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## Article

# Assessing gender inequality in digital labour platforms in Europe

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## Assessing gender inequality in digital labour platforms in Europe

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**Keywords:** Digital labour platforms, gender, Crowdfunding, Inequality, Labour, Standards

**Abstract:** In this article we analyse digital labour platforms from a feminist approach, revealing the pervasiveness of gender inequalities through segregation and the highly asymmetrical model of gender relations and social reproduction. Our findings after examining data from the COLLEEM survey on platform workers in 16 European countries show that women's participation in platform work is concentrated in more 'feminised' tasks, their work intensity in the platform is lower, and they have slightly worse working conditions and earnings than men. Our results suggest the need for a new analytic approach to platforms, which emphasises labour force heterogeneity, worker dependence in platform work, and changing gender relations.

This paper is part of **The gender of the platform economy**, a special issue of *Internet Policy Review* guest-edited by Mayo Fuster Morell, Ricard Espelt and David Megias.

## Introduction

Platform work emerged in Europe around 2005, driven by technological changes and economic and societal developments, such as increased use of mobile ICTs and digitalisation, globalisation, erosion of the standard employment contract and the welfare state, and declining wages and earnings (Huws, 2020; Van Doorn, 2017). While small in scale, digital platform work has rapidly expanded in the last decade and is expected to continue doing so in the future (De Groen et al., 2017; Florisson and Mandl, 2018). According to the research by Fabo et al. (2017), 80% of the platforms operating in the European Union (EU) were created from 2010 onwards. Over the last years, platforms have gone from dealing mainly online and performing small-scale and low-skilled routine tasks to mediating a wide variety of services. Due to its recent expansion and the difficulties to measure it,<sup>1</sup> the size of the platform economy has probably been underestimated, and research on workers' experiences is very recent and scant, with even scarcer studies incorporating a gender lens on platform work.

Women represent already 38% of platform workers and the proportion of young women for whom platforms are the main source of income has increased by 7.1 percentage points between 2017 and 2018 (Urzi Brancati et al., 2020). Despite women being increasingly engaged in labour platform activities, little research conducted to date has included a gender or feminist perspective. However, the platform economy has direct impacts on the social organisation of production and labour, and it is changing the main dimensions of the world of work with crucial gendered effects: access to work, occupational segregation and precarity, the organisation of work and other working conditions.

This article deploys a feminist economics approach to assess the gendered impacts of digital labour platforms in these three dimensions. To analyse the reconfiguration and regeneration of gender inequalities in the platform economy, we combine feminist economics' work on care and social reproduction (Power, 2004; Rai and Waylen, 2014), with feminist economic theory on labour market segmenta-

1. It is complicated to measure platform work because it is often a supplementary or secondary income source that is not consistently reported to tax authorities, and official labour statistics are not adapted to this new work, which might not meet standard labour force survey definitions of employment (De Groen et al., 2017; Riso, 2019).

tion by gender and other intersecting inequalities (Ferber and Nelson, 1993). Gender, together with other structures of constraint such as class, race, age and sexuality (Folbre, 1994), is also a way in which agency, power, and social relations are articulated in the economy. This approach overcomes mainstream economic analyses that are blind to gender and social relations and allows to highlight the dynamic in interactions between paid and unpaid care work and women's position and bargaining power in the market and the household.

For the empirical analysis, we use microdata from the two COLLEEM surveys, conducted by the Joint Research Centre (JRC) of the European Commission over the years 2017 and 2018, on platform workers in 16 EU member states.<sup>2</sup> We examine the differences between female and male workers in terms of economic status, tasks supplied via digital labour platforms, working conditions, and job quality indicators. We also analyse hours worked and shift patterns in combination with care duties. Our study contributes to advancing knowledge on the gendered impacts of platform work. In order to regulate the platform economy in a way that contributes to women's economic and social empowerment, we need an improved understanding of the realities of different groups of workers in the platform economy. The need for this knowledge is even more urgent after the exponential growth of digital labour platforms since the outburst of the COVID-19 pandemic. Lockdown and restrictions of movement forced millions of workers to work from home and multiplied the demand of delivery platforms.

## **Gendered impacts of the platform economy**

In this section, we draw on previous feminist works on digital labour (especially, Huws' works) and review literature on potential impacts of digital platform work on gender inequalities using a feminist economics framework, which allows us to incorporate in the analysis of the economic system and the labour market the centrality of social reproduction and care. A feminist economics standpoint also shows how technological changes, labour market institutions and gender relations interact to reconfigure inequalities that sustain the segmentation of jobs and the allocation of lower-value jobs to women and other discriminated social groups. Using this framework, we discuss literature on platform work focusing on benefits or disadvantages for gender equality regarding women's access to work, in terms of increased employment, inequalities and segmentation in their entry to the labour market, working conditions and the organisation of work.

2. The JRC COLLEEM survey covered 14 countries in 2017 and was extended to a total of 16 countries in 2018.

In the first place, one strand of literature on digital labour platforms has focused on efficiency of digital platforms in accessing labour supply. Platforms have strong growth prospects, very low barriers to entry, and they attract a wide array of earners. One would expect that disadvantaged groups, such as women, ethnic minorities and the less educated could benefit significantly from the digital platform economy due to the reduction in information costs made possible by this new form of exchange (Hunt and Samman, 2019). Digitally mediated home-based work may enable women with adequate IT infrastructure and access to overcome barriers to paid work, such as their larger provision of unpaid care and domestic work compared to male workers. Recent research on platforms has shown that high worker turnover persists, suggesting that labour platforms may provide work opportunities to individuals in times of transition (Johnston et al., 2020).

