

Digital platform work: occupational safety and health policy and practice for risk prevention and management

Policy context ⁽¹⁾

With the rise of the digital economy, digital labour platforms are becoming key players in European economies and labour markets. By connecting clients with platform workers, digital labour platforms create new opportunities to earn income through flexible work and to lower the barriers to labour market entry (Eurofound, 2018). Digital platform work comes with the promise of high levels of flexibility and autonomy, with platform workers being able to choose when, where and how long to work, and what tasks to accept. However, concerns have been raised by both the scientific and policy communities about the working and employment conditions of digital platform work, including conditions in the area of occupational safety and health (OSH), as further discussed below (EU-OSHA, 2015; 2017). The COVID-19 crisis has not only brought OSH risks in platform work to the fore, but also aggravated them, especially for some groups of platform workers, namely those who are most at risk of being exposed to COVID-19 and/or are faced with income loss. At the same time, the core features of platform work complicate the implementation of OSH risk prevention and management systems (Stephany et al., 2020; ILO, 2021).

In response to the rapid development of platform work, policy-makers at the EU level and in Member States have taken initiatives and actions to address some of these challenges, in line with the principles stipulated in the European Pillar of Social Rights ⁽²⁾. The European Commission has launched an initiative that **aims to improve working conditions in platform work**. The first-stage consultation among European social partners on this initiative was launched in February 2021, and the second-stage consultation was launched in June 2021 ⁽³⁾. The initiative covers issues such as options to facilitate employment status classification and access to labour and social protection rights; ways to improve information provision to platform workers, consultation of platform workers by the platform and opportunities for redress with the platform in case of issues or mistakes (e.g. options to complain and have changed a review that is deemed unfair by the platform worker) notably in relation to algorithmic management ⁽⁴⁾; how to clarify the applicable rules in cases of cross-border platform work; and options to strengthen the enforcement of rules and legislation, collective representation and social dialogue. Addressing these issues will also have an impact on OSH in platform work ⁽⁵⁾, even if indirectly.

Legislators and courts in Member States have also been confronted with the challenges of platform work, but have often struggled to fit platform work into the regulatory frameworks in place. This has resulted in a myriad of approaches. For example, some Member States have tackled the employment status classification issue (e.g. the Spanish Riders' Law ⁽⁶⁾) provides a presumption of dependent

⁽¹⁾ This policy brief summarises the key findings of and takeaways from the literature review *Digital platform work and occupational safety and health: a review*, prepared as part of the study 'Overview of OSH policies, research and practices in the context of digital platform work, through review of existing data and information, fieldwork research and policy analysis in the European Union'. This study on occupational safety and health (OSH) and digital platform work aims to contribute to the European Agency for Safety and Health at Work's (EU-OSHA's) research on digitalisation and OSH, and to the accompanying EU-wide Healthy Workplaces Campaign on Digitalisation and OSH to be launched by EU-OSHA in 2023. The literature review considers both academic and grey literature.

⁽²⁾ Having a healthy, safe and well-adapted work environment is one of the key principles of the European Pillar of Social Rights. Under this principle, workers have (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 that enables them to prolong their participation in the labour market, and (iii) the right to have their personal data protected in the employment context. See Interinstitutional Proclamation 2017/C 428/09 on the European Pillar of Social Rights of 13 December 2017 (OJ C 428, 13.12.2017, p. 10–15). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32017C1213%2801%29>

⁽³⁾ See https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2944

⁽⁴⁾ Algorithmic management is defined as oversight, governance and control practices conducted by software algorithms over many workers (Möhlmann and Zalmanson, 2017, p. 4).

⁽⁵⁾ On this note, it is important to highlight the EU Strategic Framework on Health and Safety at Work 2021-2027 adopted on 28 June 2021 (European Commission, 2021). The OSH framework sets out key priorities and actions for improving safety and health at work in a changing world of work, marked by the green and digital 'twin' transitions.

