European Agency for Safety and Health at Work

How is digital platform work described in the online media? Evidence from an exploratory exercise

Report

European Agency for Safety and Health at Work

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1 Introduction

The digitalisation process has changed the organisation of labour markets and business sectors worldwide, with those directly exposed to it experiencing new opportunities but also for some challenges in terms of working conditions. One of the main drivers of this transformation is digital labour platforms, which match the demand for and supply of labour by connecting platform workers with clients[1]. This transformation has brought on one side, high levels of flexibility and autonomy, with platform workers being able to choose when, where and how long to work. Conversely, it challenges significantly the working and employment conditions of these workers, including occupational safety and health (OSH). In this regard, the European Commission proposed a directive aiming to improve the conditions in digital platform work in December 2021, which also contained important provisions on OSH risks. The directive was after negotiations approved by the European Parliament and Council in 2024.

Over the past decade, there has been a growing body of research to understand the potential issues related to the digital platform economy[2], including the implications of precarious work, workers' resistance[3] and collective initiatives to achieve better working conditions[4]. Despite this growing body of research on platform work, OSH has only recently become more prominent in the literature and policy[5], and no attention has been paid so far to what the analysis of social data can add to the understanding of this phenomenon.

This study, which is exploratory in nature, aims to contribute to closing this knowledge gap by providing fresh insights into how digital platform work is addressed in public discussions on the web and social media, and the relative role that OSH plays in this realm. It analyses information extracted by a tool normally used in digital marketing complemented by web and social intelligence activities. Through web, social media listening and intelligence activity, online content items on the topic of digital platform work are categorised and analysed using a theoretical framework including contextual factors, OSH risk factors and health outcomes, developed from previous work by the European Agency for Safety and Health at Work (EU-OSHA). The aim is to identify the issues in the discourse developed by relevant stakeholders, which can be taken into account by the OSH community at large to address such issues. As Foucault suggests[6], discourse is crucial in understanding the evolution of social phenomena, and the use of (written or spoken) communication connects power and knowledge and supports the construction of the truth. In implementing this analysis, the study also takes advantage of the 'momentum' created by the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC), 'Safe and healthy work in the digital age' and monitored the activity of websites and social accounts related to the campaign and of the content posted on them.

WebLive, a platform for implementing web and social media listening approaches, monitored websites and social network accounts (in English and Italian) for six months, collecting publicly available content potentially relevant to the study. The content collected has been classified (tagged) into thematic areas of the theoretical framework developed. In this way the study has characterised the online discourse by

[1] See for instance: EU-OSHA (2022). Digital platform work and occupational safety and health: overview of regulation, policies, practices and research. Available at: https://osha.europa.eu/en/publications/digital-platform-work-and-occupational-safety-and-health-overview-regulation-policies-practices-and-research; Eurofound. (2018). *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; 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.

[2] See for instance: Remeikienė, R., Gasparėnienė, L. & Lazutka, R. (2022). Working conditions of platform workers in new EU member states: Motives, working environment and legal regulations. Economics and Sociology, 15(4), 186-203. doi:10.14254/2071-789X.2022/15-4/9.

[3] Tassinari A., Maccarrone V. (2020), Riders on the storm: workplace solidarity among gig economy couriers in Italy and the UK, Work, Employment and Society, 34, n.1.

[4] EU-OSHA (2023), Preventing and managing health and safety risks in digital platform work: examples of initiatives, practices and tools. Available at: https://osha.europa.eu/en/publications/preventing-and-managing-health-and-safety-risks-digital-platform-work-examples-initiatives-practices-and-tools.

[5] EU-OSHA (2022). Digital platform work and occupational safety and health: overview of regulation, policies, practices and research. Available at: https://osha.europa.eu/en/publications/digital-platform-work-and-occupational-safety-and-health-overview-regulation-policies-practices-and-research.

[6] Foucault, M. (1971). Orders of discourse. Social science information, 10(2), 7-30. https://doi.org/10.1177/053901847101000201.

individual themes as well as the relationships between the themes, particularly concerning where the contents are primarily posted and who is most active in posting such contents.

The paper is structured as follows. Section 2 presents the methodology and theoretical framework adopted in the analysis, and a brief description of the platform (WebLive) adopted. Section 3 presents the main results, describing the online debate on digital platform work in aggregated terms and focusing on thematic areas and the relationships between them. Section 4 focuses on the EU-OSHA 2023–2025 Healthy Workplaces Campaign. The final section presents some concluding considerations as well as policy pointers and a methodology assessment.

2 Methodology

2.1 Data collection criteria

The research aims to understand how digital platform work and the related OSH implications are perceived and discussed online by a range of stakeholders. Pieces of content from both the web and social media were considered in the study, using web and social media listening and intelligence activity. This activity allowed continuous gathering and analysis of a large amount of global data. Available data are represented by public content posted daily on websites or social networks by media or a plurality of users. The applied methodology allows for the automatic collection and analysis of pieces of content without infringement of the privacy rules as defined by any web-based platform. To perform this activity, criteria were specified concerning four areas: time and languages, type of sources of information, identification of content (keywords); and categorisation of the contents.

2.1.1 Time and languages of data collection

The data-gathering phase opened on 1 March 2024, and the WebLive platform continuously collected data for the following six months, ending on 31 August 2024. After an initial tool trial and fine-tuning phase, the definitive set of keywords was implemented around mid-April 2024, and the tool began collecting content pertinent to the study. The WebLive platform collects data according to the language in which the content is available, and not necessarily related to geographical areas (e.g. originated in a specific country). For this exploratory exercise the languages chosen for data collection are only two (English and Italian), in line with available project budget, that did not allow for a full EU languages coverage. English, in spite of being a co-official language only in Ireland and Malta among the EU Member States since the United Kingdom left the EU, was chosen for a number of reasons. First, it is EU-OSHA, EU institutions and international organisations main working language, with most content produced and published by them in such language. Second, English is also the most commonly used language in academic and research environments, with most publications in such language. Finally, English is the most international language extensively know and spoken by a majority of people (especially younger people) as their second language. Italian, the other language chosen for this exercise, was selected as an example of official EU language spoken only in a specific country, which allowed to collect mostly geographic-specific data and reduce the noise of content produced in that language in other geographic contexts. As explained below, the identification strategies through keywords have been replicated in English and Italian. The collection resulted in a total of 51,831 pieces of content. After the data cleaning procedure, 47,954 (92.5% of the total) were deemed pertinent and valid, while 3,877 (7.5%) were deleted. Content selection was processed both automatically and manually, and each piece of information was evaluated according to its relative pertinence with the object of this study: digital platform work.

2.1.2 Types of sources of information

The research covered the following sources of information:

- social networks (i.e. Facebook, X/Twitter, Instagram, YouTube, Pinterest and LinkedIn),
- news websites,
- institutional websites,

- blogs,
- forums, and
- other websites.

In line with studies applying the same methodologies, among the overall collection, most pieces of information derive from social media sources (63.2%), while the remaining portion stem from web sources (36.8%).

However, as explained below, the nature of the source of information (social media v web) can influence the type of analysis that can be performed (i.e. general overview v analysis related to the tagging strategies). Social media content usually provides limited information to support a correct tagging procedure and, therefore, tends to be included less in this kind of analysis.

2.1.3 Identification of content

The content selection process used the cloud platform WebLive, a software that automatically monitors websites and social networks. Data acquisition was performed through continuous web crawling, like that of search engines. Two non-exclusive techniques were employed to acquire web and social content.

- **Keyword-based web crawling with logical operators**: This method involved using main keywords, potentially combined with lexical rules through logical operators (e.g. AND). The platform scans the web and collects all web content and social posts that contain the main keywords or comply with predefined semantic rules set during the model configuration (main keywords combined with AND keywords).
- **Continuous monitoring of specific social media accounts**: This method envisages continuously monitoring specific social accounts of interest and collecting all their published posts, allowing for comprehensive acquisition of content from these sources. The social media data are then filtered using semantic rules. In our case, semantic rules were the same for both techniques adopted.

We selected five groups of keywords for English and three for Italian. Additionally, as part of this project, we comprehensively monitored the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC) social accounts of (Facebook, LinkedIn, and X). The selection of keywords and rules was developed by expanding an initial set tested during the first seven weeks of the project. After this initial testing phase, we implemented the final groups of keywords aimed at 'covering' specific and distinct areas in the discussion on digital platform work. A detailed overview of the keywords' structure is presented in the Appendix[7].

2.1.4 Categorisation of content

The process described so far is mostly automatic and allows for the gathering of information for quantitative analysis. In contrast, a more in-depth analysis requires the contribution of an analyst who reads, analyses and classifies the mentions according to a specific analytical framework. In this kind of process, the mentions are classified based on specific characteristics that are important for the study, such as themes addressed when referring to digital platform work. The following section covers the theoretical framework that has guided this classification process (tagging strategy) and presents the analytical strategy of the analysis.

2.2 Theoretical framework and analytical strategy

The analytical strategy adopted focused on four dimensions serving as the cardinal points for understanding the perception and representation of digital platform work and related OSH risks online: the *who/which dimension*, the *how dimension*, the *when dimension*, and the *what dimension*. This

[7] The effectiveness of the content selection procedure was constantly monitored during the data collection phase, and some adjustments were implemented to preserve the system's accuracy and data collection capacity over time (i.e. optimisation and performance tuning activities). Furthermore, all data generated by the automatic process and by analysts have been electronically stored in the WebLive platform and are available for consultation and downloading at any time during the study.

analytical approach has been used in various information analysis fields and constitutes an important tool for organising and interpreting collected information[8]. The combination of these dimensions allows for structuring the collected data and disentangling the related information at various levels of content aggregation.

The *who/which dimension* aims to answer the question: which are the primary social and web sources of information regarding digital platform work? This dimension seeks to measure the importance of media, primarily in terms of the number of mentions. It enables the identification of the leading online sites where digital platform work is discussed in terms of the volume of generated content and the type of participant engaged in the discussion.

The *how dimension* concerns the question: how are digital platform work related topics presented by both media and private users? This dimension aims to understand how topics are presented in online discussions over digital platform work, distinguishing between different types of users and media involved.

The *when dimension* covers the issues related to changes over time in the way the media address digital platform work. This dimension's purpose is to analyse the trends over time, looking at the following aspects:

i. the stability of the interest in digital platform work on media web pages and social accounts and the role of the leading participants over time;
ii. the effect of unexpected events that cause a sudden change in the interest in digital platform work-related online discussions; and
iii. the effects of specific events on the web, such as the entry into force of specific agreements, the implementation of a campaign, or the launch of a programme.

The *what dimension* addresses the question: what are the main themes associated with digital platform work? It aims to analyse and categorise the collected data. To this extent, a theoretical framework based on the literature on OSH risks in digital platform work and articulated in nine thematic areas clustered into three main groups was developed[9]. Figure 1 graphically reports the thematic areas identified and their interconnected relationships.

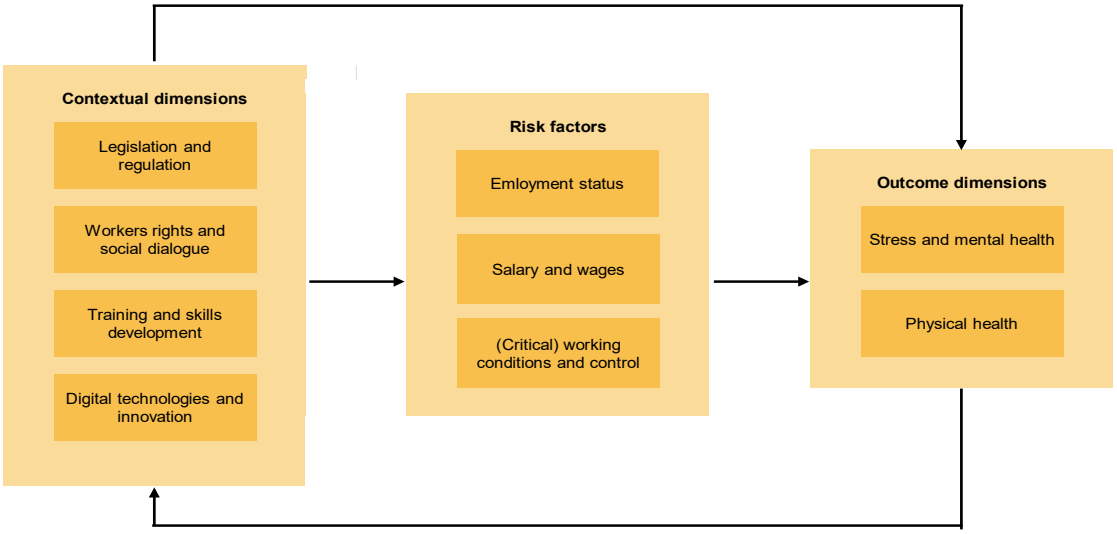
The tagging strategy allowed for the categorisation and structuring of content according to the thematic areas outlined in the theoretical framework. However, not all content could be categorised. This applies either to generic content that, while related to digital platform work, lacks elements that align with the tagging framework or to shorter content, such as tweets, where identifying relevant keywords is more challenging.

The first step in classifying collected data concerned the identification of pieces of content containing reference to contextual factors related to digital platform work, those related to the potentially intervening factors on OSH risk, and those directly related to potential outcomes of the latter risks (Figure 1). The assumption behind this classification is that contextual factors influence and regulate the general working conditions of digital platform work. These factors can relate to specific elements of risk that, in turn, are associated with adverse OSH outcomes. The second step of the classification process concerned the identification, within each area, of shared themes among the mentions selected. This result was obtained by creating a vast and detailed list of tags to characterise the subject/topic of each selected piece of content. The tagging strategy section in the Appendix comprises the complete list of tags by thematic area.

[8] See, for instance, Markey, K. (1983). Computer-Assisted Construction of a Thematic Catalog of Primary and Secondary Subject Matter. Visual Resources, 3(1), 16–49. https://doi.org/10.1080/01973762.1983.9659063; Shatford, S. (1986). Analyzing the Subject of a Picture: A Theoretical Approach. Cataloging & Classification Quarterly, 6(3), 39–62. https://doi.org/10.1300/J104v06n03_04.

[9] Among the literature analysed, the following report was an important source of information: Lenaerts K. et al (2022). Digital platform work and occupational safety and health: overview of regulation, policies, practices and research, The European Agency for Safety and Health at Work. Spain.

Figure 1: Tagging strategy framework: OSH-related risk in platform workers



Concerning contextual factors, four thematic areas were identified from the data: legislation and regulation, worker's rights and social dialogue, training and skill development, and digital technologies and innovation. The first area relates to mentions of the legislative and regulatory framework of digital platform work, and as such covers topics related to legislation, government regulations, reform acts, case law, and so on. The second area focuses on content directly related to (digital platform) workers' protection and representation. This includes topics concerning trade unions, collective bargaining, social dialogue, workers' participation, workers' protection, unemployment benefits and so forth. The training and skill development area identifies content mainly connected to workers' training and learning opportunities, employing tags such as upskilling, vocational training, career growth, or skill development. The last area of the contextual factors group relates explicitly to the intrinsic technological nature of digital platform work, focusing on tags connected to algorithmic management, algorithmic governance, workplace automation, or task automation technology.

The tagging procedure resulted in three thematic areas related to risk factor grouping: employment status, salary and wage, and (critical) working conditions and control. The first area focuses on pieces of content discussing the characteristics of digital platform work concerning status (i.e. full-time, part-time, or temporary employment; apprenticeship; casual employment; or fixed-term contract) and contract (seasonal workers, freelancers, independent contractors, contingent workers; project-based employment, work-on-demand, precariat, or zero-hours contracts). Salary and wage related tags are aimed at identifying mentions dealing with the economic conditions and inequalities related to digital platform work, employing tags such as wage or income insecurity, equitable or fair pay, wage gaps, or salary negotiations. The critical working conditions dimension grouped pieces of content regarding OSH risks relating to the specific working conditions of digital platforms and focuses on themes such as long-working hours, workload, poor or dangerous working conditions, repetitive tasks or task autonomy, nudging, gamification, employee monitoring or tracking, or workforce surveillance and so on.

The outcome grouping is related to content regarding the specific health and safety outcomes of digital platform work. The physical health dimension employed tags such as musculoskeletal disorders, work-related illness, workplace accidents, visual strain, or work-related disease. In accordance with the stress and mental health dimension, the pieces of content identified concern mental health, stress, anxiety, depression, burnout, job strain, emotional exhaustion or mental fatigue.

In terms of analysis, considering the analytical strategy adopted and the characteristics of the data collected, the *who/which* and *when dimensions* reconstruct the online discourse of digital platform work, focusing on the overall content collected. The *what dimension* applies the theoretical framework

developed on the tagged content and analyses the underlying relationships between the thematic areas that characterise the online discourse on digital platform work to understand the role of OSH risk within this debate. The *how dimension*, based on the X untagged content, allows for a quality-quantitative analysis (sentiment analysis) to characterise how digital platform work and OSH risks are perceived and discussed on X.

3 Drivers of OSH-related risks in the online discourse

In this section, we provide both a qualitative and quantitative analysis of the pieces of collected content at an aggregate level (in section 3.1), followed by an analysis focusing on the relationships between the thematic areas adopted[10] (in section 3.2), particularly in relation to the two OSH outcomes (in section 3.3), to understand the main related characteristics. Furthermore, a fourth section focuses on a qualitative-quantitative analysis of the tweets (in section 3.4).

3.1 Contextual dimensions, risk factors and mental and physical health

During the monitoring period (1 March 2024 to 31 August 2024), the platform collected a total of 47,681 pieces of content. This represents a substantial corpus, particularly given that the data was gathered over just six months. On average, more than 250 mentions were collected per day. Furthermore, during the fully operational data collection phase (23 April 2024 to 31 August 2024), the average daily content collected increased to over 350 pieces.