However, the last survey of platform workers in Eastern Europe carried out by the European Trade Union Institute (ETUI) did not find that platforms help integrate workers into labour markets (Piasna and Drahokoupil, 2019). The study by Schor (2017) presents evidence of increased income inequality among the bottom 80% of the distribution in the United States due to a crowding-out effect. Tasks, performed previously by traditionally low-educated workers, are now provided by highly educated platform workers with full-time jobs who just want to supplement their incomes (Artero et al., 2020). Indeed, the vast majority of platform workers have other sources of income (Huws et al., 2018) or declare to be employed (Pesole et al., 2018).

Also, in the past decade, labour platforms have started to offer household services, such as cooking, cleaning and care work. Some studies point out that the growth of care work platforms is likely to promote women's increased labour market activity in two ways. On the one side, care work platforms could help create better-quality and more satisfying employment, combining flexibility with security and full inclusion in the labour market, providing legal protection and acknowledging the social rights of employees (Huws et al., 2019; Ticona and Mateescu, 2018). On the other side, by facilitating the supply of these services, these platforms reduce unpaid care housework, enabling women to access the labour market on more equal terms. However, even if care work platforms are successful in promoting women's increased labour market activity, it is less likely that platform work will improve the poor working conditions of these traditionally female-dominated occupations. Though care work platforms do create visibility, as Ticona and Mateescu (2018) have pointed out, it is a highly individualised visibility that serves mostly to make workers visible to potential clients and the platforms themselves, and exac-

erbates existing inequalities for workers. The techniques that enable these platforms to exert control over a contingent workforce marked by superfluity and fungibility are far from being post-racial or gender-neutral (Van Doorn, 2017).

According to recent literature, women's entry into platform work echoes labour segmentation by gender in the general workforce (Balaram et al., 2017; Kasliwal, 2020; Larsson and Teigland, 2020; Schoenbaum, 2016). The study by Pesole et al. (2018) on European countries shows that women's participation in the platform economy seems to be concentrated in 'feminised' tasks such as translation, teaching and clerical services (where they have slightly worse working conditions than men). The platform economy seems to extend traditional work dynamics using many of the same social mechanisms to recreate patterns of advantage or disadvantage (Hoang et al., 2020). Therefore, digital labour platforms might contribute to reinforcing traditional gender roles and relations, increasing gender inequality.

Another main approach to analyse digital labour platforms has focused on the increase in precarity within digital platforms. Even though digital platforms are part of broader structural transformations in the economy and the labour market, including the long-term trend towards precariousness and informalisation of work started in the 1980s (Standing, 2011), as well as the expansion of atypical forms of employment, digital labour platforms are putting a further strain on the standard employment relationship. New forms of atypical work arrangements have proliferated, intensifying precariousness and benefitting some social groups more than others, depending on their socioeconomic and demographic characteristics. These atypical labour relations result in less favourable working conditions than when the labour relation is standard or traditional (Degryse, 2021; Lehdonvirta, 2018; Urzì Brancati et al., 2020). Platform work is exactly like precarious work in that it is uncertain, unstable and insecure, and workers bear most of the risks and receive limited benefits and statutory protections (Kalleberg and Vallas, 2017). Since women are disproportionately represented in precarious employment and solo self-employment (Howcroft and Rubery, 2018), these new forms of irregular work would penalise them further.

However, this view of the platform economy as creating a new workforce characterised by non-standard employment contracts, in contrast to a traditional labour market where precarious work was an exception, is highly contested by feminist and intersectional literature (Betti, 2018; Huws, 2014; Rodríguez-Modroño, 2021; Vosko, 2010), particularly that adopting a Global South perspective (Benería, 2001; Bhattacharya, 2017; Mezzadri, 2019). These authors consider that the standard employment model—characterised by job stability and full-time employment with

a single employer, is an historical exception, limited only to white workers in advanced countries during the Fordist period. The rest of workers—women, migrants, non-whites, and workers in the Global South—have been historically excluded from more secure and better jobs, and contingent work has always been a reality for them. From this point of view, precarious work has always been the norm, and platform work may just help these already precarious workers by procuring them the possibility of additional income, and minimising their risks.

Finally, another strand of literature focuses on the alleged greater flexibility offered by digital labour platforms regarding where, when and how to work, which makes it easier to combine employment with care. According to some studies, one of the main reasons cited by workers for participating in platforms is the flexibility it grants (Berg, 2016; De Groen and Maselli, 2016). On the one hand, online platform work offers workers more autonomy and flexibility, which may improve work–life balance and promote female labour force participation, given women’s high unpaid care workloads (Chung and Van der Horst, 2018). On the other hand, there can be disadvantages: online platform work can lead to an intensification of work, longer working hours, and the overlapping of work and home life, which may be particularly harmful for women. In practice, evidence on platform work suggests that greater working-time autonomy may lead to an intensification of work and overtime. Digital workers are usually constrained by greater time availability, poor control over workflow and schedule and the need to respond instantly (Piasna and Drahoukoupil, 2017), which is incompatible with the inflexibility of care work. Different studies (Berg, 2016; De Stefano, 2016) show that, in certain platforms, total lack of availability gives rise to sanctions that can range from the temporary suspension of the workers’ accounts to their disconnection. Certain characteristics of work on digital platforms such as poor control over workflow and the need to react immediately to customer requirements, intensify the workers’ feeling of having to be always available, blurring the lines between private and professional life and may increase stress and related health problems (Martin et al., 2016; Rodríguez-Modroño and López-Igual, 2021; Smith and Leberstein, 2015). This requirement of constant availability and instantaneous responsiveness harms women more than men, as women are those who usually have to juggle work with care, exacerbating inequalities.