⁽⁶⁾ Royal Decree-Law 9/2021, of 11 May 2021.

employment to digital platform workers active in the delivery sector), while other Member States have circumvented the issue (e.g. the French *El Khomri Law* ⁽⁷⁾ covers self-employed platform workers in cases where the platform determines the conditions and prices of service provision, so that only those platform workers attain entitlements such as access to training and insurance for accidents at work). Authorities responsible for the monitoring and enforcement of labour, social protection and OSH regulations, such as labour inspectorates, have carried out inspections in several EU Member States (e.g. Belgium, Croatia, Spain, Italy, Luxembourg, Poland) with the aim to assess the working and employment conditions in platform work, including occupational safety and health. However, their work is complicated by factors such as uncertainty over whether platform work falls within their remit, difficulties in identifying platforms and platform workers, and a lack of rules on inspections inside natural persons' homes.

What is digital platform work?

Defining digital platform work

Digital platform work refers to all paid labour that is provided through, on or mediated by digital labour platforms ⁽⁸⁾, which connect platform workers with clients, with the aim of carrying out specific tasks or solving specific issues. These tasks can involve a range of activities performed on-location, such as handiwork or parcel delivery, or entirely online, such as remote programming or online content review. Digital platform work relies on the use of **algorithms** ⁽⁹⁾ to allocate, monitor and evaluate work tasks – and/or monitor and evaluate platform workers' behaviour and performance — this is also known as algorithmic management ⁽¹⁰⁾. Algorithmic management has several characteristics that may severely affect the physical and mental health and well-being of the workers who are subjected to it. First, algorithmic management involves the continuous monitoring and evaluation of workers' behaviour and performance using digital technologies, which in some cases takes the form of **digital surveillance**. In addition, automated or semi-automated decision-making, without human intervention, results in workers having to interact with a system rather than a human (e.g. a manager). Another issue associated with algorithmic management is related to power and information asymmetries resulting from an overall lack of transparency in relation to the functioning of the algorithm. In that respect, it is worth mentioning the recently adopted *Riders' Law* in Spain which stipulates that platforms must inform the Works Council (i.e. the main channel of workplace representation for employees in Spain⁽¹¹⁾) about the inner functioning of the algorithms used ⁽¹²⁾. Finally, it is worth highlighting that digital labour platforms implement, through their algorithms, mechanisms to influence platform workers' behaviour, such as rating systems ⁽¹³⁾, nudging ⁽¹⁴⁾, gamification ⁽¹⁵⁾ and surge pricing ⁽¹⁶⁾. Such mechanisms are used to encourage workers to carry out work in a certain way or at certain times (e.g. when and also for how

⁽⁷⁾ Law No 2016-1088 of 8 August 2016.

⁽⁸⁾ A digital labour platform is defined here as 'a private internet-based company which intermediates with a greater or lesser extent of supervision on-demand services, requested by individual or corporate customers and provided directly or indirectly by individuals, regardless of whether such services are performed on-location or online' (see the glossary enclosed with the second-stage consultation of the European social partners on the Commission's upcoming initiative to improve the working conditions in platform work). See https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2944.

⁽⁹⁾ Algorithms or — more precisely — software algorithms, can be defined as 'computer-programmed procedures for transforming input data into a desired output' (Kellogg et al., 2020).

⁽¹⁰⁾ Algorithmic management is defined as oversight, governance and control practices conducted by software algorithms over many workers (Möhlmann and Zalmanson, 2017, p. 4).

⁽¹¹⁾ See <https://www.worker-participation.eu/National-Industrial-Relations/Countries/Spain/Workplace-Representation>.

⁽¹²⁾ Article 64.4 d) Workers' Statute Law.

⁽¹³⁾ With rating systems, clients can evaluate workers' performance by giving a score (e.g. one to five stars), for example based on the speed or accuracy of the work performed. By implementing rating systems, platforms delegate managerial tasks to clients (Bérestégui, 2021).

⁽¹⁴⁾ In their seminal book, Thaler and Sunstein (2008) define a nudge as 'any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives'. Nudging should thus be understood as using different techniques to promote 'more preferred' behaviour. The advantage of nudging is that it is cheap and less invasive than other techniques (e.g. forbidding behaviour). A common example is a technique used to encourage healthy eating, involving placing fruit somewhere that is readily visible, rather than forbidding unhealthy snacks. For example, platforms can nudge platform workers to stay online by offering a financial incentive if they refrain from logging off.