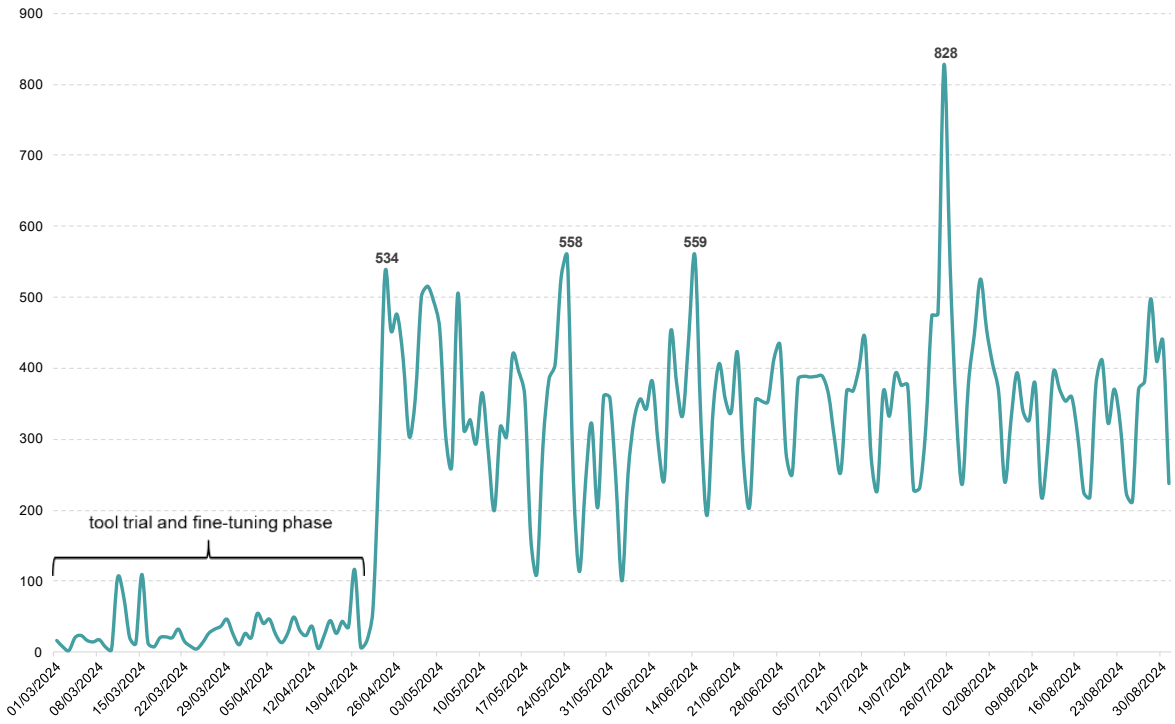
Data collection was continuous throughout the period. The trend graph reveals a sinusoidal pattern, indicative of a clear weekly cyclicality: Saturdays and Sundays typically represent the lowest points, as fewer news items are published on weekends. An analysis of the peaks in data acquisition is particularly noteworthy. We identified four significant peaks (Figure 2), which deviate positively from the average and are primarily associated with events of national and international importance.

- The first peak was recorded on 24 April (534 mentions) and was driven by news of the European Parliament's approval of the Platform Work Directive. This announcement garnered significant public and media attention, sparking discussions about the contractual conditions of platform workers and the regulation of algorithmic management.
- The second spike occurred on 24 May (558 mentions) and was related to a surge in election-related tweets urging citizens to vote for the INDIA Alliance, a political party advocating for gig workers' rights, in the Indian general election in June 2024.
- The third surge was recorded on 14 June (559 mentions). This spike was triggered by the adoption of new policies for gig workers in British Columbia (Canada). The event received positive reactions from gig workers' unions but faced criticism from platforms, notably Uber, leading to heightened debate on the topic, especially on X.
- The fourth peak, the highest of the monitoring period, occurred on 25 July (828 mentions). It was caused by the California Supreme Court ruling that classified gig workers as independent contractors, thereby excluding them from certain benefits such as sick leave, overtime pay, and workers' compensation. As a result, the decision led to widespread critical reactions on social media, which was seen as a victory for digital platforms at the expense of workers' rights.

In summary, events intensifying the public debate on digital platform work, both on the web and social media, were primarily legislative actions and court rulings related to the rights of digital platform workers.

[10] Due to the plurality of contents/topics that a single piece of content may cover, especially concerning mentions stemming from the web (e.g. news websites, institutional websites, etc.), a single piece of content collected usually presents a plurality of tags. The fact that the tagging strategy provides for a unique set of tags for each dimension and that, usually, the identification of single content requires a plurality of tags leads to the possibility of understanding not only how the mentions collected are characterised concerning the thematic areas identified but also how and with which intensity these thematic areas relate to each other in the digital discourse.

Figure 2: Trend of overall mentions collection over time



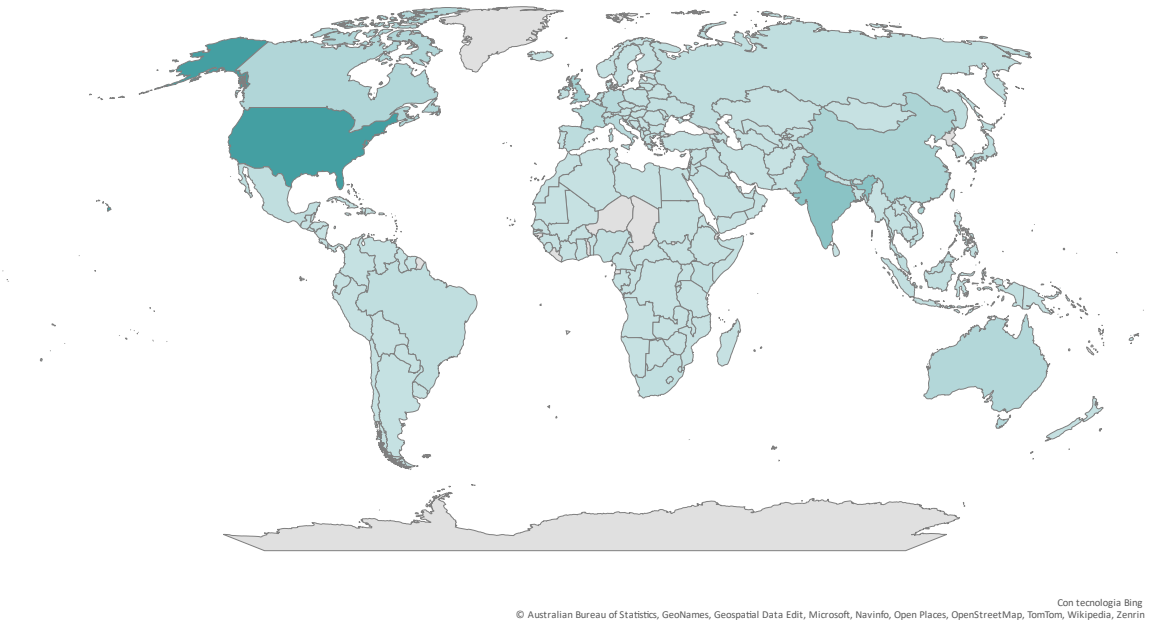
Source: Authors' elaboration based on the overall valid mentions collected

The data collected from web and social media sources on the topic of digital platform work reveal a significant concentration of mentions regarding English-speaking countries (Figures 3 and 4), with the United States (6,469 mentions), India (2,969), and the United Kingdom (1,691) leading the conversation. North America dominates, driven primarily by the United States, while Asia is also well-represented thanks to India and China (1,309). The EU-27 contributes substantially with 5,674 mentions (11.9% of the collected pieces of content), and if considered as a unified group, it would rank second only to the United States. Key countries outside the EU, such as the UK, Canada (1,078), and Australia (977), follow closely behind.

Interestingly, countries like China and Japan (476), where English is not the primary language, still show notable activity, possibly due to global interest or localised conversations happening in English. In contrast, participation from African and Latin American nations is relatively low, with countries like Nigeria (244) and Kenya (281) contributing minimally. This result might reflect either a lower volume of digital conversations in English or less public discourse around platform work in these regions.

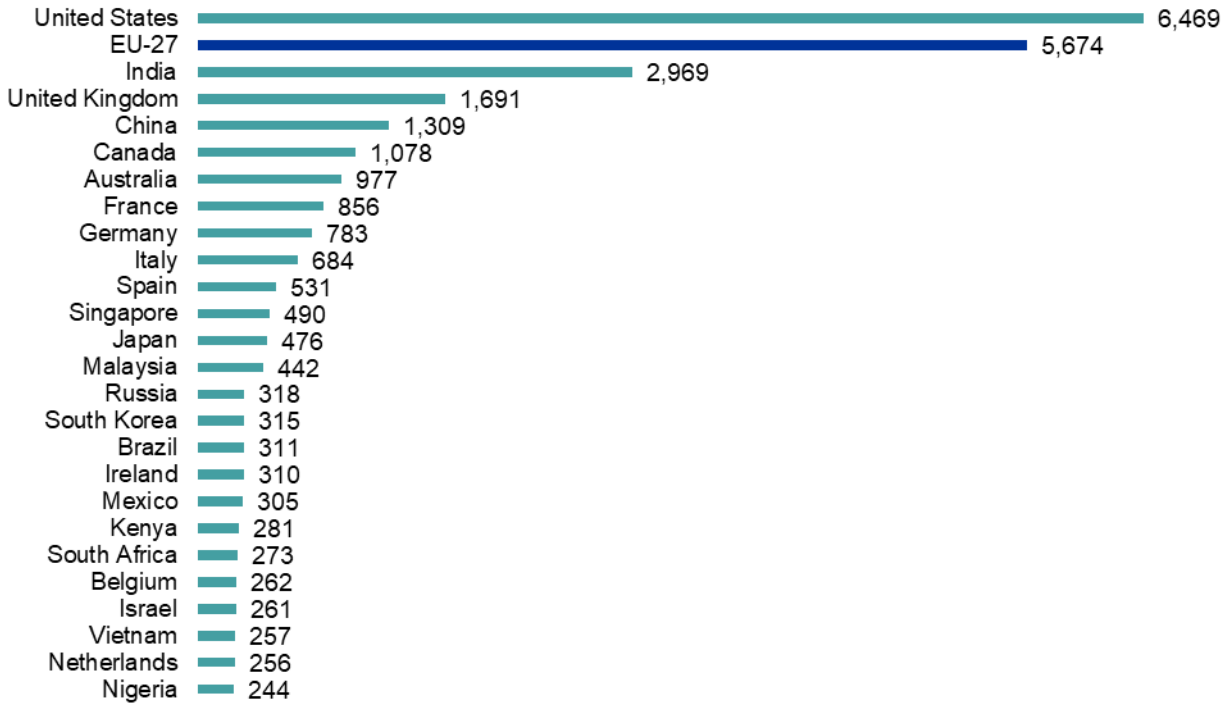
The focus on English-language data collection likely skews the representation towards countries with significant English-speaking populations, leaving potential gaps in multilingual regions such as Europe, Latin America, and Africa. The trends suggest that the English-language debate around digital platform work is active in countries with large gig economies and legal discussions, as seen in the United States, India, and Europe spikes.

Figure 3: Global data distribution



Source: Authors' elaboration based on the overall valid mentions collected

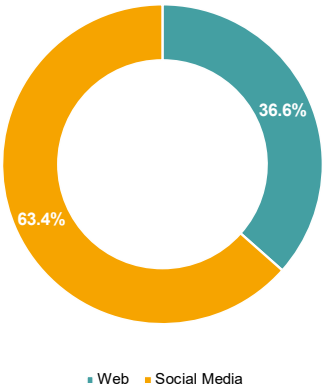
Figure 4: Top 25 mentioned countries



Source: Authors' elaboration based on the overall valid mentions collected
Note: The sum of mentions for the listed countries does not match the overall total because not all content necessarily mentions a country while a single piece of content may mention more than one country. Henceforth these tags are not mutually exclusive.

Discussions on digital platform work primarily occur on social media accounting for 63.4% of the total content, while web-based sources contribute 36.6% (Figure 5). The web category includes news portals, traditional media websites (newspapers, radio, TV, etc.), institutional websites, trade union platforms, blogs, forums, and other types of websites.

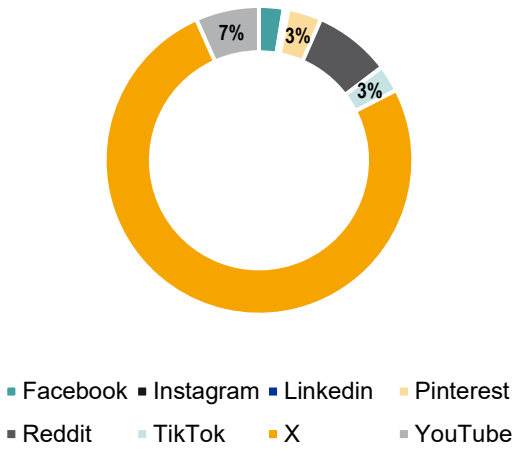
Figure 5: Mention distribution by source



Source: Authors' elaboration based on the overall valid mentions collected

Regarding social media platforms, X clearly dominates, exclusively generating 76% of the mentions related to digital platform work (Figure 6). The remaining social platforms are more evenly distributed, with Reddit at 8%, followed by YouTube at 7%, and Facebook, Instagram, LinkedIn, Pinterest, and TikTok contributing 3%. This suggests that X is the primary channel for public debate, while other platforms play more specific but still relevant roles in the discussion. Reddit stands out as a relevant platform, contributing 8% of the mentions. Such a high content share is rarely found in web and social intelligence studies of this type, therefore it seemed significant as an online platform where workers discuss their issues of concern. This reflects its role as a space for in-depth discussions and niche communities focused on labour issues, making it a channel of interest for further analysis in the next section.

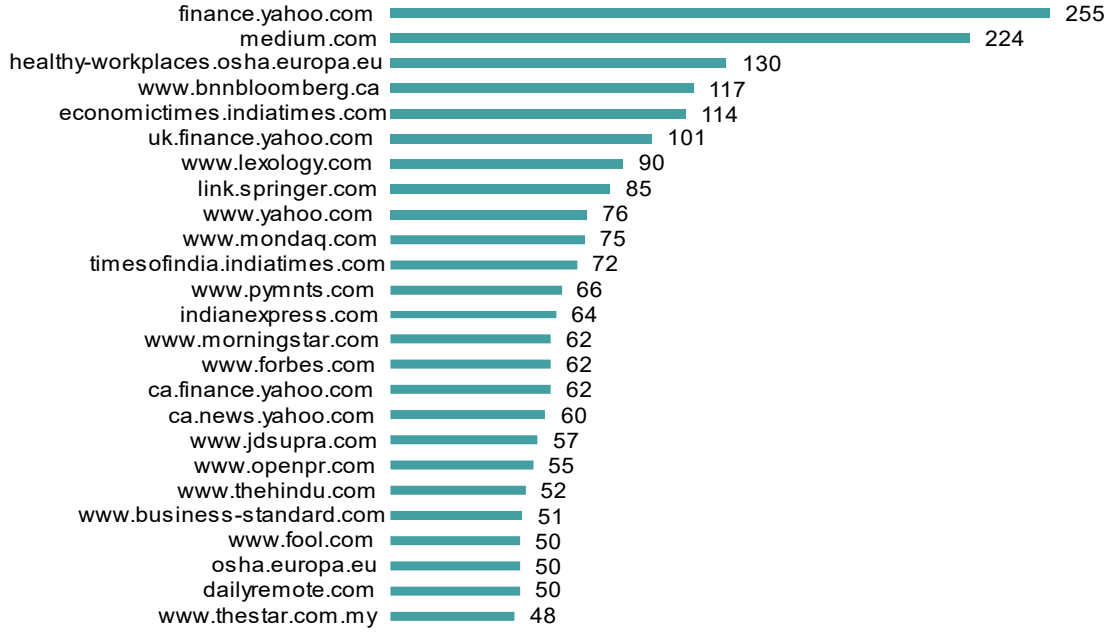
Figure 6: Mention distribution by social network



Source: Authors' elaboration based on the overall valid mentions collected

The following graphs provide insights into the top websites and social media platforms generating content on digital platform work in English language. Figure 7 illustrates the top websites generating content on digital platform work. At the forefront is finance.yahoo.com (255 mentions), followed closely by medium.com (224 mentions), a popular blogging platform where users, including experts and workers, contribute essays and opinion pieces on various topics, including digital platform work.

