WORKING THROUGH DIGITAL PLATFORM EMPLOYMENT. THE ORGANISATIONAL MODEL AND THE CHARACTERISTICS OF THE PHENOMENON

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Abstract. Globalisation and digitalisation have profoundly transformed the configuration of the labour market, enabling the emergence of new organisational models. Digital platforms are the emblem of this change and challenge official statistics. Available statistics on workers involved in digital platform employment yield results that are not easily comparable due to methodological issues and the phenomenon's heterogeneous and relatively rare nature. Reflection on the measurement of digital platforms in terms of definitions and methodologies is the basis of the Handbook on Measuring Digital Platform Employment and Work published in 2023 in collaboration between OECD, ILO and the European Commission. In 2022, Eurostat promoted an experimental module on Digital Platform Employment and attached it to the Labour Force Survey. The module was voluntarily submitted in 2022 by 17 European countries, including Italy. The study aimed to test the methodology, definitions and questionnaire model to produce the first data on employment mediated by digital platforms, in view of an ad hoc module planned for 2026. The module collected data on the phenomenon's prevalence over the previous 12 months and the four weeks before the interview. The present paper introduces the specificity of the phenomenon, discusses methodological aspects related to its measurement, and presents the results of the DPE module concerning Italy, investigating the main profiles that emerge from the associations between the key variables associated with digital platform employment and other characteristics of individuals.

1. Labour Market Transformation

Advancements in information and communication technology (ICT), along with the emergence of cloud computing, artificial intelligence, and other innovations, have spurred the expansion of the digital economy. This transformation sees a growing reliance on digital channels for economic transactions and social interactions, affecting individuals and businesses.

Digitalisation has taken precedence in the 21st century labour market, driven by various forms of connectivity, interoperability, and georeferencing (Semenza, 2020). In recent years, digital platforms have epitomised this shift, serving as conduits for new services, business opportunities, and emerging economic and organisational models (Srnicek, 2016; Bonacini et al. 2020; Perani, 2022).

Online platform-mediated work stands out as a significant and innovative aspect of the contemporary labour market, representing one of the most discussed non-standard forms of employment. Our focus is on digital platform employment, which has emerged as a distinctive digital economy component, facilitating connections between businesses, clients, and workers through technological advancements. These platforms bridge workers and clients/consumers, offering transportation, delivery, cleaning, consulting, scheduling, and design services. This phenomenon led to the adoption of new work organisation models, radically changing work processes and patterns.

To some extent, digital platforms seem to benefit both workers and clients/customers, including enhanced flexibility, accessibility, and diversification of services. While they offer several advantages, such as improved labour market matching efficiency for workers, they also pose significant policy challenges.

In digital platforms, algorithmic management plays a pivotal role in workforce coordination. This involves using sophisticated algorithms to control work activities, make decisions, and evaluate performance (Beverungen et al., 2019; Flyverbom, 2019).

The policy challenges focus on managing precarious work, inadequate social protection, unfair competition, discrimination, and safeguarding fundamental rights in the digital labour market.

2. European Regulation

Algorithmic discrimination and contractual issues related to platform workers' rights have fuelled the debate, both at the national and European level, on the need for adequate regulation to protect this specific category of workers and make transparent the anomalies found in labour management.

In the European scenario, an attempt to meet the need for regulation in this area is the proposal for a Directive presented by the Commission in December 2021[1]. The Commission's proposal reached an agreement on the Council's general orientation during the session of June 2023. Negotiations with the European Parliament began in July 2023, culminating in an agreement reached on February 2024[2]. The regulation’s general objective is to increase platform workers' working conditions

[1]European Commission, Brussels, 9 December 2021, Proposal for a Directive of the European Parliament and of the Council on improving working conditions in platform work¸ COM(2021) 762 final 2021/0414 (COD)

[2]Council of the European Union, Brussels, 8 March 2024, Proposal for the Directive of the European Parliament and of the Council on improving working conditions in platform work - Analysis of the final compromise text with a view to agreement, 7212/24 ADD 1

and protect the platform workers' personal data. Key elements include a legal presumption to accurately determine the employment status of individuals working through digital platforms. The agreement with the Parliament also ensures that workers are adequately informed about "automated decision-making and monitoring systems" regarding their hiring, working conditions, and earnings. It also prohibits algorithmic decision-making or monitoring systems for processing certain types of personal data, such as biometric data or data relating to their emotional or psychological state.