⁽¹⁵⁾ 'Gamification' is understood as the application of game systems — competition, rewards, quantifying player and/or user behaviour — into non-game domains, such as work, productivity and fitness (Woodcock and Johnson, 2017).

⁽¹⁶⁾ Platforms may offer higher remuneration for performing a certain task to encourage platform workers to take up that task. For example, Uber may raise the price per trip during rush hour or in areas where demand is high but few drivers are available.

long). This affects platform workers' work-life balance, overall job and life satisfaction, and mental and physical health.

Non-standard working arrangements and **self-employment** are common practices in digital platform work. Digital labour platforms typically stipulate in their terms and conditions that platform workers using their facilities are self-employed or indicate that no standard employment (employer-employee) relationship exists between the platform and the platform workers. The classification of platform workers as self-employed can be problematic, especially in cases where platforms exercise significant control over their platform workers and bogus self-employment is suspected, as evidenced by several highly publicised court cases across Europe ⁽¹⁷⁾. In this way, digital labour platforms shift **risks, liabilities and responsibilities** — including safety and health risks and their management — **onto the platform workers**. In addition, key legislation on employment protection and OSH at the EU level and in most Member States applies to only employees. Simultaneously, platform work 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, that have traditionally challenged and diffused OSH prevention and management responsibilities (Howard, 2017; Tran and Sokas, 2017; European Parliament, 2020).

Distinguishing different types of digital platform work

With the growing heterogeneity of digital platform work, a range of **taxonomies** has been proposed in the literature to capture the core features that help disentangle different platform work types. The most basic taxonomies differentiate on-location from online digital platform work (see OECD, 2018; ILO, 2021), whereas more advanced taxonomies also consider aspects such as the complexity and scale of the tasks performed, the task content, the matching process, the actor allocating tasks and the level of control exercised by the platform over its workers (Eurofound, 2018; Pesole et al., 2018; Brancati et al., 2020; European Commission, 2020; Bérastégui, 2021).

To capture the dimensions that affect the OSH risks that platform workers encounter and the prevention and management of those risks, a taxonomy with three dimensions is proposed that can be combined to give four types of digital platform work (Table 1).

Table 1: Digital platform work taxonomy

Dimension	Type of digital platform work			
	Type 1	Type 2	Type 3	Type 4
Format of labour provision	On-location	On-location	Online	Online
Skill level required to do the tasks	Low	High	Low	High
Level of control exercised by the digital labour platform	High	Moderate	High	Low

Source: Authors' own elaboration

The first dimension is the **format of labour provision**: online or on-location. In both cases, the matching of platform workers to clients is done online, but the work itself either is performed on-location or can be performed virtually using an electronic device at any location. From an OSH perspective, the physical environment in which the work is performed strongly determines both OSH risks and their management (EU-OSHA, 2015). For example, performing a task relying on manual labour in a client's home entails different OSH risks from those associated with performing a desk-based task in a worker's own home.

⁽¹⁷⁾ For example, in France, Cour de cassation, case 17-20.079 of 28 November 2018; in Spain, Tribunal Supremo, case 805/2020 of 25 September 2020; in Italy, Corte suprema di cassazione, case 1663/2020 of 24 January 2020; in the United Kingdom, Supreme Court, case 2019/0029 of 19 February 2021; in the Netherlands, Gerechtshof Amsterdam, case 200.261.051/01 of 16 February 2021.

The second dimension is the **skill level required to execute the task**: low or high. This captures the task content, scale and complexity. These all affect the OSH risks that platform workers face. In addition, platform workers are often faced with a skill mismatch (Cedefop, 2020; Bérastégui, 2021): many of them are overqualified for the tasks they perform (especially platform workers in low-skilled on-location work, e.g. food delivery, or online work, e.g. image tagging), which may lead to frustration, a lack of motivation and cognitive underload. On the other hand, platform workers may be underqualified for the tasks assigned to them, which can cause stress. This may happen when platform workers feel pressured into taking on any task that is allocated to them, out of fear of not being selected in the future if they decline work. Moreover, workers may not have the necessary OSH training and knowledge to perform their work in a safe and healthy manner. This also affects the prevention and management of OSH risks; for example, platform workers may not be fully aware of the principles of prevention, and may lack the skills needed to properly assess the risks involved in performing a specific task or working in a certain environment, to implement adequate control measures, and to choose adequate equipment and use it safely.