Domestic responsibilities, that are overwhelmingly shouldered by women, conditions the amount of time they spend on the online platform and the times at which they carry out their work, and, consequently, their earnings. The flexibility offered by platforms is subject to trade-offs between earnings and choice over



working times. Women earn, on average, 82% of what men earn (Adams and Berg, 2017). This gender pay gap is largely due to devoting less time due to care responsibilities. The study by Churchill and Craig (2019) confirms that, while income was men's primary motivation for entering the platform economy and it was largely effective in meeting their needs, women were also motivated by fitting around non-work schedules. In fact, men were more likely to have another non-crowdwork job. But the flexibility granted by platform work depends largely on whether it is a primary or supplementary source of income. Platform work as a primary source of income allows for less flexibility, compared with when such work is a source of additional earning. This juggling between home and work is particularly pronounced among lower-earning platform workers, where the gender pay gap is most pronounced (Adams and Berg, 2017). For females who are carers, these jobs in online platforms are likely to be their main source of income (Smith, 2016). Therefore, the insecurity of this type of work affects women more than men and a higher proportion of women's total working hours is likely to be unpaid (Howcroft and Rubery, 2018). Besides, there is evidence that gender earning gaps exist among workers ostensibly carrying out the same work via platforms (Liang et al., 2018; Litman et al., 2020). Gender pay differentials operate regardless of feedback scores, experience, occupational category, working hours and educational attainment, which suggests gender inequality is embedded in the operation of platforms (Renan and Ben-David, 2017).

In summary, even though platform work provides alternatives to traditional employment, it may be reinforcing the 'casualisation' of labour markets and traditional gender relations. In the next two sections, we analyse the platform economy in Europe to assess gender inequalities in worker's participation, earnings and retention, as well as occupational segregation, and working time arrangements.

## **Characteristics of platform workers by gender in Europe**

This section presents findings from the JRC COLLEEM surveys conducted over the years 2017 and 2018 among frequent internet users. This is an online panel survey covering 15 EU member states,<sup>3</sup> plus the United Kingdom. It collected 38,878 responses from internet users aged 16 to 74. In each country, a minimum of 2,300 observations were gathered following a non-probability sampling design. Quotas of respondents were established to guarantee representativeness according to age

3. The countries covered are Croatia, the Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, the Netherlands, Portugal, Romania, Slovakia, Spain, and Sweden.



groups and gender. In addition, post-stratification weights have been computed to account for the different population size of internet users in each country, as well as their level of formal education and employment status. COLLEEM is currently the major source of comparative data on platform work in Europe, though it presents some limitations. The main disadvantages of online panel surveys are their limited population and the possibility of bias in the sample. Indeed, respondents are drawn from commercial online panels and therefore may be more engaged in online work than the general population. In the same way, COLLEEM may be less efficient in intercepting platform workers who provide labour services on location (Urzi Brancati et al., 2020).