The agreement text will now be finalised in all official languages and formally adopted by both institutions. After the formal adoption stages, Member States will have two years to transpose the directive's provisions into national legislation.

3. Statistical measurement and methodological issues

Traditional labour market statistics and economic indicators have yet to be fully developed. In recent years, several attempts have been made to measure digital platform employment; however, available statistics on the number of workers involved, their characteristics, and the tasks performed yield results that are difficult to compare due to methodological issues. The phenomenon itself is still relatively unknown, highly heterogeneous, and relatively rare.

Among the primary difficulties highlighted by studies based on population surveys are the challenges in conveying to respondents what digital platform employment means, with the need to stress the difference with the mere use of company software or applications facilitating remote work or meetings. The difficulty in accurately identifying this type of work in statistical terms requires careful data cleaning and validation.

Another critical aspect is related to the definitions adopted and the boundaries of the analysis domain. This involves identifying the key characteristics of platform employment, adopting a sectoral taxonomy of digital platforms, and establishing criteria for inclusion and exclusion. Again, data collection exercises conducted thus far have varied.

A further problematic issue is the choice of the reference period. Official employment statistics and general sample surveys tend to underestimate rare jobs performed for a few hours and short periods. Even surveys with robust samples, such as Istat's Labour Force Survey, inevitably need help accurately capture such phenomena. Specifically, in the Labour Force Survey, which provides official employment estimates and is harmonised at the European level, the condition of being employed is defined as having worked at least one hour during the reference week.

According to some scholars (De Groen and Maselli, 2016; Beck, 2017), platform-mediated work is inevitably underestimated in household and individual statistics. Respondents' perception of their occupational status is one of the main reasons for this underrepresentation. Despite engaging in internet-mediated work activities, they tend not to consider it actual employment and thus do not report it during interviews. Instead, they identify themselves as students, homemakers, or unemployed[3].

3.1. Digital Platform Employment: definition and sources

Different purposes have led to varying definitions of digital platforms. Most of these definitions conceptualise a digital platform as a "digital interface" or an "online service provider." In these definitions, the digital platform stands between service or goods providers and their clients or customers.

From a methodological point of view, there is a need to harmonise the defining approaches, and ILO, OECD, and Eurostat's efforts are moving in this direction. The Handbook published in 2023 (OECD et al.) helps identify the essential aspects of digital platform employment and work that statisticians should consider when designing their research objectives and operational metadata. The work identifies a conceptual framework and specifies terminology and internationally agreed statistical standards for measuring digital platforms in OECD countries.

The handbook indicates that *Digital platform employment includes all activities carried out by a person through or on a digital platform to generate pay or profit"*[4] (OECD et al., 2023, p. 47). Moreover, the OECD and ILO definition underlines that a digital platform or a phone app controls and organises essential aspects of the activities, such as access to clients, evaluation of the activities carried out, tools needed for conducting the work, facilitation of payments, distribution and prioritisation of the work to do.

Finally, from a labour statistics point of view, digital platform employment is carried out by persons and not by economic units, which is an important distinction.

Also, the Handbook specifies that *"Labour force surveys are best placed to give accurate and robust estimates on the overall prevalence of digital platform employment, although problems of sample size reduce their suitability for gaining insights on the characteristics of digital platform workers"* (OECD et al., 2023, p. 8). Other sources that can provide a helpful complement are: ad-hoc surveys,

[3] This is evidenced, for example, by the 9% of platform workers estimated in the COLLEEM survey. Another risk of underrepresentation occurs in interviews conducted through proxies, which are common in household surveys.

[4] As such, the definition recognises that digital platform employment is only one out of many forms of work that can take place on or through a digital platform, following the definition of work provided by Resolution I of the 19th International Conference of Labour Statisticians (ICLS).

household surveys covering different issues, administrative datasets or big data. Evidently and as usual, the choice of the method depends on the research objectives, the available resources and the trade-offs faced by statistical agencies or researchers.

Tax registers, or in general other administrative registers, can provide information from both the platforms (when it is possible to identify them as taxpayers) and from the workers (when it is possible to identify them as DPE workers). An example of acquiring administrative data on the phenomenon is offered by France, which, as of 2019, has stated that online platforms are required to report the annual gross income of all those who receive remuneration to the tax authorities[5]. Likewise, in Belgium, as of 2016, a favourable tax regime is envisaged for income derived from a platform (reduced tax rate and tax exemption up to a certain amount), which should encourage the emergence of job positions.