The third dimension is the **level of control exercised by the platform**, which can range from a minimal to a high degree of control. This dimension signals the hierarchical power and managerial prerogatives that a digital platform deploys in its relationship with platform workers, in particular regarding the allocation, organisation and evaluation of work. The level of control:

- gives an indication of the **degree of subordination** that platform workers are subjected to, subordination being the key legal criterion used in the determination of employment status and consequently the applicable OSH regulations;
- indicates the reliance of digital labour platforms on **algorithmic management**; research finds that higher levels of algorithmic management are associated with higher levels of OSH risks, in particular psychosocial risks to the well-being and mental health of digital platform workers (Bérastégui, 2021).

What are the OSH challenges of digital platform work and how can these be managed?

Despite the scarce evidence on OSH risks and on the prevention and management of those risks in the context of platform work, there is consensus in the literature on some aspects:

- Most of the OSH risks and challenges that platform workers encounter and that **directly relate to the tasks carried out as platform work** are similar to the OSH risks and challenges that other workers encounter when performing the same tasks outside the platform economy.
- It has to be noted that platform work is concentrated in **sectors and occupations that are generally considered more dangerous**. Compared with traditional work, platform work often involves **extra tasks** and/or **a different combination of tasks**. As a result, platform workers may be more exposed to risks or to more severe risks than workers doing comparable tasks outside the platform economy.
- In addition, the OSH risks and challenges that platform workers face are **aggravated by the specific conditions under which platform work is performed, which results in additional OSH risks for platform workers**. These include issues pertaining to the platform workers' employment status and contractual arrangements; the use of algorithmic management and digital surveillance; professional isolation, a poor work-life balance and a lack of social support; and work transience and boundaryless careers.
- Moreover, these **conditions complicate the prevention and management of OSH risks and challenges in platform work**, particularly the difficulties in determining the employment status of platform workers and the consequences of this regarding the applicability of OSH regulations.

Taken together, the platform work comes with significant implications for the physical and psychological safety, health and well-being of those working through digital labour platforms, which may be particularly difficult to address (EU-OSHA, 2015; 2017; European Commission, 2020; Bérastégui, 2021). Platform

workers are particularly at risk because of the variety of different risks they are exposed to and the fact that, often, it is the responsibility of the workers themselves to address these risks..

Similar work activities come with similar OSH challenges and risks

When tasks performed as platform work are highly similar to those carried out outside the platform economy (e.g. parcel delivery, cleaning), the **OSH risks are also similar** (EU-OSHA, 2015; 2017; Tran and Sokas, 2017; Garben, 2019; Samant, 2019). Depending on the type of platform work, workers are exposed to different types of risks, to different degrees (e.g. ergonomic risks related to desk-based versus physical work). Platform work, however, tends to be concentrated in **sectors and occupations that are generally considered more dangerous**, such as the transport sector. While some of the activities performed require specific skills or certification, not all platforms require their platform workers to provide evidence of their qualifications when creating an account, as this may not be required by the legal framework in the country of operation. Finally, platform workers may also be required to perform **additional tasks and/or a different combination of tasks** from workers in similar jobs in the traditional labour market, thus requiring other skills. Platform work often involves **extra work**, that is, work that is not required in comparable jobs outside the platform economy (e.g. setting up and maintaining an account, searching for tasks and communicating with clients), which may lead to other OSH risks and health effects. For example, a platform worker who is trained as an electrician and has experience performing such work for an employer may be perfectly qualified to carry out electrical work as a platform worker, but may lack experience in finding clients, managing client relationships, keeping track of earnings and administrative documents, and so on. This may lead to job insecurity and income insecurity, cause stress, etc.