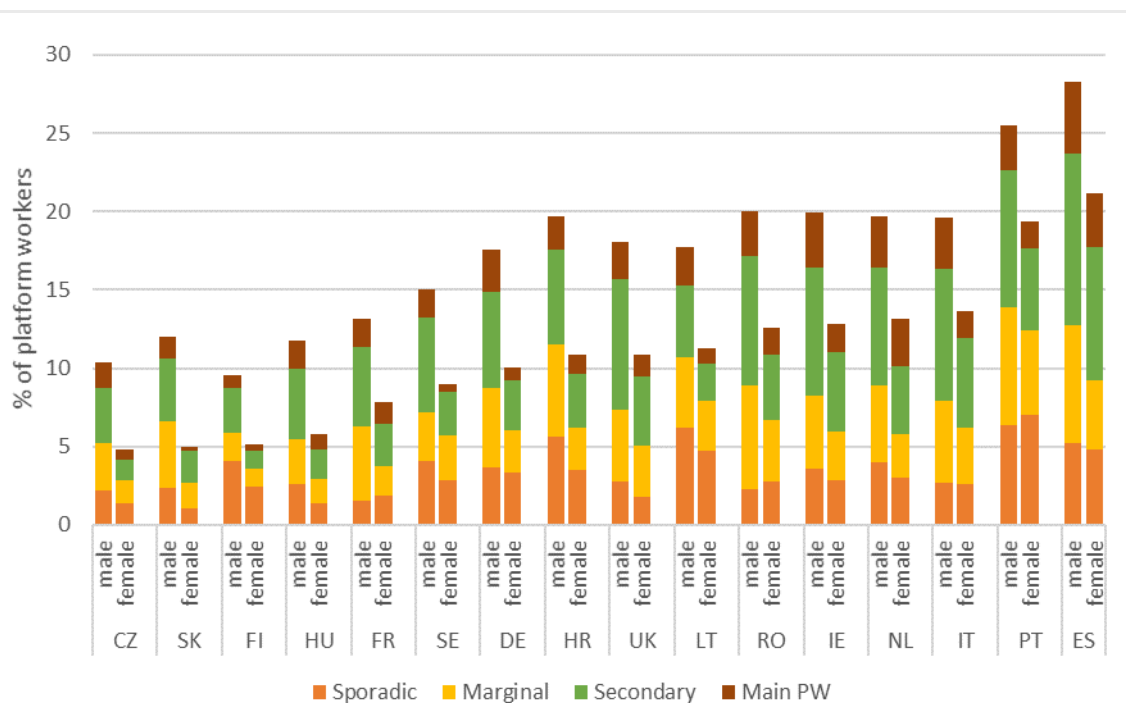
In order to identify platform workers, COLLEEM asks whether the respondent has ever earned income from the provision of labour service, excluding any labour supplied via capital platforms (e.g., Airbnb) or any additional income deriving from e-commerce, crowdfunding and similar activities. This question may lead to an underestimation of women's participation in the platform economy as they tend to concentrate in certain sectors, such as hospitality and e-commerce. Moreover, COLLEEM defines digital labour platforms as 'digital networks that coordinate labour service transactions in an algorithmic way' (Pesole et al., 2018, p. 7). As a result, purely intermediation platforms, such as monster.com and similar digital billboards, are excluded.<sup>4</sup> The prevalence of platform workers that ever tried to supply labour via platform is around 11% of the working-age population for the 16 countries covered, ranging from 18% in Spain to about 6% in the Czech Republic, and it gives us some indication on how spread out the phenomenon is in Europe. However, in order to compare these figures to standard work in the offline labour market some adjustments are required. Based on the definition of employment by ICLS,<sup>5</sup> Pesole et al. (2019) propose some categories of platform workers that resemble regular employment and take into account additional elements, such as: i) the amount of time spent on platforms; ii) the frequency of provision of labour services and iii) the income earned. Those categories have been further refined by Urzi Brancati et al. (2020), leading to the division of platform workers into four categories: sporadic, marginal, secondary and main platform workers. Sporadic is the broadest category and includes those persons who have tried platform work, but do not show any regularity in the provision of this kind of services. Marginal plat-

4. For further detail on platform classification, see Pesole et al. (2019).

5. The resolution adopted by the 19th International Conference of Labour Statisticians (ICLS) established that employment 'comprises all persons of working age who during a specified brief period, such as one week or one day, were in the following categories: a) paid employment (whether at work or with a job but not at work); or b) self-employment (whether at work or with an enterprise, but not at work)'.

form workers are those who perform platform work monthly but spend less than 10 hours and gain less than 25% of their income from platform activities. Secondary platform workers are those who spend on it more than 10 hours per month and make more than 25% of their income from platform work. Finally, main platform workers spend over 20 hours per month on platforms and earn more than 50% of their income there.<sup>6</sup>

Figure 1 shows the different estimates for each category of platform work by gender in the 16 European countries. Bars are arranged in ascending order with respect to female participation in the platform economy. The countries with the highest share of women in platform work in all categories are southern European countries followed by the Netherlands. It is interesting to notice that platform work is more prevalent in countries with either an historical low rate of female participation (Spain and Italy) and low wages (Portugal) or, as for the Netherlands, where women tend to concentrate in non-standard forms of employment (i.e., part-time). On the other hand, female platform participation is at its lowest in Nordic and Eastern countries, where labour markets are more inclusive in terms of participation rates, though still quite segregated in terms of gender occupational distribution.