Web scraping can also help assess trends in parts of the digital platform labour market. In this respect, the Online Labour Index (OLI) is an experimental economic indicator that tracks the use of online labour. It measures the utilisation of digital platforms mediating online labour over time across countries and occupations based on monitoring all projects and tasks posted on a sample of platforms using an application programming interface and web scraping.

4. Eurostat and DPE Module

In the growing debate on the methodology and statistical measurement of digital platform employment comes the pilot survey on the Digital Employment Platform (DPE) within the Labour Force Survey (LFS) in 2022, implemented voluntarily by 17 European countries, including Italy. The pilot aimed to test the methodology, definitions, and questionnaire and produce the first data on employment mediated by digital platforms in the EU, in view of an ad hoc module planned for 2026.

In the pilot survey, for estimating platform workers the testing module focuses on individuals aged 16 to 64 who have worked at least one hour of paid work by performing tasks or activities organised through a digital platform or a telephone app during the 12 months preceding the interview[6]. Some insights were made concerning

[5] The tax obligation occurs when the platform's workers, or collaborators, exceed a certain amount of income or a certain number of transactions per year through the platform.

[6] The activities considered are: 1) taxi or passenger transport services; 2) transport services (delivery of food or other goods); 3) accommodation services (only where time is spent in the management of the ad on the platform, cleaning, catering for guests, carrying the keys (and not just making the house/room available); 4) sale of goods (only if produced or acquired to be sold); 5) handiwork and cleaning (including plumbing, electrician works or similar services); 6) child and elderly care; 7) medical and health care services; 8) teaching and tutoring services; 9) translations services; 10) IT services

the previous four weeks: measuring the hours spent on activities, the share of income resulting from them, how tasks are assigned and working hours are defined, the consequences of rejecting work assigned by the platform, and how prices are determined.

5. European and Italian results

In Italy, the number of people in the age group 15-64 who, in 2022, declared to have done at least one hour of work through a digital platform in the 12 months preceding the interview is 565,000, 1.5% of the total population (3.0% on average of the 17 European countries participating in the survey[7]). In line with the European results, Italy reported a higher incidence of the phenomenon among men than women (1.8% compared to 1.3%; 3.2% and 2.8%, respectively, in the 17 EU countries) and among people with a high educational level (2.6% among people with tertiary level of education in Italy; for the European countries the share for females and males is 3.9 % and 4.7 % respectively[8]). Looking at the age groups, in Italy people aged 30-44 recorded a higher share of digital platform workers (in Europe, the work through a platform is more diffused among the people under 30, 3.6 %). Approximately two-thirds of workers used a single platform, 22.3% used at least two platforms to perform the same activity, and 10.1% used multiple platforms to perform different activities.

In Italy, about 16% (89,000 individuals) who worked on tasks or activities organised through a digital platform (or a phone app) during the last year also reported such activity in the previous month (1 in 5 people in the 17 European countries, 21.5 %). The characteristics of this subgroup are similar to those observed among those who carried out the activity in the previous 12 months: more men than women, greater representation of the age groups 30-44 and 45-54, and of tertiary education.

The activities most frequently mediated via the platform are the sale of goods, delivery of goods (including food), content creation (YouTube, Instagram, etc.), rental of houses or rooms, IT services (programming, coding, web design, support and control of online content; Figure 1). The most frequent activities remain the same concerning the four weeks preceding the interview: sale of goods, rental of