Figure 7: Top 25 websites

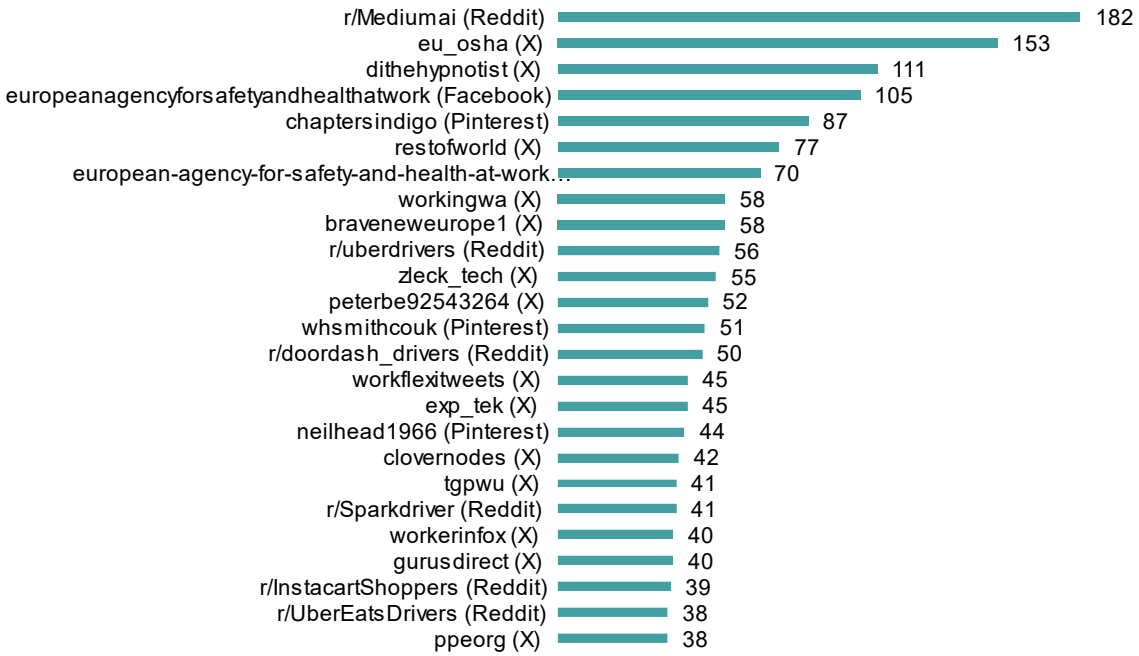


Source: Authors' elaboration based on the overall valid mentions collected

The appearance of healthy-workplaces.osha.europa.eu (130 mentions) in the top ranks highlights the relevance of workplace safety and health discussions in the broader conversation on digital platform work and the impact of EU-OSHA's work on this topic. Financial news outlets such as bnn.bloomberg.ca and economictimes.indiatimes.com also show significant activity, reflecting ongoing media coverage of digital platform works' economic and labour implications.

Figure 8 focuses on social media activity. X (formerly Twitter) dominates the conversation, with accounts like eu_osha (153 mentions), europeanagencyforsafetyandhealthatwork (105 mentions) and European-agency-for-safety-and-health-at-work (70 mentions) providing consistent updates on regulations and workplace safety. However, Reddit also plays a crucial role, especially through highly active communities like r/Meduimai (182 mentions), r/uberdrivers (56 mentions), r/Sparkdriver (41 mentions), and r/InstacartShoppers (39 mentions) and r/UberEatsDrivers (38 mentions). These subreddits offer a space for platform workers to share personal experiences, exchange advice, and discuss challenges, making them essential hubs for worker-driven content. It is also relevant to note that accounts like workingwa (58 mentions), restofworld (77 mentions), and braveneweurope1 (58 mentions) play an important role in the conversation. Working Washington (workingwa) is a workers' organisation advocating for better wages and labour standards in Washington state, United States; Rest of World (restofworld) is a nonprofit publication focused on the impact of technology outside the Western world, and Brave New Europe (braveneweurope1) is an educational website offering critical perspectives on European politics, economics, and environmental issues. These accounts, closely tied to workers' rights and social issues, provide advocacy, analysis and critical reporting that complement the grassroots discussions on platforms like Reddit.

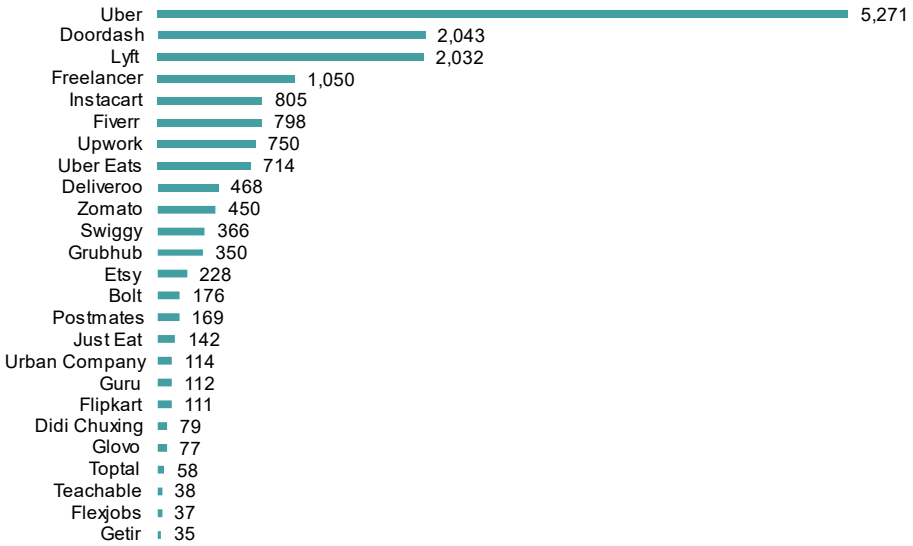
Figure 8: Top 25 social accounts



Source: Authors' elaboration based on the overall valid mentions collected

The bar chart in Figure 9 highlights the digital platforms most frequently mentioned in discussions about digital platform work. Uber (5,271 mentions) dominates the conversation, followed by DoorDash (2,043 mentions) and Lyft (2,032 mentions), which are key players in the transportation and food delivery sectors. Other notable platforms include Instacart, Fiverr, Upwork and Uber Eats, which are frequently discussed due to their role in connecting workers to on-demand services. These platforms represent the major actors shaping the discussion related to digital platform work.

Figure 9: Top 25 platforms



Source: Authors' elaboration based on the overall valid mentions collected

The bar chart in Figure 10 focuses on the international institutions and organisations involved in the discourse around digital platform work. EU-OSHA is the most frequently cited with 723 mentions. This is expected as EU-OSHA directly addresses OSH-related topics and was running, at the time of the data collection, an active awareness-raising campaign on digital platform work with OSH influencing the discussion. Other key organisations include the European Parliament (511 mentions), the International Labour Organization (391 mentions), and the European Commission (348 mentions), all of which contribute significantly to discussions on labour standards and platform work regulations. Economic institutions like the World Bank (136 mentions) and the World Economic Forum (115 mentions) also play important roles, while trade unions, such as the Service Employees International Union (SEIU) (209 mentions), the Trade Union Congress (TUC) (76 mentions), the European Trade Union Confederation (ETUC) (50 mentions) and the International Trade Union Confederation (ITUC) (24 mentions), remain active in advocating for platform workers' rights.

Figure 10: Top 25 institutions and organisations

Source: Authors' elaboration based on the overall valid mentions collected

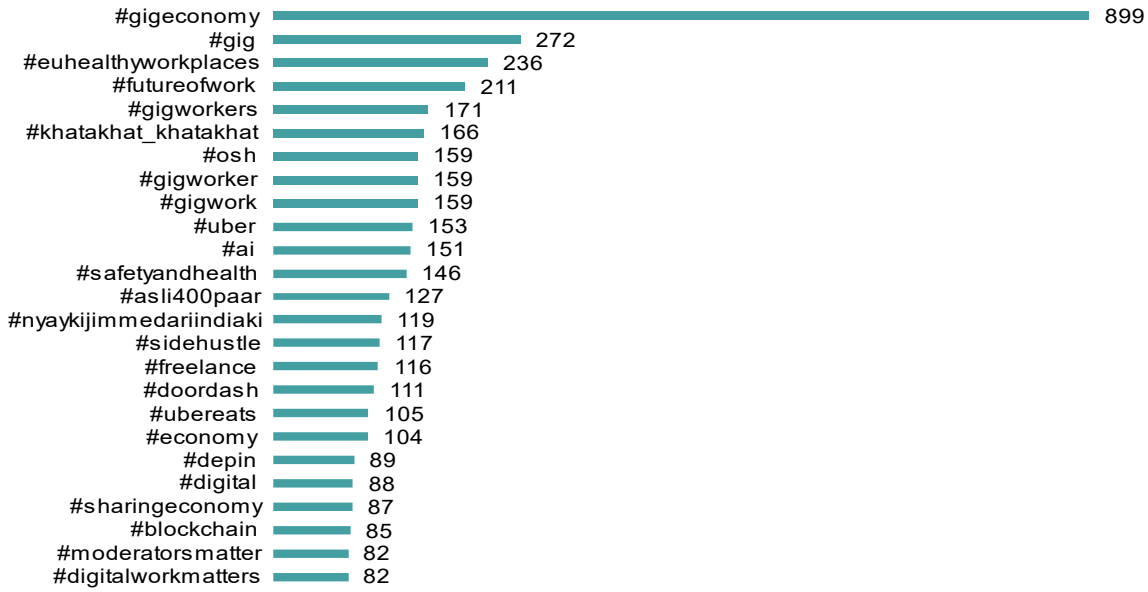
Figure 11 shows the most prevalent hashtags among the collected content. Several of these, such as #gigeconomy (899 mentions), #gig (272 mentions), #gigworkers (171 mentions), #gigworker (159 mentions), and #gigwork (159 mentions), are general terms related to gig work and the gig economy, reflecting the broad discussion surrounding platform labour.

Notably, #euhealthyworkplaces (236 mentions) is tied to the EU-OSHA 'Healthy Workplaces Campaign 'Safe and healthy work in the digital age 2023–2025', which focuses on improving working conditions in the digital economy.

There are also hashtags in Indian languages such as #khatakhat_khatakhat (166 mentions), #asli400paar (127 mentions), and #nyaykijimmedariindiaki (119 mentions), which are connected to the Indian general election in June 2024, where digital platform workers' rights were a central issue in the political campaign.

Platform-specific hashtags like #uber (153 mentions), #doordash (111 mentions), and #ubereats (105 mentions) point to discussions centred around the practices and working conditions of these digital platforms. Additionally, hashtags such as #digitalworkmatters (82 mentions) and #moderatormatters (82 mentions) support digital platform workers, focusing on labour rights and fair working conditions.

Figure 11: Top 25 hashtags



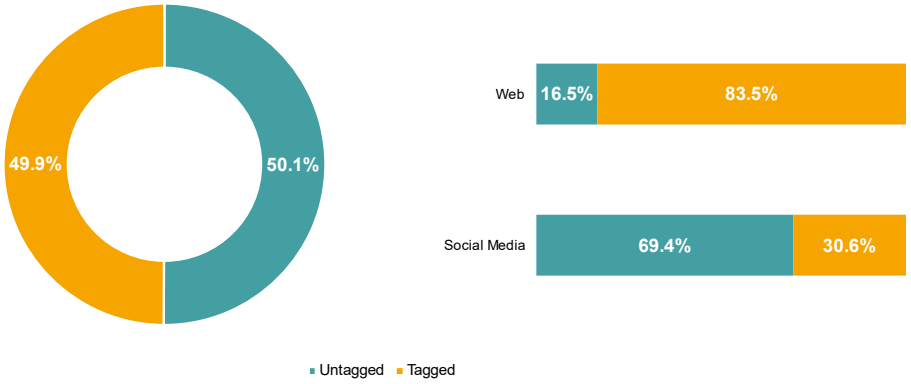
Source: Authors' elaboration based on the overall valid mentions collected

Based on the tagging system, 49.9% of the total content was tagged, while 50.1% remained untagged, as shown in Figure 12. This highlights that approximately half of the content collected provided sufficient detail for categorisation.

When broken down by source, the tagging of web content is significantly higher than for social media, with 83.5% tagged and only 16.5% untagged for web content. This reflects the generally more detailed and structured nature of web-based content, which aligns more easily with the tagging framework.

In contrast, social media content shows a higher proportion of untagged material, with 69.4% untagged and only 30.6% successfully tagged. The lower tagging rate for social media can be attributed to typically shorter and less detailed posts, which often do not provide enough context for effective tagging.

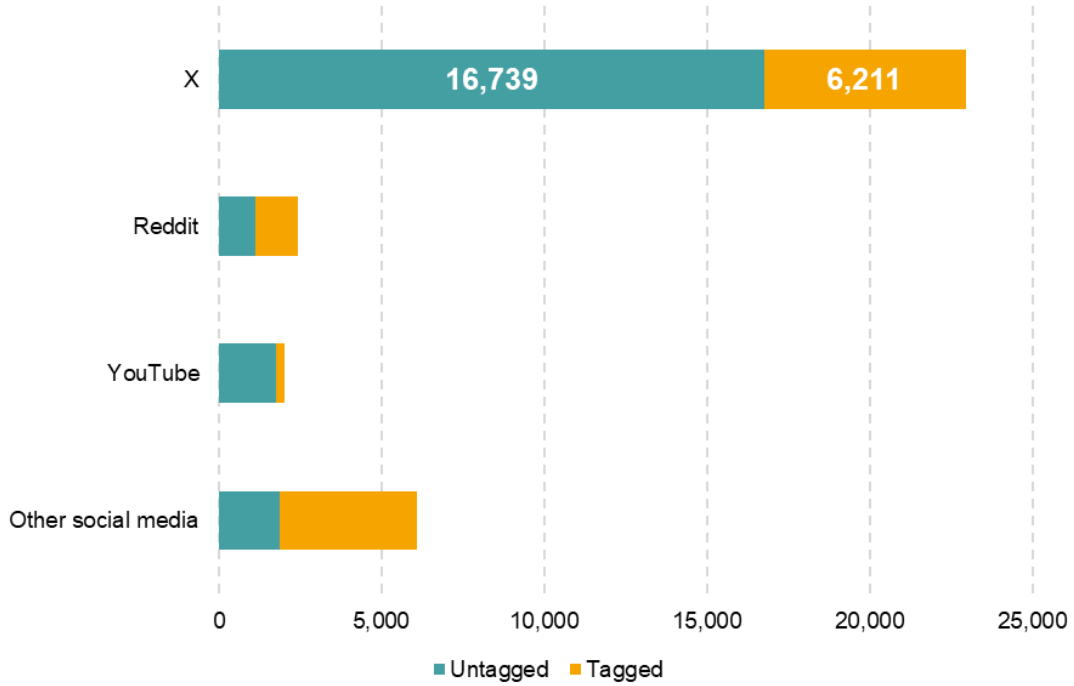
Figure 12: Proportion of tagged and untagged content across web and social media sources



Source: Authors' elaboration based on the overall valid mentions collected

Most untagged content (16,739 mentions) originates from X, as shown in Figure 13. This is primarily due to the platform's structure, where posts generally consist of short, limited-text formats.

Figure 13: Tagged and untagged content across social media sources



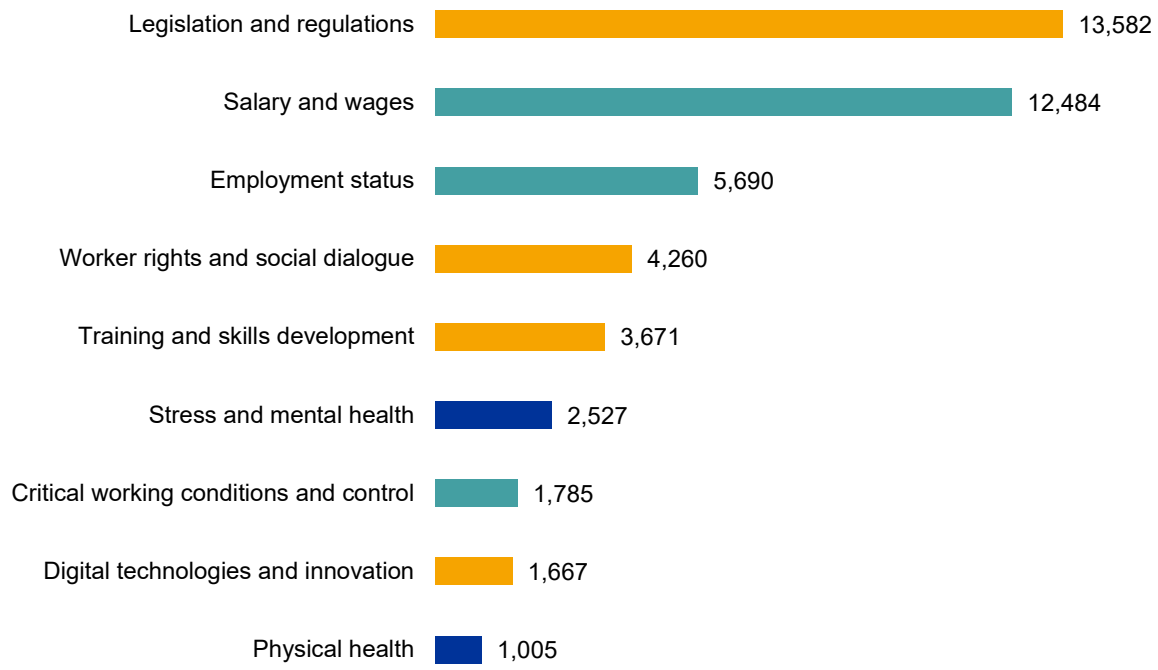
Source: Authors' elaboration based on the overall valid mentions collected

As anticipated above, we differentiated the kind of analysis performed to account for this data characteristic.

3.2 Disentangling the relationship: main drivers of OSH-related outcomes on websites and social media

In this section, we explore the relationships between the thematic areas, particularly those related to OSH outcomes, to understand how, in the virtual domain, the discussions simultaneously cover topics falling in more than one area. Furthermore, concerning the relationship between risk/intervening factors and health outcomes, we look into the analysis to characterise how risk factors and OSH outcomes are perceived and represented in the digital arena.