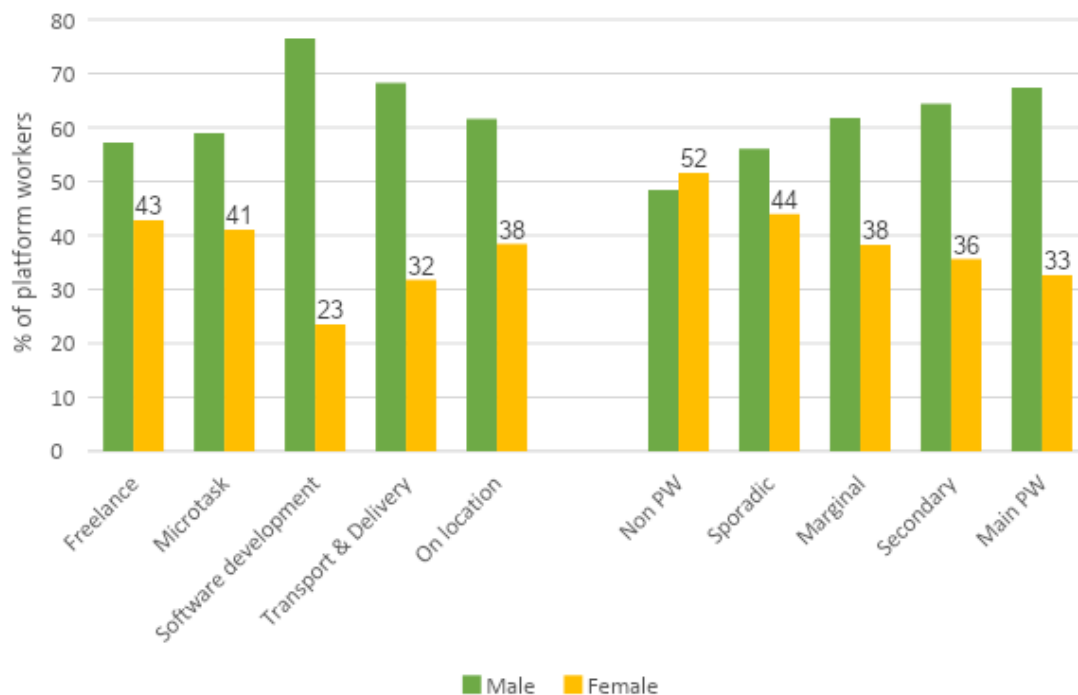


**FIGURE 1:** Estimates of platform work by gender adjusted by frequency and income

6. See Urzi Brancati et al. (2020, p. 17) for more detailed information.

Source: Authors' calculation on COLLEEM data

In Figure 2 we report the total rate of female participation by categories in the whole sample and we look more in detail at the occupational distribution. About 4 in 10 platform workers are women. Indeed, 62% of all platform workers are men and 38% are women. The gender employment gap is smaller when work-intensity in the platform is lower. As shown on the right-hand side of Figure 2, sporadic platform workers are composed of 55% of men and 45% of women, and the gap increases together with the intensity of the work provision up to almost a 70%-30% ratio for main platform workers. Similarly, women tend to be more represented in specific tasks, in particular freelance (43%) and microtask (41%) activities, while the share of women in software development is the lowest (24%), followed by transport and delivery (32%). Not surprisingly, women are also well represented in on-location tasks that include services provided in person, such as cleaning and domestic services, beauty services and care services, among others.

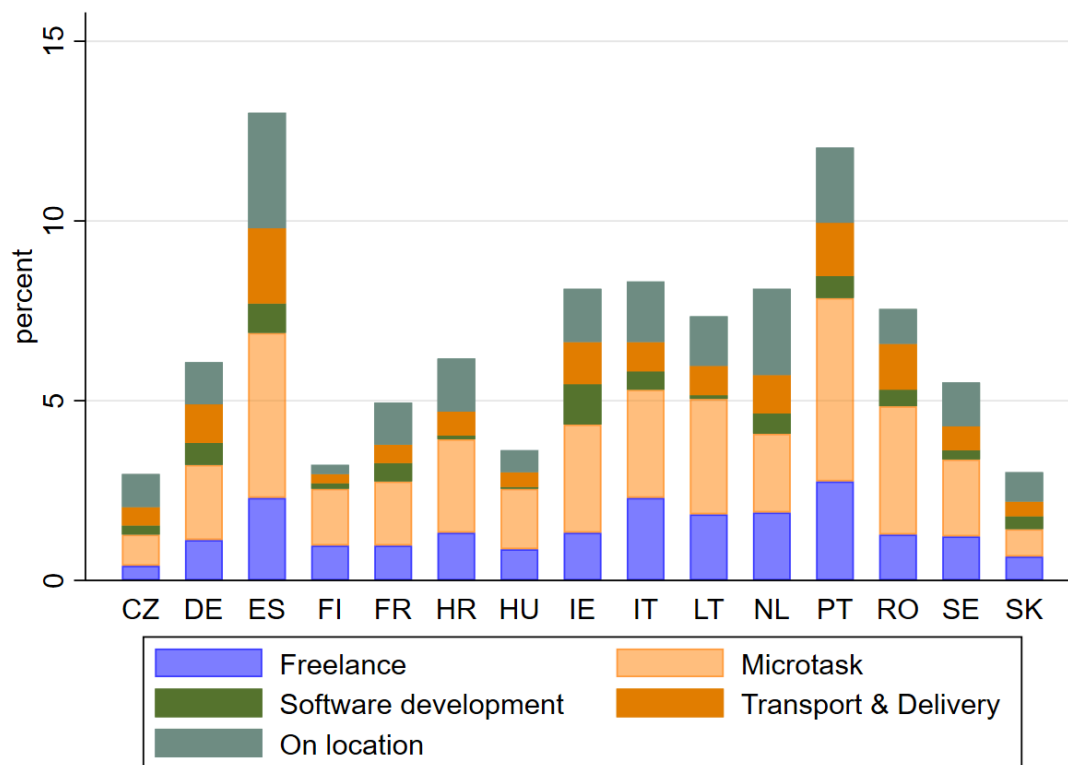


**FIGURE 2:** Gender distribution by types of occupation and intensity of work

Source: Authors' calculation on COLLEEM data

Figure 3 looks for evidence of occupational segregation in platform labour markets. The graph shows that in countries with a higher female participation rate in platform work (Spain, Portugal and Italy), women mostly concentrate in freelance

and microtask activities, though a fair share also provide on-location services, including transport and delivery, and software development. By contrast, in countries with a low female participation rate, women tend to concentrate only in one type of occupation and microtasks constitute the lion's share of the services provided by women.