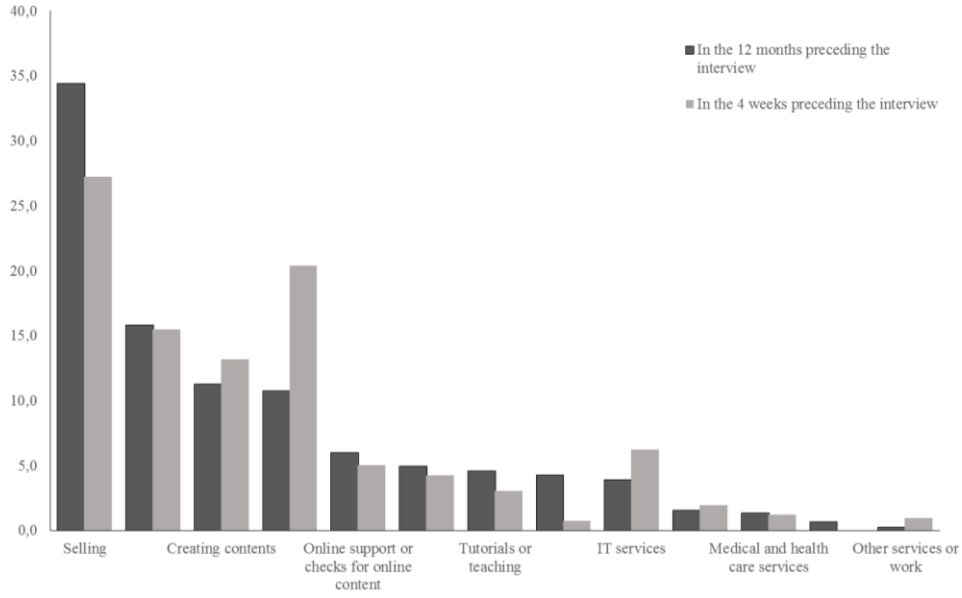
(programming, coding, web or graphic design, data or text entry or editing); 11) online support or checks for online content; 12) creation of content such as videos or texts; 13) other services.

[7] The data were only released on an aggregated level https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Employment_statistics_-_digital_platform_workers .

[8] Data is not available in total.

houses/rooms, delivery of food or other goods, and creation of content represent more than two-thirds of the total.

Figure 1 − *Type of activities carried out via digital platform in the 12 months and 4 weeks preceding the interview. Year 2022 (age group 15-64, percentage values).*



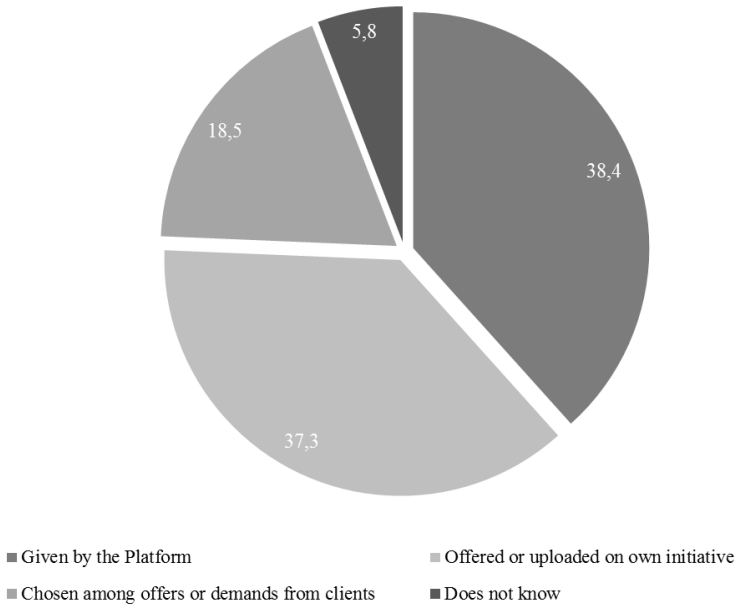
Source: Labour Force Survey, 2022.

In the area of activities related to the sale of goods, 37 per cent of employed people using a platform are self-employed, both with and without employees; almost half of these have a primary job that involves selling products (shopkeepers or sellers, commercial distribution operators, or operators in food service or entertainment activities). In this case, the platform is probably used as an additional channel for marketing. The situation is similar for delivering food or other goods and the activities related to house rental.

The number of hours worked on digital platforms is low on average: one in three worked for the platform less than one hour; slightly more than one in three less than 10 hours; in total, eight out of 10 individuals worked for the platform less than 20 hours in the four weeks preceding the interview. This is consistent with the share of income derived from platform work, which for more than two out of three individuals represents at most half of the total revenue earned in the four weeks (for nearly half, it is less than a quarter). In almost four out of 10 cases, the platform directly assigns the activity (38.4% of respondents); a similar proportion applies to

those who do it on their own initiative (about 37%); only 18% state that they can choose between different options or customer requests (Figure 2).