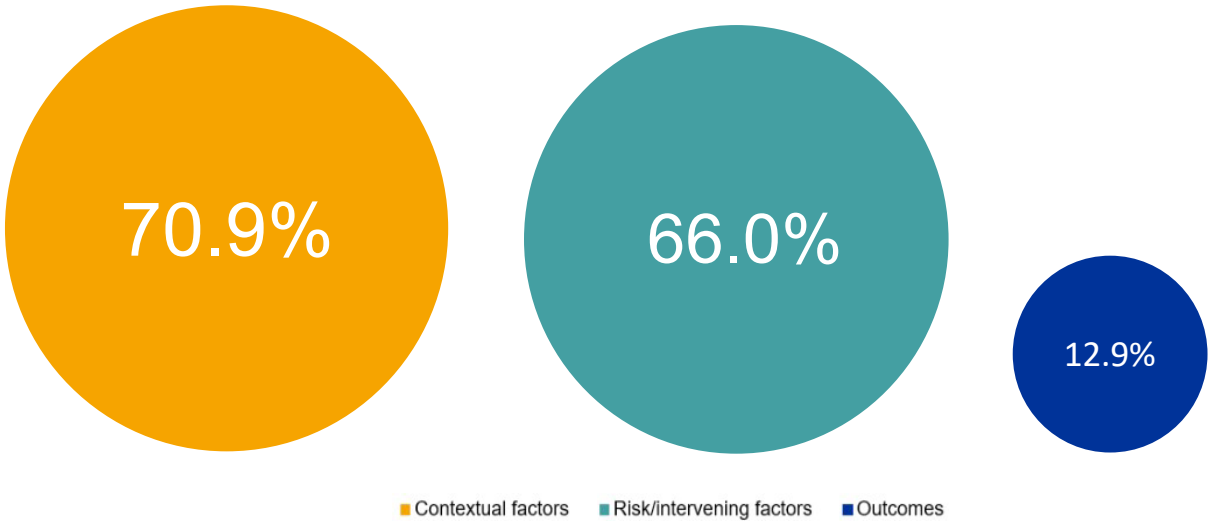
Figure 14: Thematic area distribution by the intensity of online discussion frequency (number of mentions collected)



Source: Authors' elaboration based on the overall valid mentions collected

Figure 14 shows the distribution of the thematic areas defined for the purpose of this study (as shown in Figure 1). All in all, legislation and regulations (13,582 mentions) and salary and wages (12,484 mentions) are by far, the two areas most discussed in online discourse on digital platform work. Indeed, around one out of four mentions collected is related to one of these areas. Employment status and workers' rights and social dialogue reach to around 5,000 and 4,000 mentions, respectively, indicating that the theme of workers' protection and rights is central in the discourse around digital platform work. The theme of training and skills development collected around 3,500 mentions, suggesting a potentially different framing of discourse centred around the learning potential of digital platforms. On the other hand, the theme of digital technologies and innovation remains less prominent, with 1,667 mentions. Furthermore, it is interesting that the thematic area critical working conditions and control is discussed significantly less frequently (1,785 mentions) than the other two intervening/risk factors areas (salary and wages, and employment status) despite the increasingly recent EU debate about digital platform workers' working conditions in relation to algorithmic management control. Regarding the two thematic areas related to health outcomes, they are also significantly less in focus, although stress and mental health is discussed significantly more than physical health, reaching 2,527 mentions compared to 1,005.

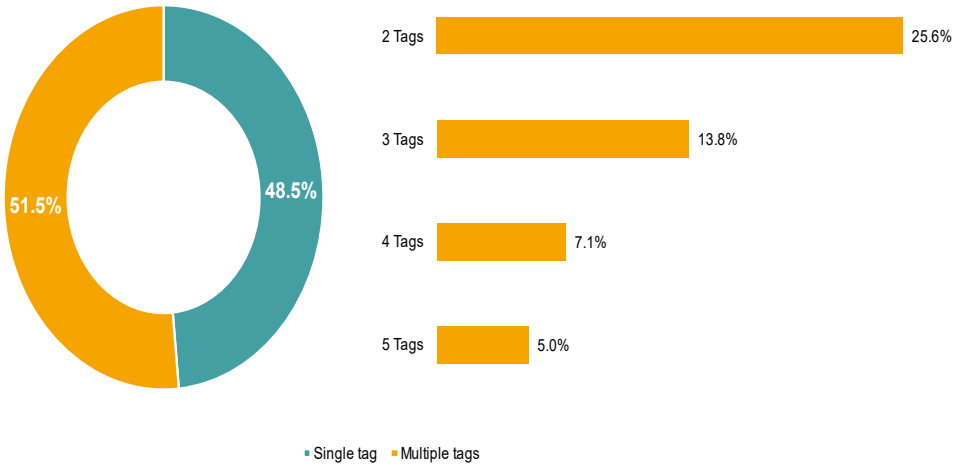
Figure 15: Proportion of tagged content by thematic area



Source: Authors' elaboration based on the overall valid mentions collected

All in all, 70.9% of the tagged content is related to contextual factors, 66.0% to risk/intervening factors, and 12.9% to outcomes (Figure 15). It is important to note that the tags are not mutually exclusive, meaning that a single piece of content can be assigned multiple tags across different thematic areas. Indeed, as illustrated in Figure 16, 51.5% of the tagged content has been assigned only one tag, while the remaining 48.5% has been tagged with multiple thematic areas. This indicates that a significant portion of mentions carries multiple tags. The Venn diagram in Figure 17 illustrates these overlaps[11] between contextual factors, risk/intervening factors, and outcomes.

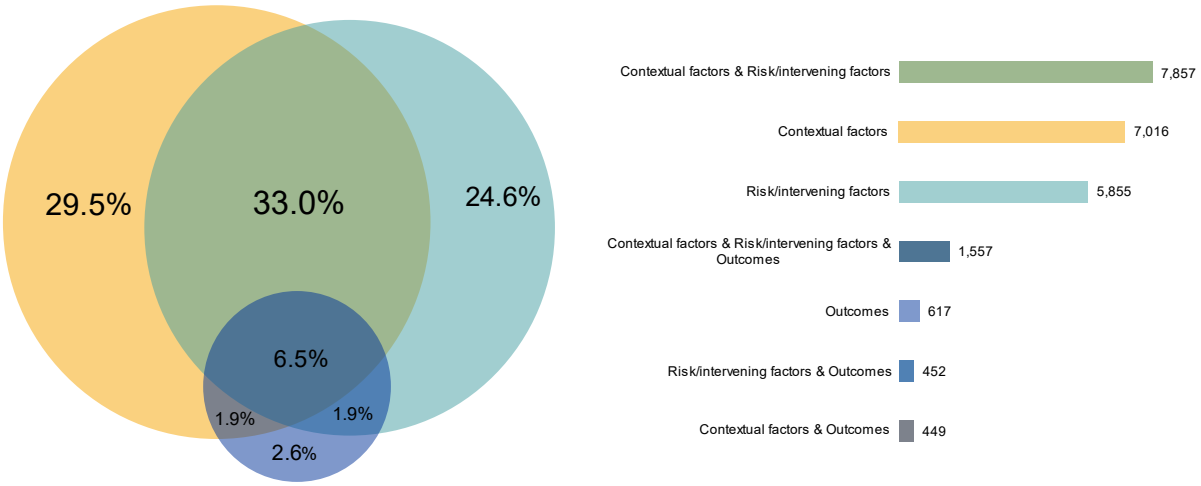
Figure 16: Distribution of single and multiple tags across tagged content



Source: Authors' elaboration based on the overall valid mentions collected

[11] Simply put, we use overlap here to indicate the intensity with which the online discourses can be tagged in two thematic areas simultaneously.

Figure 17: Overlap of contextual factors, risk/intervening factors, and outcomes



Source: Authors' elaboration based on the overall valid mentions collected

We begin by analysing the non-overlapping portions of the Venn diagram. The yellow portion of the first set, containing 7,016 mentions (29.5% of the total tagged content), includes mentions that are tagged exclusively within the thematic areas of contextual factors. Of these, 62.3% are tagged in the legislation and regulation thematic area, followed by training and skills development at 7.6%, working rights and social dialogue at 7.3%, and digital technologies and innovation at 5.7%. The remaining 17% consists of combinations between the legislation and regulation thematic area and other contextual factors.

Similarly, the teal portion of the second set, comprising 5,855 mentions (24.6% of the total tagged content), includes mentions tagged exclusively within the thematic areas of risk and intervening factors. The majority of these mentions (66.3%) are tagged within the salary and wages thematic area, followed by 18.0% in the employment status thematic area. The remaining mentions largely overlap between these areas, with less content tagged in critical working conditions and control.

The blue portion of the Venn diagram, which contains only the mentions tagged with the two dimensions of outcomes, namely stress and mental health, and physical health, holds a very small portion of the content, with 617 mentions (2.6%).

Moving to the analysis of the overlapping areas the most significant overlap is found between contextual factors and risk/intervening factors, accounting for 33% of the tagged content (7,857 mentions).

The majority of these mentions (70.4%) involve the thematic areas legislation and regulations and salary and wages. The second most frequent combination, though considerably less common, is the co-occurrence of training and skills development and employment status (13.8%).

The overlaps between outcomes and contextual factors or risk/intervening factors, are minimal, representing only 1.9% of the total tagged content for both cases. However, the overlap that includes all three areas(contextual factors, risk and intervening factors, outcomes), is more substantial, making up 6.5% of the tagged content, and it highlights more specifically the concurrent presence of the thematic areas legislation and regulations, salary and wages, and the stress and mental health.

There are 502 possible combinations between the nine thematic areas, making it impossible to represent all of them graphically. Therefore, we have chosen to present a double-entry heatmap[12] to highlight the key contingencies. This format provides a clear visualisation of the most significant overlaps and their frequency between the thematic areas (Figure 18).

[12] Green cells indicate the highest share of mentions across thematic areas. In contrast, red cells indicate the lowest level, with yellow cells in between.

Figure 18: Theoretical dimensions heatmap

	Legislation and regulation	Worker rights and social dialogue	Training and skills development	Digital technologies and innovation	Employment status	Salary and wages	(Critical) working conditions and control	Stress and mental health
Legislation and regulation								
Worker rights and social dialogue	3281							
Training and skills development	1792	599						
Digital technologies and innovation	891	430	273					
Employment status	2666	1202	1452	320				
Salary and wages	6613	2715	1809	490	2960			
(Critical) working conditions and control	1181	688	370	223	535	1090		
Stress and mental health	891	493	682	156	861	1389	352	
Physical health	545	271	177	77	215	465	137	423

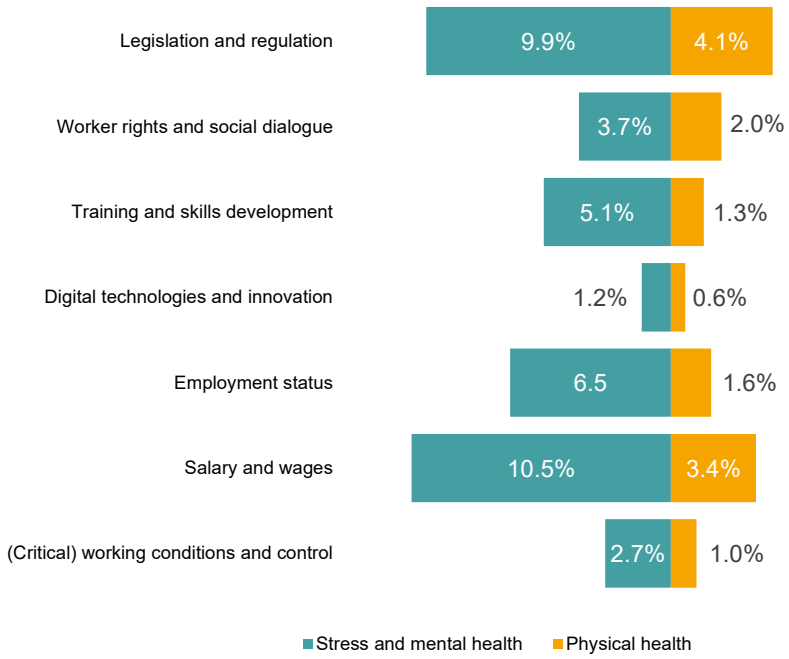
In other words, Figure 18 reports the different frequencies/intensities with which the online discourse on digital platform work occurred for each potential pair among the nine thematic areas observed. Not surprisingly, the two areas that shared the largest number of mentions, legislation and regulation and salary and wage, are also characterised by the highest level of overlap. Similarly, data suggest that in the digital discourse, other relevant overlaps with the latter thematic areas concern workers' rights and social dialogue, employment status, and training and skill development areas.

On the other hand, although the two thematic areas related to health outcomes show a more limited number of mentions that overlap with the different thematic areas, some interesting results emerge. Indeed, an important number of mentions discuss topics jointly related to stress and mental health and salary and wages (1,389) as well as with legislation and regulation (891). The same reasoning applies to the physical health area for which the highest overlaps concern the same thematic area (545 with legislation and regulation and 465 with salary and wage).

Figure 19 investigates the relationship between the two outcomes and each thematic area and displays the relative percentages of mentions that overlap with stress and mental health and physical health. In both cases, the main driver of thematic convergence concerns the risk/intervening factor salary and wages. The figures also confirm the importance and prevalence of thematic areas related to legislation and regulation and employment status, but, at the same time, highlight the limited relevance that topics related to (critical) working conditions and control play in this regard. Considering that the latter dimension's tags are hypothetically highly related to adverse effects in terms of OSH, it is surprising that, for both outcomes, the percentage is almost the lowest, just after digital technologies and innovation.

Section 3.3 presents the result of a quality-quantitative analysis of mentions related to these two thematic areas to further understand how the outcome discourse is structured in the online debate.

Figure 19: Outcome dimensions overlaps



Source: Authors' elaboration based on the overall valid mentions collected

3.3 A focus on the OSH outcomes

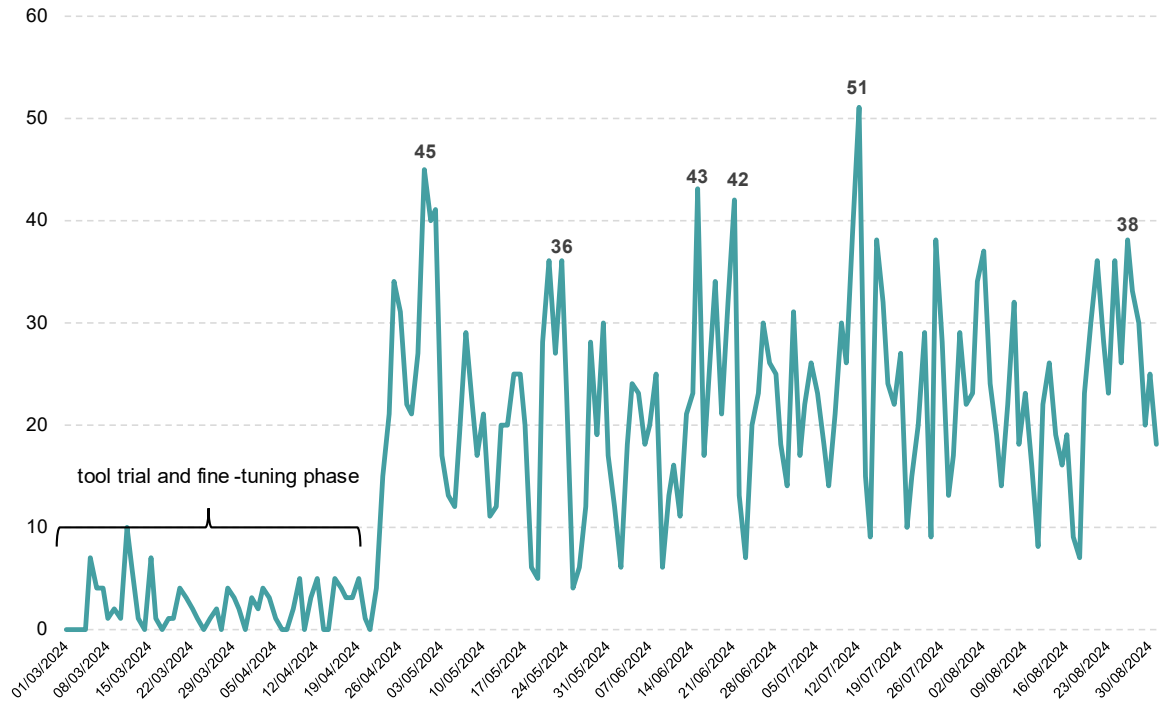
In this section, we examine the OSH outcomes – specifically, the content labelled stress and mental health and/or physical health – which correspond to the blue portion of the Venn diagram presented in Figure 17. The analysed corpus includes 3,075 mentions, immediately indicating that content related to outcomes holds a relatively marginal position in the online debate on digital platform work. Furthermore, 617 mentions (2.6% of tagged content) are labelled only with one or both outcomes. Similarly, 472 mentions (1.9% of tagged content) are tagged with both outcomes and contextual factors but not with risk/intervening factors, while 449 mentions (1.9% of tagged content) are labelled with outcomes and risk/intervening factors but without contextual factors. The largest subset comprises 1,557 mentions (6.5% of the total content), which include tags for outcomes, risk/intervening factors, and contextual factors.

Looking at the distribution of outcomes, we observe that 549 mentions are exclusively labelled with physical health, 2,070 are exclusively tagged with stress and mental health, and 456 include both labels. At the thematic area level, as depicted in Figure 19, content related to outcomes predominantly overlaps with salary and wages, legislation and regulations, and employment status. These intersections highlight the relationship between health-related outcomes and significant economic and regulatory dimensions of digital platform work.

The trend over time (Figure 20) does not differ from the overall collected content, except for the (limited) intensity, showing a sinusoidal pattern indicative of a clear weekly cycle. The analysis of the peaks in

data acquisition identified five significant peaks, which deviate positively from the average and are primarily associated with events of national and international importance.