Factors resulting in additional OSH challenges and risks in platform work and/or complicating the prevention and management of those risks

Employment status and contractual arrangements

In the literature on platform work, **the determination of the employment status of platform workers has been identified as the main challenge to be addressed**. In platform work, determining employment status can be complicated by the triangularity of the work relationships (i.e. platform work involves at least three parties — a platform, a platform worker and a client — between which different types of contractual relationships may exist). Most digital labour platforms qualify their relationships with platform workers as services contracts, and the platform workers themselves as independent contractors/self-employed (Eurofound, 2018; Pesole et al., 2018; Prassl, 2018; European Commission, 2020). This, however, may not be in accordance with the factual circumstances in which these platform workers operate. In particular, platform workers engaged in low-skilled on-location work run the risk of being wrongly classified as self-employed (European Commission, 2020), as evidenced by a growing number of court cases across Europe (De Stefano, 2021).

From the OSH perspective, the core issue is **the applicability of the existing regulatory frameworks at the EU level and in individual Member States** (EU-OSHA, 2015; 2017; Tran and Sokas, 2017). More specifically, the self-employed are not covered by EU OSH directives or by national OSH legislation in most Member States and are generally responsible for their own safety and health. The self-employed are not typically targeted by prevention services either. Moreover, the self-employed are excluded from worker participation and are not covered by labour inspections, which are key components of an effective OSH management system. To sum up, in platform work, **the responsibility for OSH risk prevention and management is pushed onto the platform workers**.

Algorithmic management and digital surveillance

Algorithmic management refers to the **use of algorithms to allocate, monitor and evaluate work tasks and/or to monitor and evaluate platform workers' performance** (EU-OSHA, 2017; Eurofound, 2018; Bérastégui, 2021). Algorithmic management has five core characteristics (Möhlmann and Zalmanson, 2017), all of which affect the safety and health of platform workers:

1. the continuous monitoring or tracking of platform workers' behaviour, e.g. through the device that connects the platform workers with the platform (such as their phone or computer), by

- taking screenshots or tracking the worker using GPS;
2. the evaluation of platform workers' performance, e.g. through client ratings, statistics on the number of completed or rejected tasks, data on the speed of task execution;
 3. (semi-)automated decision-making without human intervention;
 4. the platform workers' interaction with a system, which does not allow any negotiation or provide any opportunity to ask for feedback;
 5. a lack of transparency concerning the functioning of the algorithm ('black box of intermediation').

The use of algorithmic management tips the **power balance** that exists between the platform, the client and the platform workers in favour of the platform (or, in some cases, in favour of the client) (Bérestégui, 2021). Platforms can rank platform workers and issue rewards or penalties based on performance. Having to maintain a good rating at all times and in real time, and deal with the consequences of having a poor rating can be very stressful for platform workers. The use of algorithmic management undermines platform workers' autonomy, job control and flexibility, which causes exhaustion, anxiety and stress, and has a negative impact on platform workers' health and well-being. Platforms deliberately withhold information, e.g. the address where a parcel is to be delivered and the number of platform workers competing for the same task, which may lead to platform workers feeling pressured and can result in physical and mental safety and health risks. Algorithmic management also gives rise to questions about the extent to which platform workers work under the direction of or in subordination to the platform, which is the main legal criterion used to determine one's employment status in many EU Member States. Finally, algorithmic management is used to coordinate and maximise the workload and can thus lead to occupational overload, with workers being assigned too many tasks (quantitative overload) or tasks that are not in line with their skills (qualitative overload), which in turn causes stress and anxiety (Cedefop, 2020; Bérestégui, 2021) (see also the above discussion on the importance of matching the skill level required for given tasks). On the other hand, algorithmic management may also bring opportunities for managing OSH risks (Moore, 2019; Cockburn, 2021). Theoretically, algorithms could be adapted by integrating OSH prevention measures into their design, for instance by aligning working-time obligations. Moreover, from the perspective of enforcement, 'smart' monitoring tools might increase the efficiency of labour inspections (Samant, 2019; Cockburn, 2021).