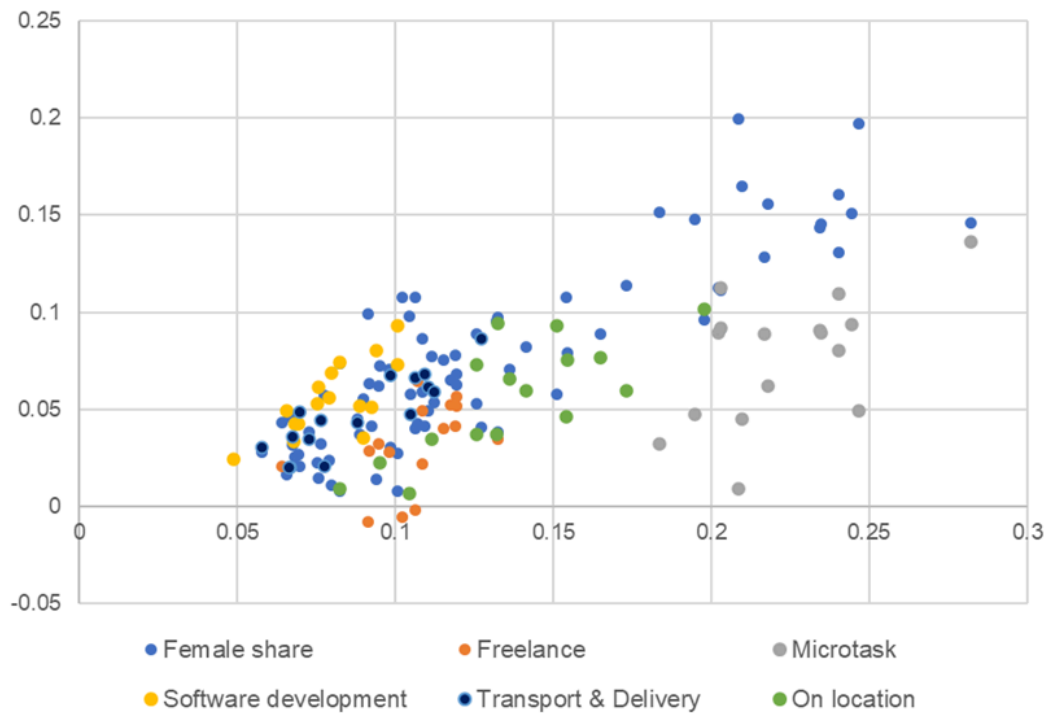


**FIGURE 3:** Women distribution by type of platform occupation and countries

Source: Authors' calculation on COLLEEM data

Another way to check for segregation is to look at the distribution of the difference between the shares of men and women in different occupations in each country. The scatterplot in Figure 4 reports female participation shares in each occupation and country (the light-blue dot) and compares them with the relative difference to male shares in each occupation–country combination. The resulting plot, seen in the graph, shows negative values only for freelancers in some countries, i.e., the share of women providing freelance services is higher than that of men only in Lithuania, Italy and Portugal. For all other occupation–country combinations the share of male workers is always bigger, however it is possible to identify two different segregation patterns mirrored by the two clusters in the graph. On the right-hand side, are grouped those occupation–country combinations for which female

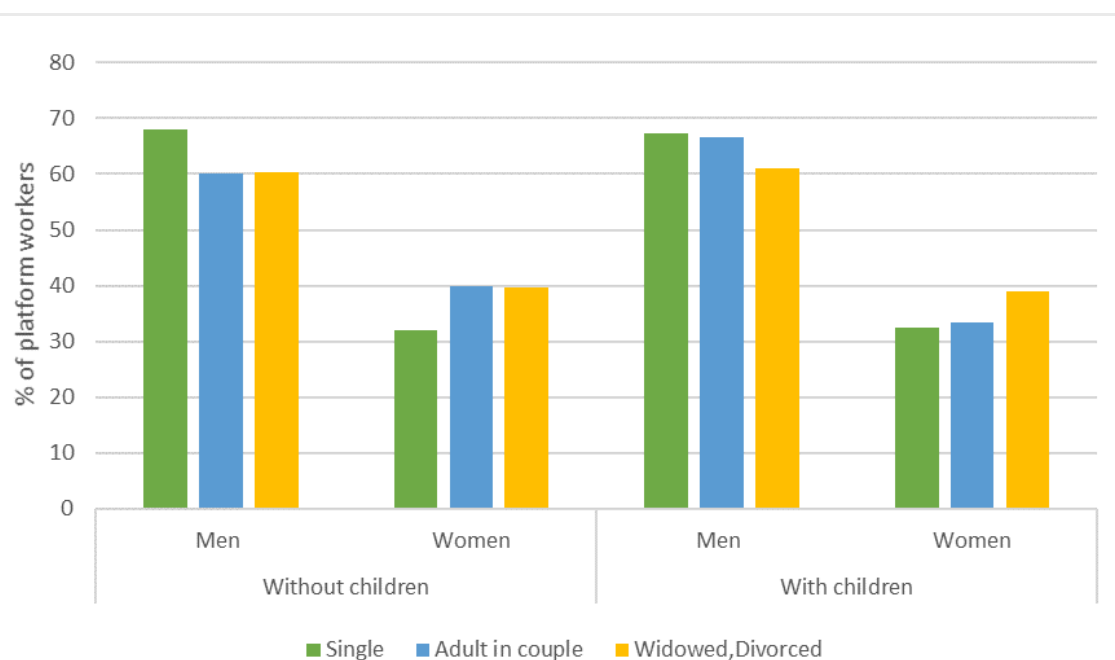
participation shares are higher and the differences between men and women smaller; this is the case mainly for microtask and on-location services in almost all countries. On the left-hand side, we find the occupations with more marked gender differences, namely software development and transport and delivery, replicating already existing gaps in offline labour markets.