Figure 20: OSH outcomes trend



Source: Authors' elaboration based on the overall valid mentions collected

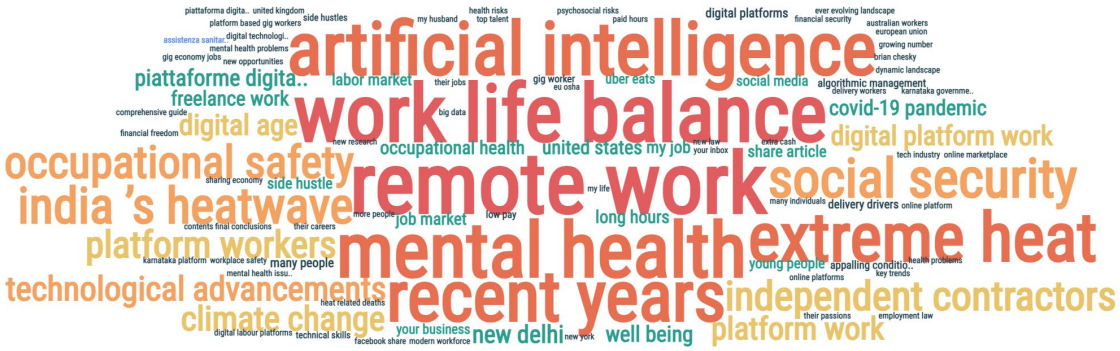
- The peak on 30 April (45 mentions) was driven by Indian newspapers reporting criticism over Swiggy's (India's second-largest food delivery platform) decision to introduce an incentive-based health insurance structure for delivery agents that categorises workers into gold, silver, and bronze tiers.
- The peak on 23 May (36 mentions) was related to an EU-OSHA news item titled 'Strategies to address occupational safety and health risks in digital platform work' published on its Healthy Workplaces Campaign website [13]. This further highlights EU-OSHA's leading role in the debate around digital platform work.
- The peak on 21 June (43 mentions) was driven by a news article in a Canadian newspaper about proposed changes to the Canada Labour Code. These modifications aim to further protect gig workers' access to rights.
- The peak on 12 July (42 mentions) was driven by Indian newspaper reports that India urgently needed a comprehensive public health plan to tackle heatwaves. The news also reported that the Telangana Gig and Platform Workers Union (TGPWU) aimed to highlight the impact of the heatwave on gig workers by reaching out to the National Human Rights Commission (NHRC).
- The peak on 26 August (38 mentions) related to an article by the Australian Institute of International Affairs that criticised the working conditions of Chinese gig economy workers.[14] It

[13] See: https://healthy-workplaces.osha.europa.eu/en/media-centre/news/strategies-address-occupational-safety-and-health-risks-digital-platform-work

[14] The article states that 'China's booming gig economy promises convenience but hides a darker reality. Beneath the surface of convenience and fast deliveries lies a web of human costs, including physical and mental health struggles, financial insecurity, and a growing skills gap'. See https://www.internationalaffairs.org.au/australianoutlook/the-human-costs-of-chinas-gig-economy/

is noteworthy that, for content tagged with OSH outcomes, the EU Platform Work Directive did not cause a spike in news coverage (Figure 20). This contrasts with the trend observed in overall mentions (Figure 2), where the Directive was one of the key events driving increased attention. This discrepancy is due to the Directive's primary focus on the employment status of digital platform workers and algorithmic management, without specifically addressing issues related to OSH.

Figure 21: Outcomes word cloud



Source: Authors' elaboration based on the overall valid mentions collected

The word cloud presents some insights into the online discourse surrounding digital platform work, in relation to physical and mental health. Work-life balance and remote work stand out as dominant themes, indicating that much of the conversation revolves around the challenges of balancing personal and professional lives in a remote or flexible work setting such as digital platform work. This connection between remote work, work-life balance and physical and mental health is addressed in numerous articles that discuss the challenges and benefits of digital platform work and flexible work arrangements. In these discussions, remote work is frequently portrayed as a source of autonomy and flexibility, while the risks of stress and mental health issues are increasingly acknowledged as potential downsides to these evolving work patterns.

While topics such as artificial intelligence (AI), platform workers, and occupational safety are present as expected, it is noteworthy that environmental issues, like extreme heat and climate change, also play a significant role in discussions. This highlights a growing awareness of how external factors, including environmental conditions, affect workers' safety and health, particularly for those in physically demanding or outdoor digital platform jobs.

The prominence of mental health underscores the increasing concern about the psychological wellbeing of workers engaged in the digital platform economy. Interestingly, terms such as social security and independent contractors further emphasise the broader conversation around the precarious nature of work in digital platforms, raising issues about social security, employment benefits, and labour rights for platform workers.

Overall, the word cloud reflects a multifaceted dialogue, where the challenges of mental health and stress intersect with both traditional labour concerns and emerging issues related to remote work and climate change. This suggests that the online debate on digital platform work is evolving to encompass a wider range of concerns about the safety, health and wellbeing and rights of workers in this fast-changing sector.

Based on a thorough, in-depth review and analysis of the content of pieces of information collected in this study, the analyst extracted the following insights on the aspects discussed by individuals who share in the digital media their experiences as digital platform workers in relation to workers' mental and physical health.

Many individuals who share their experiences about digital platform work emphasise both economic and personal challenges, primarily due to the precarious nature of their employment. A common theme

emerging from the qualitative analysis conducted on the content gathered through web and social intelligence activities is the significant impact on workers' overall safety, health and wellbeing, with particular concern regarding both mental and physical health. Workers frequently express feelings of uncertainty, financial instability, and difficulty in accessing stable benefits or healthcare services. These factors combine to create a broader sense of vulnerability, where platform work is perceived as a necessary but unstable means of survival, affecting both mental and physical conditions.

A closer analysis reveals how employment status, salary and wages, and working conditions – the key risks and intervening factors – affect both mental and physical health outcomes. Mental health concerns, for example, are closely intertwined with the precarious nature of employment typical of digital platform work. As pointed out in the literature of reference [15], the flexibility of digital platform work, while occasionally appreciated for its potential to balance personal and professional life, often leads to negative outcomes such as isolation, uncertainty, and anxiety.

The impact of salary and wages is also significant. Financial insecurity is evident in the analysed content. Individuals engaged in digital platform work often report challenges in meeting their daily expenses, and many express distress over their precarious circumstances. In various posts, there are genuine appeals for assistance with rent and grocery bills, while others seek new employment opportunities by posting their resumes online, a trend particularly noted in platforms like Reddit. These financial concerns reflect broader systemic issues, where the absence of fair compensation and job protection exacerbates the stress and anxiety associated with platform work. The analysed content highlights that this issue is widely discussed across various media, including social media posts, online newspaper articles, and other digital public forums. There is a significant debate around the lack of benefits typically associated with traditional employment, with frequent calls for stronger protections. These discussions emphasise the importance of fairer wage regulation and improved worker rights as critical measures to reduce financial stress and insecurity.

Moreover, working conditions play a critical role in shaping workers' experiences and opinions. In sectors like ridesharing, interactions with customers can be highly stressful, with digital platform workers reporting that their jobs are sometimes perceived as dangerous. To achieve sufficient income, many are forced to work long hours, leading to exhaustion. This pressure is compounded by the algorithms that govern their work. These digital tools prioritise efficiency and speed, often at the expense of workers' wellbeing, as they push workers to take on more tasks in less time. Those who attempt to prioritise their health, by taking breaks or choosing safer routes, are often penalised by the system as such behaviours are seen as reducing productivity. This is where digital technologies and innovation come into play. They are a double-edged sword, offering greater flexibility but also making tasks more unpredictable and demanding, resulting in immediate consequences for workers’ mental and physical health.

In terms of physical health, the challenges are just as significant. The ambiguous employment status of many platform workers, straddling the line between self-employment and temporary, on-demand work, often leaves them without access to basic protections like healthcare. Without formal employment contracts, these workers are typically not entitled to benefits like paid sick leave or employer-provided healthcare, exposing them to various health risks. This precarious status creates barriers to maintaining consistent healthcare routines, leaving workers to manage both minor and serious health issues on their own. As financial instability forces workers to prioritise immediate needs, preventive care and proper self-care often fall by the wayside.

Additionally, the working conditions facilitated by digital technologies have a profound impact on physical health. The algorithms used to assign tasks, especially in sectors like delivery and ridesharing, often prioritise fast completion times, neglecting to consider external factors, such as extreme weather conditions, or the need for breaks. This results in a physically demanding work environment, where long hours and constant motion can lead to exhaustion and injury. At the same time, other types of platform work, such as those in more desk-based and sedentary roles, expose workers to different health risks, including musculoskeletal problems from prolonged inactivity. Our analysis of the content suggests that

[15] See for example, EU-OSHA (2022). Digital platform work and occupational safety and health: overview of regulation, policies, practices and research. Available at: https://osha.europa.eu/en/publications/digital-platform-work-and-occupational-safety-and-health-overview-regulation-policies-practices-and-research

technological innovation has created two general categories of physical strain between platform workers: one characterised by sedentary, desk-based work, and the other by physically intensive tasks that require prolonged exertion. Both types of work carry long-term health risks, underscoring the need for better protections and regulations that address the diverse spectrum of risks associated with platform work.

As noted in the analysed content, discussions about legislation often focus on the right to disconnect, a policy seen as essential in preventing burnout and reducing psychological strain. This right would allow workers to disengage from work-related tasks outside of designated hours, providing them with much-needed mental relief. Moreover, calls for stronger legislation also include demands for fairer compensation and social dialogue, with many workers advocating for the ability to unionise and collectively bargain for better working conditions. These efforts, however, face significant resistance, particularly in sectors like food delivery, where companies often oppose the formation of unions.

Training and skills development are also key areas of concern, as workers must frequently adapt to new technologies, especially in fields where AI plays an increasing role. While AI and other digital innovations offer some benefits in terms of efficiency and flexibility, they also introduce greater unpredictability into workloads, further destabilising an already precarious labour market.

In conclusion, the analysis of content related to digital platform work in digital media reveals that digital platform workers face numerous challenges that significantly impact both their mental and physical health. The precarious nature of their work – marked by financial instability, lack of benefits, and inconsistent working conditions – leaves them in a constant state of vulnerability. The interplay between employment status, wages, and working conditions fosters feelings of anxiety, exhaustion, and isolation, while the lack of access to adequate healthcare only worsens these issues. On a final note, it is worth to highlight that in spite of the reported poor working conditions of digital platform workers, the discussion around OSH-related topics appears to be relatively limited. Only slightly more than 3,000 out of more than 46,500 pieces of information collected and analysed in this study could be labelled as ‘OSH outcomes’, which can allow to conclude that ‘getting OSH on the agenda’ as part of the discussion on working conditions is a difficult task.

3.4 Focus on X

The analyses presented in the previous sections (3.2 and 3.3) focused exclusively on tagged content. However, it is worth examining the untagged content as well, or at least a significant portion of it. Since the majority of untagged content was predominantly published on X (70.2% of the untagged mentions), we decided to limit the analysis to that specific social media platform also to ensure that this activity relied on a similar set of data (content).

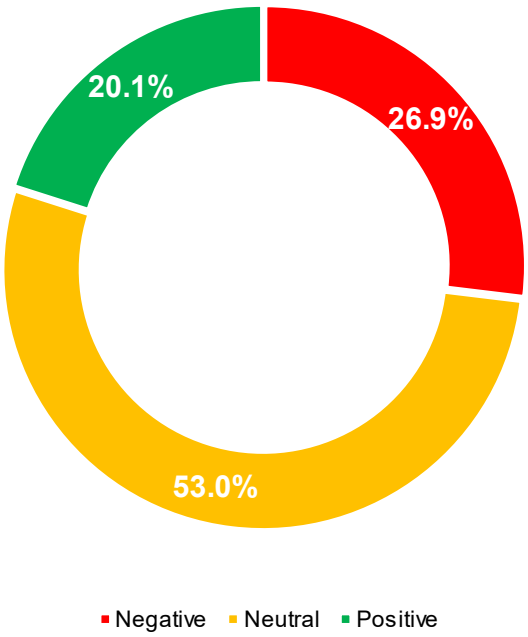
We performed a sentiment analysis on 22,950[16] tweets and retweets using VADER[17] (Valence Aware Dictionary and sEntiment Reasoner), a lexicon and rule-based model specifically designed to capture sentiment in social media text. VADER assigns a sentiment score – positive, negative, or neutral – based on the intensity and polarity of words used in short, informal text formats like tweets. This model is particularly effective for social media due to its ability to handle slang, emoticons, and punctuation that influence sentiment expression. Following the automated analysis, the sentiment attribution was validated by an analyst who manually reviewed the individual social media posts to ensure the accuracy of the model’s output.

After validating the model (which performed well), the analyst reviewed the content and, taking into account the sentiment analysis, extracted key qualitative insights for the research. The key findings from both the qualitative and quantitative analyses are outlined below.

[16] It is important to consider that some tweets reference the topic only briefly, providing minimal context or detail for the analysis. These mentions suggest a peripheral engagement with the broader discussion surrounding the issue.

[17] Hutto, C.J. & Gilbert, E.E. (2014). VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text. Eighth International Conference on Weblogs and Social Media (ICWSM-14). Ann Arbor, MI, June 2014.

Figure 22: Sentiment analysis of pieces of information collected on X



Source: Authors' elaboration based on the overall valid mentions collected

The sentiment analysis of X data (Figure 22) revealed 22,950 observations, divided into 6,179 with negative sentiment (26.9%), 4,608 with positive sentiment (20.1%), and 12,163 with neutral sentiment (53.0%).

Focusing on the characteristics of the X users, a significant number of the analysed tweets come from individuals actively involved in digital platform work. These individuals primarily express concerns about hardships, marginalisation, and poverty. Additionally, even those who do not directly identify as digital platform workers speak out against the exploitation of these workers and call for political and social reforms.

Regarding the negative sentiments, most tweets describe digital platform work as a type of employment that enables the exploitation of workers. Many comments highlight issues of underpayment, lack of protections, and negative impacts on the job market.

Some posts also claim that digital platform work, especially in food and goods' delivery, contributes to personal laziness, making it harder for people to manage everyday tasks like grocery shopping and cooking. It is notable that most negative tweets come from the United States, where blame is chiefly aimed at government and political institutions. Many believe that digital platform work is damaging to both society and the job market. India is frequently mentioned as well, with many tweets referencing Zomato, a service that offers restaurant reviews, menu information, and food delivery services. Founded in India, Zomato operates as one of the leading food delivery and restaurant review services in the country. It is active in over 500 cities across India.

In contrast, tweets reflecting positive sentiments mainly focus on videos, articles, conferences, and books denouncing unfair working conditions in digital platform work, covering both news and economic topics. Other comments discuss recent changes in laws aimed at improving workers' rights in this field. This indicates that even positive comments about the digital labour platform economy are often linked to calls for better protection for these workers. The remaining observations mostly include promotional messages about new job opportunities and cryptocurrency and decentralised finance partnerships. Few workers also express enthusiasm about the flexibility that digital platform work offers. Many appreciate

the ability to choose their own hours and work from various locations, which can be especially appealing for those balancing multiple responsibilities or pursuing personal interests alongside their jobs.

Ultimately, observations characterised by neutral sentiments relate to news articles discussing the status of workers in digital platform work. The issues analysed primarily focus on the recognition and protection of the rights of workers engaged in digital platform work, training and support programmes aimed at improving working conditions, and updates on legislative regulations regarding digital platform work. Examples include proposed legislation in Karnataka, Massachusetts and California.

These neutral comments provide a broad overview of the current landscape of the digital labour platform economy, addressing a range of topics from ongoing research efforts to evolving regulations aimed at improving protection for workers. They also highlight the ongoing dialogue around the benefits and challenges of digital platform work, suggesting that while there is room for improvement, the conversation continues to evolve as stakeholders seek to navigate this dynamic field.

In conclusion, while the bulk of positive sentiment tweets relate to institutional actions aimed at reinforcing workers' rights, other than advertising or promotional ones, an interesting share of these comments focus on the gains in working flexibility and work-life balance. On the other hand, negative tweets concern both problematic working conditions on digital platforms and, enlarging the debate, the potential challenges related to the latter on society as a whole. In line with this red thread, the focus centres on workers' conditions and the trade-offs between gains and loses from the expansion of digital platform work at the societal level. The neutral tweets mainly relate to discussions and articles that investigate the subject. They also cover institutional actions aimed at regulating this emerging sector.