Professional isolation, work-life balance and social support

A third set of factors that aggravates the OSH risks in platform work and complicates OSH risk prevention and management relates to the **individualisation of work**, **professional isolation** (both physical and social isolation), **work-life conflicts** and an **overall lack of social support**. The platform workforce is anonymous, globally dispersed and characterised by a high labour turnover. In addition, platform work is mainly executed in isolation and in unconventional workplaces (e.g. in the homes of platform workers or clients), which may not be adapted to platform workers' needs (EU-OSHA, 2015; 2017; Tran and Sokas, 2017; Bérestégui, 2021). Having to work in isolation without support from colleagues and management is stressful and has a negative impact on job satisfaction and job tenure (Bérestégui, 2021). The (positive) effect of working in a conventional workplace with support from colleagues or management is lost (EU-OSHA, 2017; Tran and Sokas, 2017; Samant, 2019). In this context, work-life conflicts may be aggravated, as the boundaries between work and home environments become blurred, as well as the boundaries between working time and family life (Bérestégui, 2021). Among the commonly reported issues in this regard are that platform work involves unpaid time, unpredictable and irregular work schedules, etc. In addition, many platform workers lack a professional identity and do not find their work meaningful. All of these issues are associated with sleeping problems, exhaustion, difficulties in recuperating from work, stress, depression, burnout and loneliness, and an overall dissatisfaction with one's job and personal life (Bérestégui, 2021). In addition, these factors complicate OSH risk prevention and management. For instance, the notion that platform workers have few or no opportunities to directly engage with other platform workers limits worker organisation (and collective bargaining), and in that sense also stands in the way of realising effective worker participation in the development of an OSH management system (Graham et al., 2017; European Commission, 2020). The difficulties in identifying and accessing the platform workforce also complicate the implementation of preventive measures, e.g. through information campaigns, training or access to OSH services provided by OSH professionals.

Work transience and boundaryless careers

Finally, platform work is characterised by **boundaryless careers** and **work transience**, which can mean that platform workers are faced with **(chronic) job and income insecurity**. More specifically, platform work consists of a sequence of temporary, short-term assignments that do not guarantee any long-term relationship with a single employer. Most platform workers have little or no control over how many tasks they execute, as tasks are most commonly assigned either by the platform or by the client (Eurofound, 2018), thereby offsetting to some extent the platform workers' perceived autonomy in performing platform work. Similarly, platform workers typically have limited or no control over how much they earn per task. The pay per task is generally determined by the platform or the client, and, in those cases where the platform worker can set the pay, fierce competition between workers may lead them to set a very low rate. As a result, the income earned through platform work tends to be unpredictable and volatile. Nevertheless, research shows that an increasing group of platform workers depends on the income earned through platform work to make a living, even when platform work is not the only option for a source of income for these workers (Pesole et al., 2018; Brancati et al., 2020). The competition between platform workers also means that platform workers need to maintain a good rating, which involves dealing with significant emotional demands (Bérastégui, 2021). Platform work also provides little or no opportunities for skills development through training and career progression (Bérastégui, 2021). This is stressful and can lead to poorer mental and physical health (EU-OSHA, 2015; Bérastégui, 2021).

Key takeaways for policy- and decision-makers

Takeaway 1: because of the nature of platform work and the conditions under which it is performed, the OSH risks related to work tasks are greater than the OSH risks encountered by others doing similar work tasks

Most of the safety and health risks related to the tasks that are carried out as platform work are similar to those identified in other forms of work where such tasks are performed. These risks, however, are exacerbated for the following reasons, which are specific and directly related to the nature of platform work and the conditions under which platform work is performed:

- **Unclear employment status and non-standard working arrangements:** these are common in platform work and complicate the applicability of existing OSH regulatory frameworks at the EU level and in Member States.
- **The use of algorithmic management and digital surveillance:** algorithmic management and digital surveillance are not transparent and leave no room for workers to raise concerns or complaints to platforms when they perceive to be treated unfairly. The use of algorithmic management undermines platform workers' autonomy, job control and flexibility, causing issues such as exhaustion, anxiety and stress, and has a generally negative impact on platform workers' health and well-being. Platforms monetise and exploit the data that are provided by and generated by their users, and processed by the algorithm. This makes data protection a core issue in platform work, as platform workers may not know what data are collected and how these are being used, which can cause anxiety and stress.
- **Professional isolation, work-life conflicts and a lack of social support:** these are associated with sleeping problems, exhaustion, difficulties in recuperating from work, stress, depression, burnout, loneliness, and an overall dissatisfaction with one's job and personal life.
- **Boundaryless careers and work transience:** these lead to (chronic) job insecurity and income insecurity, and the poorer mental and physical health of platform workers.