**FIGURE 4:** Gender gap shares by type of occupation

Source: Authors' calculation on COLLEEM data

The usual portrayal of platform workers in media and political discourses is that they are mostly young with no family responsibilities. COLLEEM data confirm that platform workers are generally young; the average platform worker is 34 years old, with the female average being slightly lower. However, it is less certain that they have no family responsibilities. Indeed, 31% of platform workers have children and about 60% are adults living in a couple.



**FIGURE 5:** Household composition of platform workers

Source: Authors' calculation on COLLEEM data

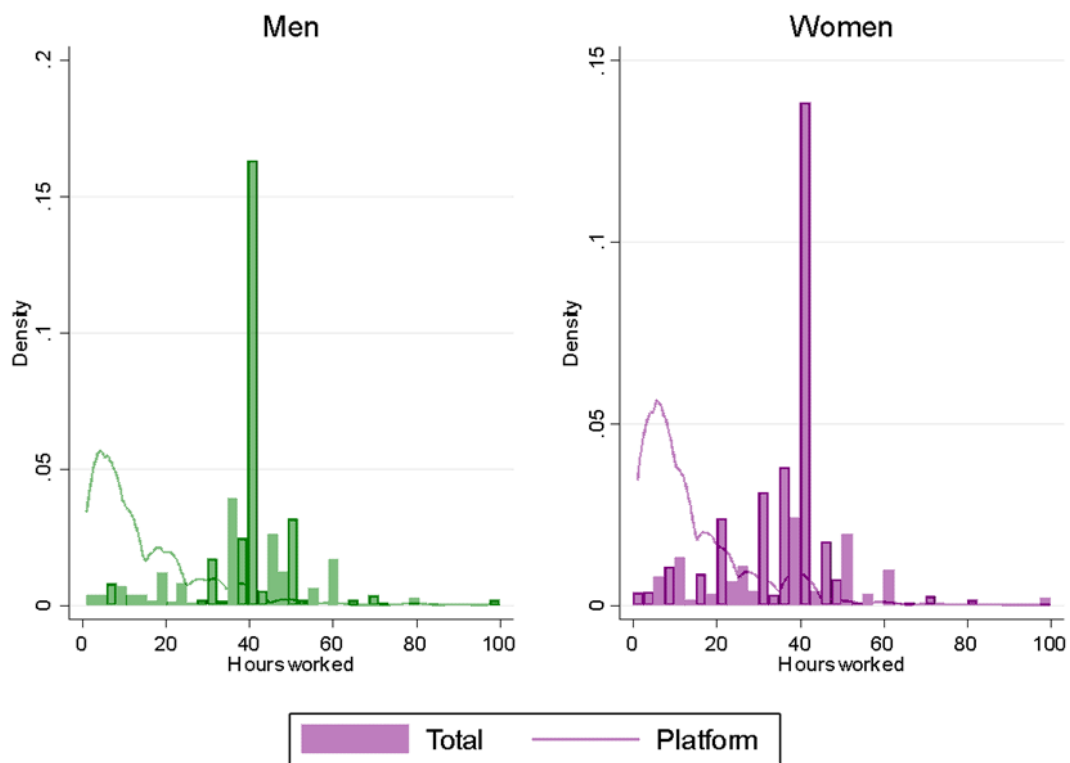
Figure 5 shows the household composition of platform workers. Interestingly, having children increases the participation in platform work of men living in a couple but decreases it for women in couples, while adults who are either single or widowed or divorced seem not to be affected by the presence of children. The results suggest that, when in a couple, women remain the primary caretaker, replicating the same dynamics of the offline labour market in the digital one. This result partially contradicts the rhetoric that the greater flexibility entailed in platform labour provision promotes gender equality by increasing labour female participation via digital labour markets.

## Gender differences in working conditions in platforms

Whether labour platforms lower the entry barriers to the labour market and grant new employment opportunities for women is only one of the aspects under scrutiny. A thorough evaluation of the impact of platforms on labour markets should also investigate the quality of jobs offered via platforms. The COLLEEM survey collects some preliminary information about working hours, income earned, and general working conditions that allow us to check for gender differences.

A core dimension of the working conditions is the working hours. Figure 6 displays the density plot of the number of hours worked per week by occupation for both

men and women and for the total working activities both inside and outside the platform. Many platform workers work a total of 40 hours per week and more. These figures could be explained by the findings in Urzì Brancati et al. (2020, p. 52) suggesting that most platform workers have additional regular jobs and use digital labour platforms as a secondary source of income. On the contrary, if we only look at the working hours supplied via platforms, the vast majority of platform workers (about 44%) work less than 10 hours per week, and above 60% spend less than 20 hours in them, with almost no differences among occupations. Additionally, we find more women on the left-side of the distribution, indicating that more women work less hours.



**FIGURE 6:** Density plot of hours worked per week in the platform

Source: Authors' calculation on COLLEEM data

However, the number of hours alone does not give a full picture of work-life balance and job quality. It is important to evaluate whether labour is supplied during the regular working day or if platform work falls mainly within atypical or unsocial working hours. Table 1 reports information about the share of platform workers that declare to work long hours, at night or during weekends. Half of the platform workers, independent of their occupation and gender, declare to work long hours.



Similarly, about two thirds of them work mostly during the weekends (72%) and at night (68%), with little variation by occupation or gender, though women work a little more during weekends.