Figure 2 – *Assignment of work carried out through digital platform in the last 4 weeks before the interview. Year 2022 (percentage values).*



Source: Labour Force Survey, 2022.

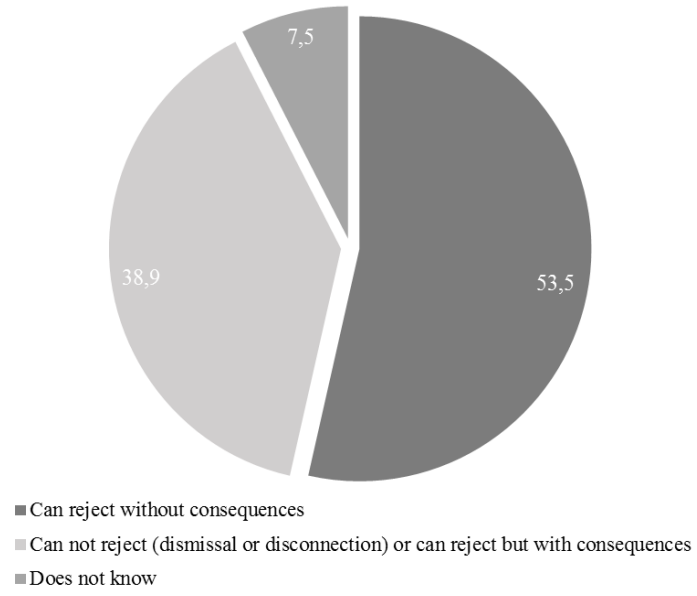
Rejecting the assignment given by the platform does not lead to any consequences for 53.5% of the respondents. In comparison, 38.9% state rejection could lead to consequences (such as loss of job, disconnection from the platform, loss of relevant assignments or worsening of ratings; Figure 3). In over eight out of 10 cases, working time is self-determined, confirming the high degree of flexibility characterising this work organisation.

In just over 20% of cases, the platform determines the remuneration for the work; in 13.5% of cases, the platform negotiates with the worker; and finally, in more than six out of 10 cases, the compensation is set by the worker (or by another party in cases where there are regulated prices).

The degree of freedom and autonomy in the organisation and management of work through digital platforms is generally high, consistently with the European data. This is due to the nature of the prevailing activities - selling property, renting housing, delivering food and creating content - and to the type of workers who, for

the four reference weeks are mainly self-employed, often with employees. In many cases, those profiles suggest that the platform is used as a marketing channel for goods that are produced or sold as part of their primary activity.

Figure 3 − *Consequences of rejecting a work assigned through the digital platform in the 4 weeks preceding the interview. Year 2022 (percentage values).*



Source: Labour Force Survey, 2022.

To deepen the descriptive analysis, we apply multiple correspondence analysis to the data to observe the relationships between the modes of the main variables. Looking at the most widespread activities, it emerges that self-defined working hours are associated with renting houses (generating between a quarter and a half of the total income). Similarly, the ability to set the price independently and the possibility to reject the assignment without consequences are associated with sales and content creation activities. More constricting conditions, on the other hand, concern the delivery of goods, including food, where there are consequences in case of refusal, and freedom on schedules and prices is lost; in these cases, the share of income derived from the platform, and thus the economic dependence on these jobs, it is also more substantial.

6. Conclusions

The phenomenon of digital platform-mediated work is evolving rapidly, in line with the spread of the technologies that make it possible. Even ten years ago, digital platforms handled a limited number of relatively skilled jobs usually performed remotely, often related to computer programming. With the spread of digital devices and different forms of connectivity, platform work has also included low-skilled types of work, usually associated with services that require the work provider's on-site presence. The data show that platform work generally provides excellent flexibility and autonomy, but much depends on the activity.

Moreover, these are often non-prevalent work activities carried out to supplement income. In several cases, however, platform work constitutes the main occupation and thus the sole source of income for workers who also have to cope with the lack of adequate legal and social security protection.

There is a growing body of experience in measuring and describing the phenomenon of digital platform work from which to learn. In the future, it will be essential to monitor the evolution of this phenomenon, not only for the workers whose activities are governed by these platforms (a probably growing share of the world of work) but more generally for the knowledge of the future labour market, in which specific characteristics of platform work may spread to other areas of employment. In addition, more in-depth knowledge of the phenomenon can help to improve the working conditions of platform workers by establishing more appropriate regulation.

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