All these features of platform work are areas in need of improvement, deserving the attention of policy- and decision-makers across Europe, especially since platform work is concentrated in sectors and occupations that traditionally tend to be more dangerous and often involves additional work, that is, work that is not required in comparable jobs in the traditional economy and therefore may require additional effort and skills.

Policy- and decision-makers should target their efforts at developing measures that (i) facilitate the determination of the employment status of platform workers; (ii) open up the algorithmic 'black box' to shed light on the functioning of platforms' algorithms and the repercussions of algorithmic management for platform workers; (iii) create opportunities for dialogue among platform workers and among platform workers, platforms and other stakeholders; (iv) address issues related to working time and non-transparent and unpredictable working conditions; and (v) ensure the effective enforcement of existing OSH regulatory frameworks, as applicable.

Measures that help to reduce or eliminate information asymmetries and power imbalances between digital labour platforms and digital platform workers will be critical in this regard.

Takeaway 2: because of the nature of platform work and the conditions under which it is performed, the prevention and management of (aggravated) OSH risks become more complicated

The nature and conditions of platform work complicate OSH risk prevention and management as follows:

- **The unclear employment status** and the (almost by default) **classification of digital platform workers as self-employed** mean that in practice digital platforms externalise obligations that were historically assumed by employers based on traditional employer-employee relationships. This is mainly because platforms contend that they provide only online intermediation and not the underlying services (e.g. transportation), and this leads platform workers to being classified as self-employed. This, however, implies that the OSH regulatory framework is not (fully) applicable to platform workers. It also means that OSH authorities may be unsure if platform work falls within their remit. This complicates risk prevention and management (including the monitoring and enforcement of OSH regulations).
- **Essential features of digital platform work** complicate the implementation of fundamental components of OSH management systems in various areas, with respect to risk assessment, preventive and protective measures, training, worker participation and labour inspections. The examples in this regard are plenty: difficulties in identifying and reaching platform workers (due to the anonymity and geographical spread of the workforce and its high turnover), the lack of common and fixed workplaces, the temporary nature of the contractual relations, etc.

Policy- and decision-makers should consider key issues such as the determination of employment status, the lack of transparency in relation to the functioning of algorithms, and the lack of dialogue and consultation from the perspective of their implications for OSH risk prevention and management. Here, measures should target not only digital labour platforms and platform workers, but also government agencies, labour and OSH authorities, training providers, social partners and other stakeholders.

Takeaway 3: as research, policy and practice in relation to platform work have somewhat overlooked OSH, in particular risk prevention and management, there are critical knowledge gaps and a lack of awareness of OSH-related issues

The literature review on OSH and platform work (EU-OSHA, 2021) also reveals potential areas for further research and data collection efforts that could provide better insights into the OSH risks involved in platform work and challenges for the prevention and management of those risks. In this way, such research would contribute to informing a wider evidence base for policy-making. In particular, further research and targeted data collection efforts are needed on OSH prevention and management in platform work (e.g. 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. In general, a better understanding of OSH in the context of platform work could help to uncover good practices that could be transferred from one context to another, and lead to lessons being learned by different stakeholders. For these reasons, other tasks to be carried out as part of this EU-OSHA research project on OSH and platform work already aim to address these data and knowledge gaps, e.g. by examining what approaches have been used in policy and practice to prevent OSH risks, monitor and enforce OSH rules and regulations (such as a policy case on the Spanish 'riders law' showcasing how to approach the lack of transparency in algorithmic management; a policy case showcasing actions by labour inspectorates in selected EU Member States).

Finally, and importantly, it is clear that there is a lack of awareness about the OSH risks associated with platform work and how these OSH risks could be prevented or managed. This not only affects the work of policy- and decision-makers as described above, but also has an impact on digital labour platforms and platform workers. In this regard, measures should be implemented to better inform platforms and platform workers about OSH risks and how these could be prevented or managed, the actors available to support them, the responsibilities of the parties involved, etc. While some of these points are connected with the debate on the employment status of platform workers, this should not be a barrier to increasing transparency and support overall.

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