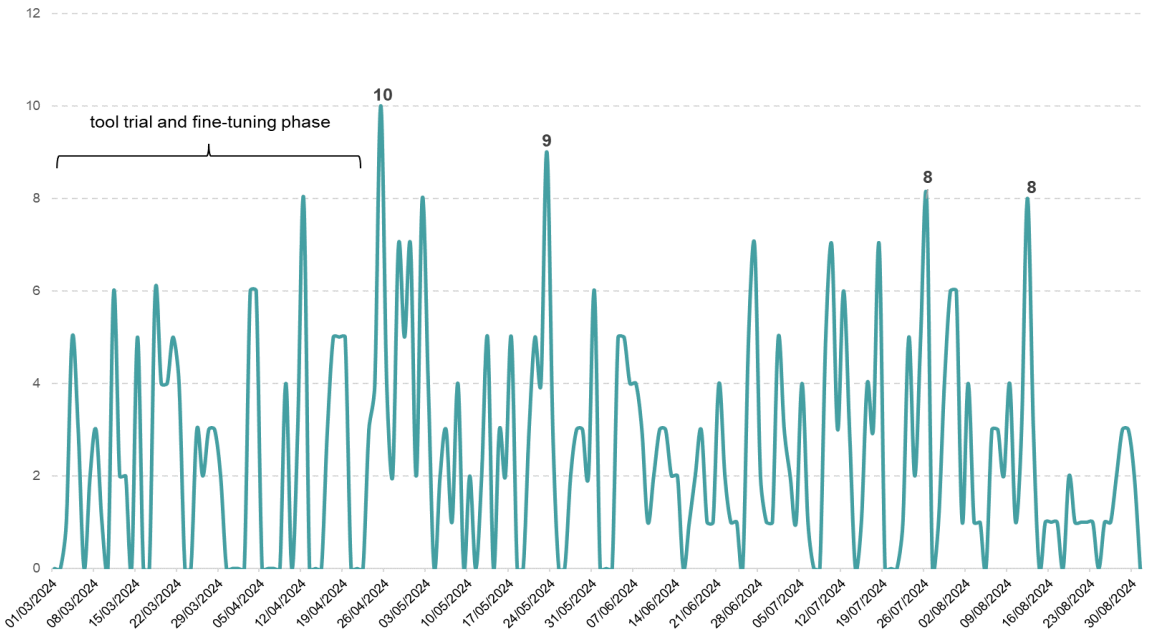
4 Focus on the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC)

Our research also included the coverage of the social media accounts of EU-OSHA, focusing on the topic of digital platform work within the campaign ‘Safe and healthy work in the digital age 2023–2025’. To identify relevant content, we used the following keywords: safe and healthy work in the digital age, healthy workplaces campaigns, healthy workplaces campaign, #EUhealthyworkplaces and lavoro sano e sicuro nell'era digitale. From the corpus of collected content, we extracted 450 pieces of content specifically related to the campaign, most of which were in English, with a smaller proportion in Italian[18]. In this section, we present the key findings from this analysis. In the initial phase (tool trial and fine-tuning), we had already gathered content since the monitoring of EU-OSHA’s accounts began immediately, even before the project's complete operational phase.

The content collected about the campaign followed a sinusoidal pattern tied to a weekly cycle, with fewer mentions on weekends when less news is typically published (Figure 23).

[18] As mentioned in section 2.1.1, in this explorative study, we performed the web and social media listening and intelligence activity using English as the primary language to not "anchor" the analysis and the theoretical framework's definition and validation on a specific language potentially biased by its geographical use. We also used Italian as a second language to test the feasibility of this explorative exercise on a more circumscribed set of content, both geographically, culturally, and normatively. We replicate this approach also concerning the monitoring of the EU-OSHA 2023–2025 Healthy Workplaces Campaign.

Figure 23: Campaign trend



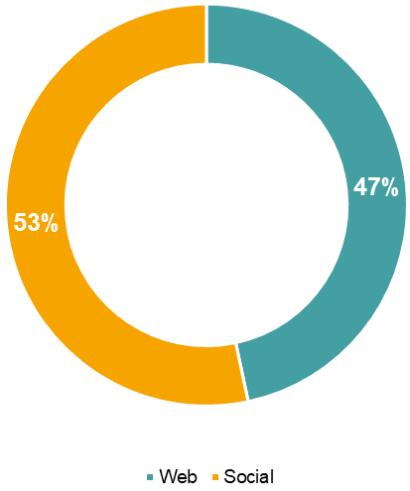
Source: Authors' elaboration based on the overall valid mentions collected

4.1 Virtual campaign places

In this section, the focus shifts to analysing the virtual campaign places to understand where discussions took place and how the campaign's messages were disseminated across various channels.

Figure 24 illustrates the division between web and social media content related to the campaign. The data show a relatively balanced split, with 53% of the content coming from social media platforms and 47% from web sources. This indicates that both channels play nearly equal roles in driving the conversation around the campaign, with a slight preference for social media content.

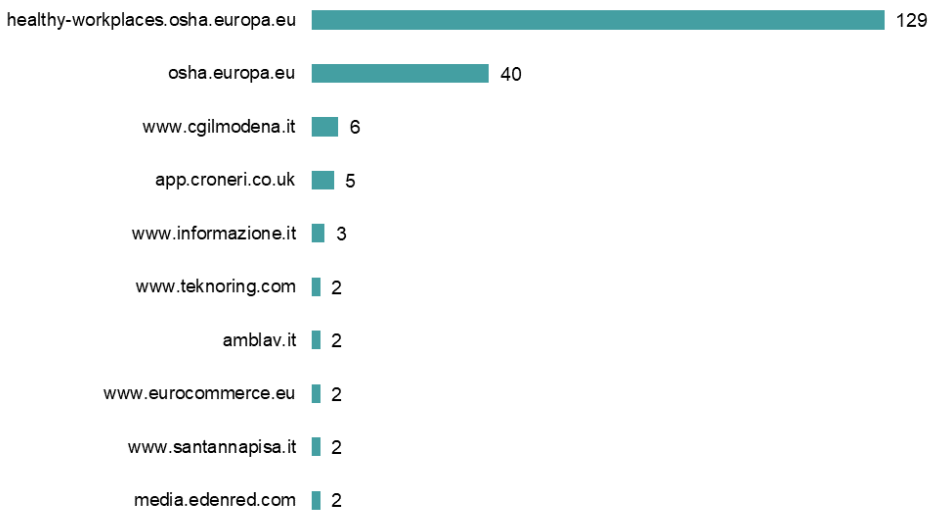
Figure 24: Campaign mention distribution by source



Source: Authors' elaboration based on the overall valid mentions collected

Figure 25 highlights that, as it could be expected, most of the web content is produced by healthy-workplaces.osha.europa.eu (129 mentions), the official campaign site, and osha.europa.eu (40 mentions) – the main website of EU-OSHA. These two websites dominate the content production regarding the campaign, while other sources such as cgilmodena.it (6 mentions), app.croneri.co.uk (5 mentions), and informazione.it (3 mentions) contribute to much smaller quantities. This underscores the central role of EU-OSHA's official channels in shaping the web-based conversation, with other sources having a more limited impact.

Figure 25: HWC top 10 websites



Source: Authors' elaboration based on the overall valid mentions collected

Figure 26 displays the word cloud related to the campaign.

Figure 26: Campaign word cloud

Source: Authors' elaboration based on the overall valid mentions collected

4.2 The main players of the campaign

This section focuses on the key players, that is, the social media accounts driving the conversation across platforms.

As shown in Figure 27, three of the top four accounts: europeanagencyforsafetyandhealthatwork (Facebook) (48 mentions), eu_osha (X) (44 mentions), and european-agency-for-safety-and-health-at-work (LinkedIn) (27 mentions), are official EU-OSHA accounts. This demonstrates the organisation's active and consistent campaign promotion across multiple platforms, ensuring broad visibility.

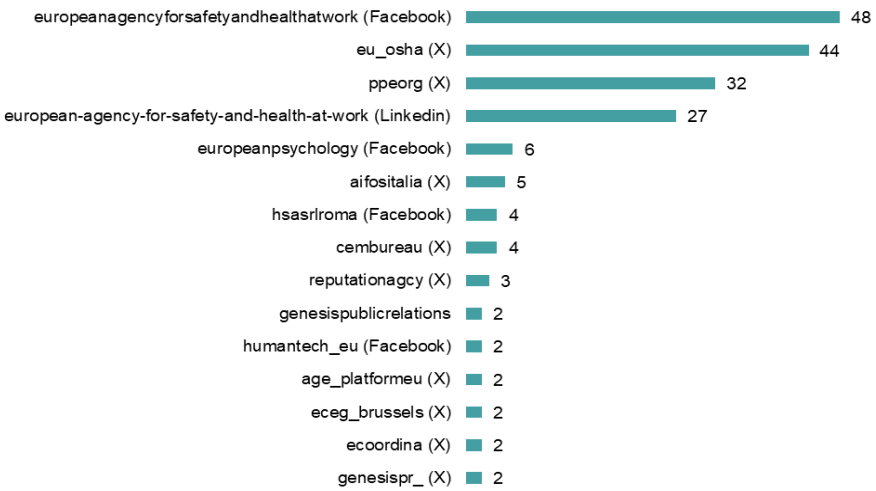
The campaign's official partners also play a vital role in extending its visibility. CEMBUREAU (X) (4 mentions), the European Cement Association, contributes as an official partner, along with AGE Platform Europe (X) (2 mentions), an EU-funded network of organisations advocating for older people's rights, and eceg_brussels (X) (2 mentions), representing the European Chemical Employers Group. These accounts highlight the involvement of industry and civil society in supporting the campaign's goals. However, it must be noted that the data does not highlight a significant contribution of unions or collective voice/association in promoting the diffusion of the campaign, except for the role played in Italy by the Italian General Confederation of Labour (CGIL) (see Section 5). It is worth mentioning that this result may be partially biased from the setting of our research. Indeed, the CGIL involvement in supporting the campaign emerged thanks to mentions collected through the Italian keywords. Thus, to achieve more detailed monitoring of the online campaigns, the web and social media listening monitoring should include (in terms of keywords and tags) the more common European languages, especially when Europe constitutes the campaign's target.

Additionally, the media partner ppeorg (X) (32 mentions) is an active player in the conversation. As a media partner of EU-OSHA, PPE Media Ltd has significantly contributed to disseminating campaign information and amplifying its reach.

Finally, other contributors, such as humantech_eu (Facebook) (2 mentions), representing the Human Tech project funded by Horizon Europe, and ecordina (X) (2 mentions), a software for managing workplace safety, reflect the campaign's broader engagement with related areas, such as technology and innovation in workplace safety.

This structured involvement of official accounts, partners, and media actors highlights EU-OSHA's comprehensive approach to disseminating the campaign's messages across different social and professional networks.

Figure 27: Campaign top 15 social media accounts



Source: Authors' elaboration based on the overall valid mentions collected

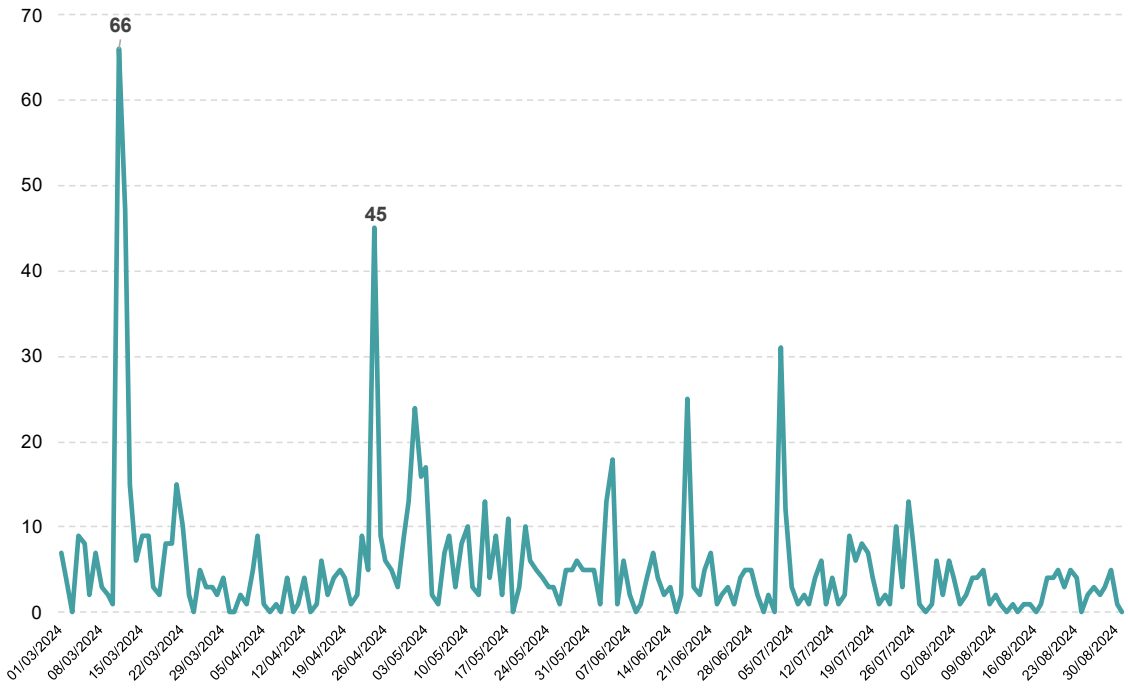
5 The Italian case

To gain more precise and context-specific insights into the discourse on digital platform work and OSH risks, we focused our analysis within a specific European Union Member State: Italy. Italian is one of the main official languages of the EU and is spoken predominantly in Italy only, enabling us to collect content highly relevant to the Italian context without interference from other linguistic regions.

Given the smaller volume of content in Italian compared to English, we adopted a different analytical approach. An analyst manually reviewed each Italian piece of content, thoroughly reading and assigning all relevant tags related to risk factors, contextual factors, and outcomes. This qualitative method ensured a higher level of precision in classifying the content, capturing nuanced insights that automated keyword tagging might overlook. However, this approach is limited by the smaller number of pieces of content it can process, contrasting with the broader but less precise automated approach used for the larger English dataset.

Between 1 March and 31 August, a total of 1,368 pieces of Italian content were collected, averaging approximately 7.4 pieces of content per day. The analyst validated 980 of these, resulting in an average of about 5.3 validated pieces per day, meaning approximately 71.7% of the collected contents were considered relevant and included in the analysis.

Figure 28: Trend of Italian mentions over time



Source: Authors' elaboration based on the overall valid mentions collected

Two significant peaks are observed in Figure 28, both corresponding to key developments in the approval process of the same EU directive aimed at improving working conditions for digital platform workers.

- The peak on 11 March (77 contents) corresponds to the Council of Europe's approval of the Platform Work Directive[19], which also regulates the use of algorithms. The directive focuses on

[19] For further details see: https://www.consilium.europa.eu/en/press/press-releases/2024/03/11/platform-workers-council-confirms-agreement-on-new-rules-to-improve-their-working-conditions/.

ensuring the correct classification of employment status and introduces regulations on algorithmic management in the workplace for the first time in the EU. This event significantly intensified discussions around legislation, employment status, and digital technologies, monopolising the debate during this period.

- The second peak on 24 April (44 contents) aligns with the European Parliament's final approval of the directive. This milestone further amplified the discourse, reinforcing the directive's central role in shaping conversations on digital platform work in Italy.

Figure 29: Thematic area distribution by the intensity of Italian online discussion frequency (number of mentions collected)

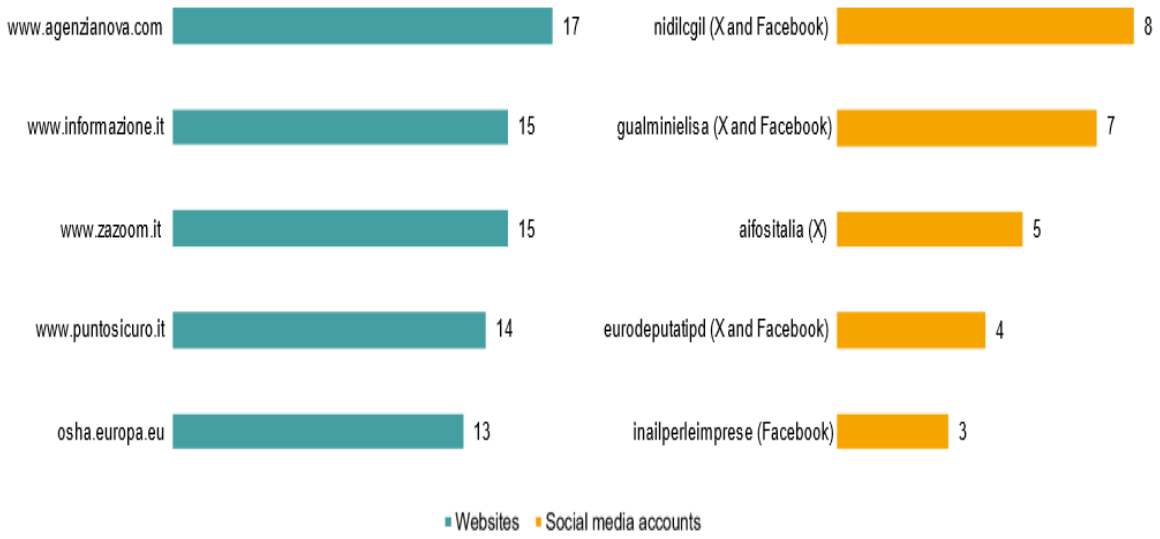
Source: Authors' elaboration based on the overall valid mentions collected

The dominance and impact of the directive during this period are clearly reflected in the distribution of the thematic areas, following the same pattern as in the case of the analysis of the English data. Legislation and regulations emerged as the most prominent thematic area (450 mentions), confirming that the directive dominated the discourse. The directive's focus on correct classification of employment status directly addresses issues of worker classification and rights, aligning with the thematic area of employment status (224 mentions). Its regulation of algorithmic management corresponds to digital technologies and innovation (245 mentions), introducing transparency and supervision into how algorithms are used in managing workers.

Other thematic areas, including worker rights and social dialogue (155 mentions), critical working conditions and control (104 mentions), physical health (98 mentions), salary and wages (93 mentions), and stress and mental health (72 mentions), were present but received less attention compared to the dominant themes driven by the directive. This suggests that, while broader issues affecting platform workers are acknowledged, legislative developments and technological considerations were the primary drivers of the discourse during this period, as evidenced by the thematic area distribution[20].

[20] Although the centrality of the legislation and regulation thematic area resembles the result presented before referring to the English keywords, we prefer not to directly compare the two sets of analyses (Italian and English) because of the difference in the number of mentions collected: a tiny universe (Italy) to a much larger one (English-language content).

Figure 30: Top 5 Italian websites and social media accounts



Source: Authors' elaboration based on the overall valid mentions collected

The green bar chart on the left-hand side in Figure 30 shows the websites from which we collected the most mentions. The top three are news outlets that primarily covered the EU directive on digital platform work. Following them are puntosicuro.it, which focuses on workplace safety and is a longstanding EU-OSHA media partner for the Healthy Workplaces Campaigns, and osha.europa.eu, the official website of EU-OSHA, both of which discussed the EU-OSHA campaign 'Safe and healthy work in the digital age 2023–2025'.

