted for this study (specifically between March and November 2021), of which 8 with academics and experts, 29 with policy- and decision-makers at various levels, 13 with digital labour platforms, and 11 with digital platform workers.

7.2 Annex 2 Overview of the challenges of OSH management in platform work

Area of OSH management	Relevant articles of the OSH Framework Directive	Challenges of digital platform work
Conducting a risk assessment	Article 6(3) and Article 9(1)(a)	<p>Digital platforms defer responsibility of risk assessment to digital platform workers. Collective risk assessments are replaced by personalised, individual risk assessments.</p> <p>Virtualisation of work and a lack of a common protective workplace complicates risk assessments.</p> <p>Digital platform workers lack the necessary knowledge and training on how to properly conduct risk assessments.</p>
Implementing preventive and corrective measures	Article 6(1) and Article 6(2)	<p>Digital platforms defer responsibility of the implementation of preventive and protective measures to digital platform workers.</p> <p>The prevention dimension is often poorly taken into account, with compensation and efficiency of the tasks performed being prioritised.</p> <p>Collective measures are marginalised in digital platform work, with digital platforms intermediating on-location services often limiting themselves to the provision of PPE to digital platform workers.</p>
Providing information to workers	Article 10	<p>Although digital platforms are in constant contact with digital platform workers through algorithmic management, OSH issues are rarely communicated to digital platform workers.</p>
Consultation of workers	Article 6(3)(c) and Article 11	<p>Digital platform workers are not consulted on OSH issues, mainly because of the lack of representation and collective organisation.</p>
Training of workers	Article 12	<p>Digital platforms provide little or no training on safety and health.</p>
Adequate controls and supervision	Article 6(3)(c) and Article 11	<p>Blurred responsibilities among digital platforms, digital platform workers and clients complicate enforcement of OSH obligations.</p> <p>Triangular relationship, virtualisation of work, dispersed and diverse workforce and high turnover of labour complicate enforcement by labour inspectorates.</p>

The European Agency for Safety and Health at Work (EU-OSHA) contributes to making Europe a safer, healthier and more productive place to work. The Agency researches, develops, and distributes reliable, balanced, and impartial safety and health information and organises pan-European awareness raising campaigns. Set up by the European Union in 1994 and based in Bilbao, Spain, the Agency brings together representatives from the European Commission, Member State governments, employers' and workers' organisations, as well as leading experts in each of the EU Member States and beyond.

European Agency for Safety and Health at Work

Santiago de Compostela 12, 5th floor
48003 - Bilbao, Spain
Tel. +34 944358400
Fax +34 944358401
E-mail: information@osha.europa.eu
<http://osha.europa.eu>