The orange bar chart on the right-hand side in Figure 30 illustrates the social media accounts with the highest mentions. The first is Nuove Identità di Lavoro (Nidil) CGIL, part of CGIL, Italy's largest trade union, representing atypical workers, including digital platform workers. Their content focused on meetings relating to the rights of these workers. Following on are Elisabetta Gualmini, an Italian Member of the European Parliament, and the Partito Democratico MEPs page, both discussing the EU directive on platform work. Associazione Italiana Formatori ed Operatori della Sicurezza (AiFOS), an Italian association for trainers and operators in workplace safety, and INAIL (Italy's National Institute for Insurance against Workplace Accidents) follow, both focusing on the EU-OSHA campaign.

Regarding the EU-OSHA campaign 'Safe and healthy work in the digital age 2023–2025', there were 93 Italian pieces of content related to this initiative, representing approximately 9.5% of the validated pieces. The campaign was primarily discussed through institutional channels such as osha.europa.eu, the official EU-OSHA website; puntosicuro.it, a specialised portal on workplace safety; and cgilmodena.it, the website of one of Italy's major trade unions. The most active social media accounts were also institutional, including INAIL; aifositalia, the Italian Association of Trainers and Safety Operators; and _amblav, the Workers' Environment Association. These findings indicate that the campaign was mainly circulated within professional and official networks. As expected, there was limited discussion of the campaign on private social media accounts.

5.1 Highlights from the Italian case

Our analysis of the Italian case revealed that the debate on digital platform work was predominantly shaped by the European Union directive aimed at improving working conditions for platform workers. Most of the content consisted of straightforward news reports on the directive's approval, supplemented

by commentary from politicians, trade unions, and organisations. In contrast to the English case, where we found active discussions among platform workers in online spaces, the private debate in Italy was far less visible. This suggests that the discourse in Italy was primarily driven by institutional and official voices, with limited grassroots engagement from the workers themselves.

Furthermore, legislative developments did not generate a debate centred on the health outcomes of platform work, which were at most mentioned only marginally. The influence of institutional actors was underscored by the significant presence of the EU-OSHA campaign 'Safe and healthy work in the digital age 2023–2025', within the collected news content. However, this campaign was promoted mainly through official channels and institutional platforms, with limited engagement on private social media accounts.

Based on a thorough review and analysis of the content, the analyst extracted the following insights.

- The public discourse in Italy echoed several concerns identified in the overall analysis. One recurring theme was that digital platform work has replaced more secure and stable forms of employment, leading to increased stress for workers dealing with unstable contractual arrangements that blur the lines between dependent and independent employment. Many sources acknowledged the uncertainty surrounding income earned in these jobs and the financial risks faced by workers as a result. Additionally, there were persistent concerns about the algorithmic management of platform work, particularly regarding their failure to account for necessary breaks, which could compromise worker safety and penalise less productive workers.
- Moreover, a wider debate emerged about the impact of AI on the future of work and the types of jobs that will exist. Within this context, questions were raised about whether digital platform jobs could provide adequate job security and uphold minimum health and safety standards.
- While the directive was the focal point, another event that received attention in the online debate was the accident that resulted in the death of a rider in early August 2024. This incident reignited discussions about the safety of digital platform workers, prompting Italian authorities to announce plans to strengthen protections for those employed in this sector. A second tragic incident involved a rider who was automatically dismissed after his death, further highlighting the concerns surrounding algorithmic management.
- In addition to institutional sources, a large portion of Italian content focused on reporting news related to the digital platform economy, including legal developments. One notable event mentioned in the online debate was the first favorable rulings for platform workers from the courts of Palermo, where riders in Sicily secured legal victories. These rulings underscore the growing recognition of the need for legal protection against the risks posed by AI in the workplace. At a conference held in June 2024, the need for workers to understand both the risks and opportunities associated with AI was emphasised.
- Another piece of news that emerged from the analysed content in Italy concerns the political elections in India. In these reports, the electoral debate touches on the gig economy, particularly due to the growing number of workers in the digital platform sector and the proposals for legislative solutions to regulate this workforce.
- Finally, an Istituto Nazionale di Statistica (ISTAT) report dated 21 February 2024, was frequently cited within the analysed content. Despite being published prior to the start of the study, it continues to resonate. The report provides a series of statistics on workers employed in the digital platform economy, contributing valuable data to ongoing discussions.

In summary, the analysis of the Italian discourse on digital platform work reveals a complex and evolving landscape. While the introduction of regulations, such as the European Union directive on platform work, represents a growing acknowledgment of the need to protect platform workers, significant concerns remain about the precarious nature of these jobs, the role of algorithms in compromising worker safety, and the limited representation of workers in the public debate.

6 Conclusions

In this exploratory study, the aim was to adapt a tool born in digital marketing, and web and social intelligence activities, for the purposes of social research. Specifically, the study analysed how the topic of digital platform work is treated on the web and social media, with a specific focus on OSH risks. The study also took advantage of the momentum created by the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC) 'Safe and healthy work in the digital age' to monitor all content posted on websites and social accounts related to the campaign.

Web and social intelligence enables the automatic collection, within a single software as a service digital platform, of all content of interest published online. This content is then catalogued and tagged for statistical analysis and quick queries, leveraging the capabilities of the software used to collect the data. This process of listening to and monitoring the web provides a real-time snapshot of what is being discussed online whether it is about companies, institutions, public figures or socially relevant topics.

Originally developed for digital marketing, web and social intelligence has been used for years by private companies to monitor their online reputation (web reputation), evaluate the performance of their communication strategies, and analyse those of competitors through benchmarks. More recently, these web and social media listening techniques have also found application in institutional, political and social research.

The research focused on four main objectives:

- identify the main sources of information;
- analyse the key themes;
- examine the ways in which digital platform work is discussed online; and
- assess the evolution of the debate over time.

The data collection phase was based on a set of about 50 keywords, in English and Italian, and took place between March and August 2024. In total, about 50,000 pieces of content were collected, two-thirds of which came from social media and the remaining third from websites.

The collected content was labelled according to the framework developed based on research findings carried out by EU-OSHA on the topic[21], which consisted of nine thematic areas grouped into three main groups: contextual factors, OSH risk factors and health impacts. This approach allowed about 50% of the content to be categorised (tagged). The remaining 50%, largely from social media, included short, generic, mostly text-based content. A more detailed analysis was conducted on the 23,000 pieces of content collected from X (formerly Twitter), through a dedicated focus.

A critical reflection on the methodology and the main results that emerged from the web and social intelligence activity will be presented in the next sections (6.1 and 6.2). This will be followed by a final section with several developed recommendations.

6.1 Analysis of web and social intelligence performance

The data collection system has proven to be highly efficient: over six months, more than 50,000 pieces of content were collected, almost all relevant to the research objectives. Only 7.5% of the content represented irrelevant noise, reducing the workload for moderation. This is undoubtedly a strength but simultaneously a weakness, as it is practically impossible to read and analyse all the collected mentions in detail. Consequently, extracting and sharing qualitative insights, which represents the true added value of data intelligence activities, is complex when analysing large amounts of data, especially considering the limited resources available for this specific study.

[21] EU-OSHA (2022). Digital platform work and occupational safety and health: overview of regulation, policies, practices and research. Available at: https://osha.europa.eu/en/publications/digital-platform-work-and-occupational-safety-and-health-overview-regulation-policies-practices-and-research

While this is the current situation, it is reasonable to expect that soon technological development, especially in the field of AI, will simplify the processing and analysis of large textual datasets immensely. Therefore, what may appear as a limitation today could become a significant opportunity tomorrow.

In this context, the framework developed in collaboration with EU-OSHA for the purpose of this study greatly facilitated the categorisation and labelling of content, a process that was executed entirely automatically. This framework also guided the subsequent qualitative and quantitative analyses. However, a disadvantage encountered is that the assigned tags were not always unique, with various content simultaneously falling into multiple thematic areas. This cross-referencing made it difficult to identify homogeneous datasets on which to focus more in-depth analyses.

Lastly, given the experimental nature of the research, the content collection was limited to two languages, English and Italian, despite the WebLive platform having no linguistic restrictions. English, being a global language, allowed the collection of content published in non-EU countries such as the United States, the United Kingdom, India and Australia. This was advantageous as it offered an international overview of topics of interest and enabled the assessment of different territorial sensitivities regarding OSH. However, this choice led to an underestimation of the topics of interest debated within the EU-27, as it excluded the languages of the most populous countries, such as German, French and Spanish.

Expanding the monitored languages certainly represents a significant opportunity but also entails increased costs. Involvement of native speakers is necessary both for setting up the data model (content acquisition and labelling) and for the qualitative analysis of content in the original language, should there be a preference not to translate the corpus into English beforehand.

Considering the above, the web and social intelligence activity has offered numerous benefits but has also highlighted some operational challenges. In Figure 31 below, a SWOT analysis[22] summarises the main conclusions discussed in this section.

Figure 31: SWOT analysis

Strengths • Collection of large number of content pieces • Low percentage of noise (7.5%) compared to relevant content (92.5%), reducing moderation effort • Content labelling guided by EU-OSHA's theoretical framework • Content collection in English provided international overview of topics of interest	**Weaknesses** • Impossibility of reading and analysing all collected mentions, leading to difficulty in extracting qualitative insights • Tags not unique, with content belonging simultaneously to multiple thematic areas
Opportunities • Technological development, particularly in AI, facilitates processing of large textual datasets • The WebLive platform allows for content acquisition in any language; advisable to extend monitoring to widely spoken EU languages such as German, French and Spanish	**Threats** • Increasing number of monitored languages raises costs, requiring support from native speakers for data model and qualitative-content analysis set-up in additional languages

[22] A SWOT analysis is a strategic planning tool used to identify and evaluate the strengths, weaknesses, opportunities, and threats involved in a project. It helps organisations understand internal and external factors that can affect objectives and outcomes, aiding in decision-making and strategy development.

6.2 Key takeaways

The following key takeaways summarise the main findings of our comprehensive analysis of digital platform work and its OSH implications as discussed on the web and social media.

- **Engaging with and amplifying discussions on occupational safety and health (OSH) within online discourse presents significant challenges.**

  Although this study focuses on digital platform work — an area where one might expect substantial relevance to OSH — the "space" devoted to it in the international online discourse is minimal. Only 12.9% of the tagged content pertains to the Outcome dimension of our theoretical framework, which covers OSH-related content. In contrast, discussions about digital platform work predominantly revolve around the Contextual factors and Intervening factors dimensions, accounting for 70.9% and 66.0% of the tagged content, respectively. The overall online discourse on digital platform work may have been influenced by the approval of new legislation during the timeframe of the study, which resulted in peaks of availability of content linked to the "Legislation and regulation" thematic area. The four notable peaks in data collection correspond to legislative and political developments in Europe, the US, Canada, and India, underscoring the critical role of the "Legislation and regulation" thematic area in shaping the international debate. While reliance on English limits the ability to deeply explore national or European-specific nuances, it broadens the analysis, enabling a more comprehensive assessment of the digital platform work discourse in online media at global level.

- **OSH is not a stand-alone topic in the online discourse surrounding digital platform work.**

  The findings indicate that content related to the Outcome dimension is rarely discussed in isolation; it is typically addressed alongside both of the other dimensions. A multiple-tag analysis shows that only about 20% of Outcome dimension mentions are single-tagged, compared to roughly 40% for the other two theoretical dimensions. This suggests that OSH rarely serves as the primary focus; rather, it is "brought in" the online discussions through connections to other thematic areas. While this highlights the secondary role of OSH, examining the interplay between dimensions and thematic areas provides valuable insights. OSH topics are more commonly featured in content that takes a global perspective on digital platform work. Notably, half of the Outcome dimension mentions include all three dimensions. Within these discussions, themes linking legislative and regulatory issues with the salary and wage are particularly prominent. These themes dominate for both stress and mental health and physical health topics. This aligns with our theoretical framework, where online discourse frequently frames OSH as a consequence of inadequate economic remuneration, addressed primarily through legislative measures. Regarding OSH awareness, the exploratory findings — while subject to the study's limitations — suggest that OSH must often gains visibility by "piggybacking" on other dominant online topics. Furthermore, the analysis highlights limited coverage of themes related to critical working conditions and control. Cross-mentions between these areas are especially scarce, despite the well-documented close connection between them in the literature. Enhancing communication strategies that explicitly link these topics to OSH could help strengthening their visibility and integration into the broader discourse.

- **Stress and mental health are more prominent in the online discourse about digital platform work**.

  The findings reveal that stress and mental health concerns dominate discussions on health outcomes in the context of digital platform work, far outweighing mentions of physical health. Despite potential physical health risks associated with platform work, the online discourse predominantly emphasizes mental health challenges, such as stress, anxiety, and burnout. An analysis of the thematic interconnections shows that both Stress and mental health and Physical health are strongly linked to the themes of "Legislation and regulation" and "Salary and wage". Interestingly, "Working rights and social dialogue", though frequently discussed in relation to digital platform work, rarely intersects with the Outcome dimension. This suggests a disconnection between the labour rights debate and OSH issues in this context.

- **Social media: prominence of OSH in social media discussions on digital platform work.**

  Adopting an integrated approach that combines quantitative and qualitative analysis provides a more nuanced view of digital platform work discussions. By examining both formal, institutional web-based discussions and informal, grassroot social medias discourse, the study captured a holistic perspective. Qualitative and sentiment analyses, focusing on social media mentions (e.g. posts on X), revealed a notable divergence from broader web discourse. On social media, issues such as (critical) working conditions and control, along with related Physical health and Stress and mental health outcomes, take the centre stage. Even in cases of neutral or positive sentiment, discussions frequently emphasise – in addition to the importance of the "Legislation and regulation" issues - raising awareness of current and future challenges in digital platform work. Negative sentiments on social media often highlight concerns about underpayment, lack of protections, and the perception that digital platform work fosters exploitation. Numerous posts, including tweets from digital platform workers, describe hardships, marginalization, and poverty. Both workers and non-workers frequently advocate against the exploitation of digital platform workers. At the same time, the findings show strong support for legislative changes and social reforms aimed at improving workers' rights and protections. Positive posts often praise recent laws and regulations designed to enhance conditions for digital platform workers, reflecting a shared demand for structural improvements in the digital platform economy.

6.3 Looking at the future

The growing relevance of digital communication and the widespread use of social platforms necessitate the adoption of advanced methodologies for monitoring and analysing unstructured data, such as textual content. For this reason, web and social intelligence tools are gaining increasing importance to monitor, analyse, and respond to public debates and discussions, social trends, and misinformation combat. This contributes not only to defining communication strategies but also to building more informed and responsive policies and is therefore of great support to policy-makers and – in the field of OSH – to the OSH community at large.

In this study, the use of web and social intelligence as an analytical tool represents an important step toward a broader and more in-depth knowledge process. This tool made possible to collect and consequently interpret key data from the web and social media, providing a detailed view of what (and how) OSH-related topics on digital platform work are discussed and perceived in the online media. However, to turn these data into practical and useful insights, and ideally convert knowledge into action, robust collaboration among analysts, researchers and communication experts is required, in addition to the increased engagement of either the OSH community at large or influencers and industry leaders to create a multiplier effect to promote OSH-related messages and change.

Appendix. Detailed overview of the methodology of the platform used

Identified keywords

English keywords

Group 1

MAIN keywords
'Digital platform work', 'online platform work', 'platform economy', 'digital labour platform', 'digital labour platforms', 'digital platform worker', 'digital platform workers', 'online platform workers', 'online platform worker'

The first group of keywords collects content closely related to digital platform work.

Group 2

MAIN keywords
'Platform work', 'platform worker', 'platform workers'

AND keywords
'Working conditions', 'employment conditions', 'contractual relations', 'employment status', 'employment relations', 'platform as employer', 'job security', 'wage', 'working time', 'work intensity', 'speed pressure', 'tight deadlines', 'no breaks', 'repetitive work', 'task autonomy', 'algorithmic management', 'non-conventional workplace', 'work environment', 'physical environment', 'telework', 'home-based work', 'career development', 'career progression', 'access to training', 'worker voice', 'worker participation', 'representation', 'collective organisation', 'collective bargaining', 'collective rights', 'collective agreements', 'social protection', 'social protection coverage', 'social security', 'income support measures', 'income replacement benefits', 'sickness benefits', 'unemployment benefits', 'job satisfaction', 'occupational health and safety', 'health and safety', 'physical risk', 'physical health', 'psychosocial risk', 'psychological risk', 'psychosocial issues', 'psychological health', 'mental health', 'new and emerging risks', 'dangerous substances', 'physical agents', 'posture', 'noisy workplace', 'dirty work', 'visual strain'

This second group uses the words 'platform work', 'platform worker' and 'platform workers' in combination with a series of 'AND keywords'. The three MAIN keywords included in this group were not included in the first group because they would lead to the collection of out-of-context content without 'AND keywords' specification (e.g. 'platform work' without 'AND keywords' would collect content containing this phrase: how does this platform work? which is not relevant to our topic of interest).

Group 3

MAIN keywords
'Gig economy', 'gig work', 'gig job', 'gig worker', 'gig workers', 'uber economy'

With the keywords of Group 3, we broaden the search to the topic of the gig economy and gig workers.

Group 4

MAIN keywords
'Healthy Workplaces Campaign', '#EUHealthyworkplaces', 'safe and healthy work in the digital age'

The fourth group of keywords collects content related to the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC), 'Safe and healthy work in the digital age'.

Group 5

MAIN keywords
'Sharing economy', 'peer economy', 'crowd economy', 'collaborative economy', ' participative economy', 'on demand economy'

The keywords of Group 5 can address topics of interest tangential to the theme of digital platform work.

Italian keywords

Group 1

MAIN keywords
'Lavoro piattaforma digitale'~4, 'lavoratore piattaforma digitale'~4, 'lavoratori piattaforma digitale'~4, 'lavoro piattaforme digitali'~4, 'lavoratori piattaforme digitali'~4, 'lavoratore piattaforme digitali'~4, 'lavoratrici piattaforme digitali'~4, 'lavoratrici piattaforma digitale'~4

This first group of keywords collects content closely related to digital platform work.

We used a proximity operator for the search ('~') to adapt our search to the structure of the Italian language. This makes it possible to collect content with N words separating the main keywords (e.g. with the job 'work digital platforms'~4, we collect content that presents the terms work through digital platforms, work with digital platforms, work of digital platforms, work through digital platforms, etc.).

Group 2

MAIN keywords
'Gig economy', 'digital platform work', 'lavoro su piattaforma digitale', 'lavoro mediante piattaforma digitale'; 'piattaforma di lavoro digitale', 'piattaforme di lavoro digitale'

Group 2, as the previous, aims to collect content closely related to digital platform work. However, in this case, unlike in Group 1, we did not use logical operators but selected a set of word groups specifically related to our theme. English terms are present as they are commonly used in the Italian language.

Group 3

MAIN keywords
'Healthy workplaces campaign', 'lavoro sano e sicuro nell'era digitale', '#EUHealthyWorkplaces'

The third group of keywords collects content related to the EU-OSHA 2023–2025 Healthy Workplaces Campaign (HWC), 'Safe and healthy work in the digital age'.

We then set two sets of keywords to explore the topic of algorithmic management. For the Italian language, we used 'management algoritmico' and 'algorithmic management' as the MAIN keywords. We set 'algorithmic management' as the MAIN keyword for the English language.

It should be noted that WebLive has been set up to allow distinguishing between content strictly related to digital platform work and content associated with algorithmic management at all times.

Tagging strategy structure

Thematic area: Legislation and regulations

'Legislation' OR 'legislations' OR 'law' OR 'laws' OR 'regulation' OR 'regulations' OR 'legal' OR 'policies' OR 'policy' OR 'act' OR 'acts' OR 'bill' OR 'bills' OR 'statute' OR 'statutes' OR 'ruling' OR 'rulings' OR 'ordinance' OR 'ordinances' OR 'mandate' OR 'mandates' OR 'legal framework' OR 'legal frameworks' OR 'policy change' OR 'policy changes' OR 'government regulation' OR 'government regulations' OR 'law enforcement' OR 'decree' OR 'decrees' OR 'bylaw' OR 'bylaws' OR 'directive' OR 'directives' OR 'legislative measure' OR 'legislative measures' OR 'regulatory measure' OR 'regulatory measures' OR 'enactment' OR 'enactments' OR 'jurisprudence' OR 'case law' OR 'case laws' OR 'judicial decision' OR 'judicial decisions' OR 'top court' OR 'supreme court' OR 'high court' OR 'court of appeal' OR 'constitutional law OR 'constitutional laws' OR 'parliamentary act' OR 'parliamentary acts' OR 'social reform' OR 'social reforms' OR 'policy reform' OR 'policy reforms' OR 'legislative reform' OR 'legislative reforms' OR 'economic reform' OR 'economic reforms' OR 'structural reform' OR 'structural reforms' OR 'welfare reform' OR 'welfare reforms' OR 'labor reform' OR 'labor reforms' OR 'labour reform' OR 'labour reforms' OR 'gig work reform' OR 'platform work reform' OR 'gig work reforms' OR 'platform work reforms'

Thematic area: Salary and wages

'Salary' OR 'salaries' OR 'wage' OR 'wages' OR 'compensation' OR 'compensations' OR 'earnings' OR 'remuneration' OR 'remunerations' OR 'income' OR 'incomes' OR 'hourly rate' OR 'hourly rates' OR 'pay

scale' OR 'pay scales' OR 'paycheck' OR 'paychecks' OR 'salary increase' OR 'salary increases' OR 'wage gap' OR 'wage gaps' OR 'wage increase' OR 'wage increases' OR 'salary negotiations' OR 'compensation package' OR 'compensation packages' OR 'fair pay' OR 'income inequality' OR 'income inequalities' OR 'hourly wage' OR 'hourly wages' OR 'base salary' OR 'base salaries' OR 'gross pay' OR 'gross pays' OR 'net pay' OR 'net pays' OR 'overtime pay' OR 'benefit package' OR 'benefit packages' OR 'commission' OR 'commissions' OR 'profit sharing' OR 'take-home pay' OR 'take-home pays' OR 'minimum wage' OR 'minimum wages' OR 'living wage' OR 'living wages' OR 'pay rate' OR 'pay rates' OR 'wage rate' OR 'wage rates' OR 'salary structure' OR 'salary structures' OR 'annual salary' OR 'annual salaries' OR 'monthly salary' OR 'monthly salaries' OR 'weekly pay' OR 'weekly pays' OR 'salary grade' OR 'salary grades' OR 'salary band' OR 'salary bands' OR 'merit pay' OR 'merit pays' OR 'financial compensation' OR 'financial compensations' OR 'job pay' OR 'job pays' OR 'total earnings' OR 'total incomes' OR 'base pay' OR 'base pays' OR 'pay range' OR 'pay ranges' OR 'wage scale' OR 'wage scales' OR 'performance pay' OR 'performance pays' OR 'salary benchmark' OR 'salary benchmarks' OR 'market salary' OR 'market salaries' OR 'competitive salary' OR 'competitive salaries' OR 'underpaid' OR 'underpayment' OR 'low salary' OR 'low salaries' OR 'low wage' OR 'low wages' OR 'poor compensation' OR 'poor compensations' OR 'unfair pay' OR 'unfair pays' OR 'income disparity' OR 'income disparities' OR 'wage theft' OR 'insufficient pay' OR 'insufficient pays' OR 'inadequate salary' OR 'inadequate salaries' OR 'below market rate' OR 'below market rates' OR 'unequal pay' OR 'unequal pays' OR 'stagnant wages' OR 'stagnant salary' OR 'stagnant salaries' OR 'wage suppression' OR 'pay cut' OR 'pay cuts' OR 'salary cut' OR 'salary cuts' OR 'wage insecurity' OR 'wage insecurities' OR 'income insecurity' OR 'income insecurities' OR 'salary adjustment' OR 'salary adjustments' OR 'wage adjustment' OR 'wage adjustments' OR 'equitable pay' OR 'equitable pays' OR 'pay equity' OR 'salary equity' OR 'equitable compensation' OR 'livable wage' OR 'livable wages' OR 'pay fairness' OR 'fair pay' OR 'fair wage' OR 'wage fairness' OR 'pay parity' OR 'wage parity' OR 'salary parity' OR 'compensation fairness' OR 'pay justice' OR 'wage justice' OR 'salary justice' OR 'remuneration fairness' OR 'earnings fairness' OR 'fair compensation' OR 'pay transparency' OR 'wage transparency' OR 'salary transparency' OR 'compensation transparency' OR 'earnings transparency' OR 'remuneration transparency' OR 'income justice' OR 'pay standards' OR 'wage standards' OR 'salary standards' OR 'compensation standards' OR 'earnings standards' OR 'remuneration standards' OR 'income standards' OR 'low paid job' OR 'low paid jobs' OR 'work poverty' OR 'working poor' OR 'in work poor' OR 'in-work poor' OR 'in-work poverty' OR 'gender pay gap' OR 'gender inequality' OR 'poorly paid'

Thematic area: Worker rights and social dialogue

'Worker rights' OR 'workers rights' OR 'worker right' OR 'workers right' OR 'labor rights' OR 'labor right' OR 'labour rights' OR 'labour right' OR 'employee rights' OR 'employees rights' OR 'employee right' OR 'employees right' OR 'fair labor' OR 'fair labour' OR 'fair work' OR 'labor union' OR 'labor unions' OR 'labour union' OR 'labour unions' OR 'collective bargaining' OR 'collective bargainings' OR 'worker protections' OR 'worker protection' OR 'workers protections' OR 'workers protection' OR 'employment rights' OR 'employment right' OR 'employments rights' OR 'employments right' OR 'collective bargaining agreement' OR 'collective bargaining agreements' OR 'labor advocacy' OR 'labour advocacy' OR 'labor advocacies' OR 'labour advocacies' OR 'worker benefits' OR 'worker benefit' OR 'workers benefits' OR 'workers benefit' OR 'labor standards' OR 'labor standard' OR 'labour standards' OR 'labour standard' OR 'employee protections' OR 'employee protection' OR 'employees protections' OR 'employees protection' OR 'workplace rights' OR 'workplace right' OR 'workplaces rights' OR 'workplaces right' OR 'labor disputes' OR 'labor dispute' OR 'labour disputes' OR 'labour dispute' OR 'union representation' OR 'union represent' OR 'unions represent' OR 'union representatives' OR 'worker solidarity' OR 'workers solidarity' OR 'worker solidarities' OR 'workers solidarities' OR 'employment standards' OR 'employment standard' OR 'employments standards' OR 'employments standard' OR 'trade union' OR 'trade unions' OR 'union rights' OR 'union right' OR 'labor movement' OR 'labour movement' OR 'worker representation' OR 'workers representation' OR 'labor council' OR 'labour council' OR 'worker council' OR 'workers council' OR 'employee association' OR 'employees association' OR 'worker association' OR 'workers association' OR 'labor negotiation' OR 'labour negotiation' OR 'social dialogue' OR 'social dialogues' OR 'worker participation' OR 'workers participation' OR 'workplace equality' OR 'labor equality' OR 'labour equality' OR 'collective rights' OR 'Collective agreements' OR 'social protection' OR 'Unemployment benefits' OR 'labor negotiations' OR 'labour negotiations' OR 'unemployment insurance' OR 'payroll subsidies' OR 'payroll subsidie' OR 'redundancy payment' OR 'redundancy payments' OR

'employment protection' OR 'decent work' OR 'retirement benefits' OR 'income support' OR 'sickness benefits' OR 'sickness benefit' OR 'paid sick leave' OR 'accident insurance' OR 'healthcare stipends' OR 'dental insurance'

Thematic area: Training and skills development

'Training' OR 'skills development' OR 'upskilling' OR 'reskilling' OR 'vocational training' OR 'certification programs' OR 'online courses' OR 'e-learning' OR 'workshops' OR 'technical skills' OR 'soft skills' OR 'skill gaps' OR 'job training' OR 'employee development' OR 'career growth' OR 'talent development' OR 'competency building' OR 'skill enhancement' OR 'on-the-job training' OR 'learning opportunities' OR 'skill assessment' OR 'knowledge transfer' OR 'mentorship programs' OR 'career advancement' OR 'professional growth' OR 'training initiatives' OR 'continuous education' OR 'training programs' OR 'skill improvement' OR 'educational resources' 'access to training'

Thematic area: Digital technologies and innovation

'Algorithmic management' OR 'algorithmic governance' OR 'algorithmic control' OR 'data-driven management' OR 'automated decision-making' OR 'algorithmic decision-making' OR 'AI management' OR 'gig work technology' OR 'digital transformation' OR 'automation innovation' OR 'workplace automation' OR 'task automation technology' OR 'digital task management' OR 'automated management systems' OR 'artificial Intelligence workforce management' OR 'AI workforce management'

Thematic area: Stress and mental health

'Mental health' OR 'emotional well-being' OR 'stress' OR 'anxiety' OR 'depression' OR 'burnout' OR 'job strain' OR 'emotional exhaustion' OR 'work-related stress' OR 'psychological impact' OR 'work-life balance' OR 'occupational stress' OR 'chronic stress' OR 'mental fatigue' OR 'emotional distress' OR 'psychosocial risks' OR 'workplace stress' OR 'mental well-being' OR 'employee wellness' OR 'psychological distress' OR 'mental strain' OR 'work-related anxiety' OR 'emotional strain' OR 'psychological well-being' OR 'stress-related illness' OR 'mental resilience' OR 'emotional resilience' OR 'work-induced stress' OR 'mental overload' OR 'psychosomatic symptoms' OR 'emotional health' OR 'well-being initiatives' OR 'occupational burnout' OR 'stress relief' OR 'mental recovery' OR 'emotional fatigue' OR 'occupational fatigue' OR 'psychological fatigue' OR 'stress reduction' OR 'psychological trauma' OR 'psychological safety' OR 'social isolation'

Thematic area: Physical health

'Physical health' OR 'fatigue' OR 'physical exhaustion' OR 'health issues' OR 'occupational health' OR 'health and well-being' OR 'workplace fatigue' OR 'sleep deprivation' OR 'stress management' OR 'physical ailments' OR 'health consequences' OR 'physical stress' OR 'physical strain' OR 'work-induced fatigue' OR 'chronic fatigue' OR 'musculoskeletal disorders' OR 'musculoskeletal disorder' OR 'noisy workplaces' OR 'noisy workplace' OR 'work-related illness' OR 'physical risk' OR 'physical risks' OR 'workplace accidents' OR 'workplace accident' OR 'visual strain' OR 'heatwave' OR 'work related disease' OR 'workplace injury' OR 'workplace injuries' OR 'cardiovascular' OR 'extreme heat' OR 'health problems' OR 'chronic disease'

Thematic area: Employment status

'Employment status' OR 'employment type' OR 'job status' OR 'job type' OR 'full-time employment' OR 'part-time employment' OR 'temporary employment' OR 'permanent employment' OR 'contract employment' OR 'freelance work' OR 'self-employment' OR 'internship' OR 'apprenticeship' OR 'casual employment' OR 'fixed-term contract' OR 'seasonal employment' OR 'probationary period' OR 'contingent work' OR 'on-call employment' OR 'hourly employment' OR 'salaried employment' OR 'employment category' OR 'employment relationship' OR 'occupational status' OR 'employment position' OR 'job classification' OR 'work contract' OR 'employment agreement' OR 'employment terms' OR 'employee status' OR 'staff status' OR 'workforce status' OR 'job role' OR 'employment record' OR 'employment history' OR 'employment tenure' OR 'part-time worker' OR 'part-time workers' OR 'part time worker' OR 'part time workers' OR 'full-time worker' OR 'full-time worker' OR 'full-time workers' OR 'full time worker' OR 'full time workers' OR 'contract worker' OR 'contract workers' OR 'temporary worker' OR 'temporary workers' OR 'seasonal worker' OR 'seasonal workers' OR 'freelancer' OR 'independent

contractor' OR 'contingent worker' OR 'project-based employment' OR 'work on demand' OR 'work on-demand' OR 'precariat' OR 'zero hours contracts' OR 'zero hours contract' OR 'mini job' OR 'zero contract hours' OR 'minijob' OR 'minijobs' OR 'mini-jobs' OR 'marginal employment' OR 'involuntary part-time' OR 'involuntary part time' OR 'remote work' OR 'telework' OR 'shift work' OR 'home based work' OR 'home based worker' OR 'home based workers' OR 'non-conventional workplace' OR 'temp jobs'

Thematic area: Critical working conditions and control

'Long working hours' OR 'workload' OR 'poor working conditions' OR 'dangerous working conditions' OR 'extreme working conditions' OR 'unsatisfactory working conditions' OR 'job quality' OR 'quality of job' OR 'quality of jobs' OR 'professional isolation' OR 'work intensity' OR 'no breaks' OR 'without breaks' OR 'repetitive work' OR 'repetitive task' OR 'repetitive tasks' OR 'task autonomy' OR 'tasks autonomy' OR 'nudging' OR 'gamification' OR 'employee monitoring' OR 'employee monitorings' OR 'workforce surveillance' OR 'workforce surveillances' OR 'employee tracking' OR 'employee trackings' OR 'productivity monitoring' OR 'productivity monitorings' OR 'remote work monitoring' OR 'remote work monitorings' OR 'time tracking software' OR 'time tracking softwares' OR 'employee performance tracking' OR 'employee performance trackings' OR 'workplace monitoring' OR 'workplace monitorings' OR 'staff monitoring system' OR 'staff monitoring systems' OR 'activity monitoring' OR 'activity monitorings' OR 'workplace surveillance' OR 'workplace surveillances' OR 'employee productivity tool' OR 'employee productivity tools' OR 'time management software' OR 'time management softwares' OR 'employee oversight' OR 'employee oversights' OR 'workplace efficiency tracking' OR 'workplace efficiency trackings' OR 'monitoring software' OR 'monitoring softwares' OR 'digital employee tracking' OR 'digital employee trackings' OR 'activity tracking software' OR 'activity tracking softwares' OR 'business surveillance system' OR 'business surveillance systems' OR 'employee monitoring technology' OR 'discrimination' OR 'discriminations' OR 'labour exploitation'~3 OR 'work exploitation'~3 OR 'exploitation labour'~3 OR 'exploitation labor'~3 OR 'labor exploitation'~3 OR mistreatment OR exploitative OR alienating OR dehumanizing OR 'illegal working conditions' OR 'unfair working conditions' OR 'unlawful working conditions' OR 'wrong working conditions' OR 'illegal working condition' OR 'unfair working condition' OR 'unlawful working condition' OR 'wrong working condition' OR 'shameful working conditions' OR 'dangerous substances' OR 'dangerous substance' OR 'physical agents' OR 'work accidents' OR 'work accident' OR 'hazardous materials' OR 'hazardous material' OR 'work injury' OR 'work injuries' OR 'chemical hazards' OR 'chemical hazard' OR 'fall hazards' OR 'fall hazard' OR 'fall risk' OR 'fall risks' OR 'ergonomic risk' OR 'ergonomic risks' OR 'ergonomic hazard' OR 'ergonomic hazards'

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.

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