	<b>Night</b>	<b>Weekend</b>	<b>Long hours</b>
Freelance	69	70	52
Microtask	66	73	49
Software development	69	72	62
Transport & Delivery	67	73	55
On location	69	71	59
Men	68	71	54
Women	68	74	55
<b>Total</b>	<b>68</b>	<b>72</b>	<b>54</b>

**TABLE 1:** Share of platform workers with unusual working hours (in percentage)

Source: Authors' calculation on COLLEEM data

A second crucial dimension to gauge working conditions is income. Unfortunately, information about income is quite inconsistent due to the presence of many outliers. A thorough cleaning was necessary to extract a sample of coherent information.<sup>7</sup> Table 2 reports the average hourly payment by occupations for a limited sub-sample of 693 observations.

7. The dataset has been trimmed in the measure of three times the median value of payment by task and platform.

		<b>Mean</b>	<b>Median</b>
Freelance	<i>men</i>	15.78	10
	<i>women</i>	11.19	9.58
Microtask	<i>men</i>	10.59	8.96
	<i>women</i>	22.96	9.29
Software development	<i>men</i>	17.81	11.99
	<i>women</i>	45.35	10
Transport & Delivery	<i>men</i>	9.04	6.46
	<i>women</i>	8.8	8
On location	<i>men</i>	22.8	10
	<i>women</i>	10.96	8

**TABLE 2:** Average hourly payment (in euro)

Source: Authors' calculation on COLLEEM data

Although the information should be interpreted very carefully, it is interesting to notice that women are penalised in occupations that, by the nature of the platform and the task itself, require a full disclosure of their real identity (e.g., freelancers). On the contrary, for those platforms/occupations where workers may be considered as fungible (i.e., their identity is irrelevant for the assignment of the task – as it is, in the majority of microtask platforms – or the platform allows for the use of nicknames and fake identities, as in many computer programming platforms), the data hint at the presence of a gender pay gap favourable to women. Of course, the data are not sufficient to establish any causal relationship. However, recent studies confirmed cases of gender discrimination in terms of both payment and workers' evaluations.

As for the workers' evaluations, digital labour platforms have certainly revolutionised the tool, together with many other managerial practises. In a traditional working relationship, issues such as task assignment, worker's evaluation or conflict resolution were a prerogative of bosses, whereas, nowadays, platforms have outsourced this middle-manager role. In charge of this new role are either an algorithm (i.e., for task assignment) or the customers (i.e., evaluation by rating) through the dashboard of the platform. This dehumanisation of such managerial functions, by which we mean the lack of human interaction in their execution, may affect platform workers' working conditions in terms of access to tasks, increased level of monitoring and surveillance at work, remuneration and working time flexibility with consequences on their workers' well-being, autonomy, privacy, dignity and ability to work.

Finally, in order to understand how the organisation of work is changing in the platform economy and how it is affecting the working conditions. Table 3 gathers a series of indicators concerning various elements of work organisation (e.g., monitoring, rating, work pace) and specific psycho-social conditions of platform work (e.g., health, monotony, stress and social contact). Around 59% of platform workers are constantly monitored while providing their services through platforms. Two-thirds (69%) reckon that rating is important to get assigned a new task and assure a flow of work requests in the platform. On the positive side, 80% of platform workers declare to have enough flexibility in determining their work pace.

	Health risk	Monotonous	Stressful	Workpace	Monitoring	Rating	Social contact
Freelance	51	51	51	75	50	67	50
Microtask	42	53	46	80	56	68	53
Software development	53	55	50	77	59	71	63
Transport & Delivery	48	53	54	79	68	70	63
On location	50	52	51	87	63	72	69
Men	48	53	49	81	58	69	58
Women	46	53	51	79	59	70	58
<b>Total</b>	<b>47</b>	<b>53</b>	<b>50</b>	<b>80</b>	<b>59</b>	<b>69</b>	<b>58</b>

**TABLE 3:** Share of platform workers by work organisation and psycho-social conditions indicators (in percentage)

Source: Authors' calculation on COLLEEM data

As for the specific psycho-social conditions of platform work, although the majority of platform workers declare to be able to settle their own work pace, for half of the workers platform work involves a certain degree of stress, it is often perceived as monotonous and it only allows for reduced sociability. There are not significant differences by gender, except for women reporting less flexibility to choose or change the speed or pace of their work, and therefore feeling more stressed (51% of female platform workers report stress in comparison with 49% of male workers).

## Conclusions

Women represent already 4 out of 10 workers in the platform economy in Europe, but studies on this topic that incorporate a gender and feminist lens are still scarce. This research tries to fill this gap in knowledge and applies a feminist analysis to the study of platform work in 16 European countries. Our findings show

that female platform work is more prevalent in countries with traditional low female participation rates or where women tend to concentrate in non-standard forms of employment and low-wage jobs. This indicates that the platform economy is providing employment opportunities for the labour market integration of disadvantaged groups who lack better options. However, we also find that digital platforms continue to reproduce the notable gender inequalities present in the offline economy, which are reflected in women's lower work-intensity and earnings than men's, as well as in the strong occupational segregation. The segregation of platform work shows that technology is not neutral, and gender patterns in the platform economy echo those in the traditional labour market and wider economy. Women are concentrated in freelance, microtask and on-location services, such as the ones provided by domestic and carework platforms. Our results suggest the need for a new analytic approach to platforms, which emphasises labour force heterogeneity and worker dependence in platform work, which is consistent with recent studies by Eurofound (2020a) and Schor et al. (2020). We need detailed information on which specific tasks and conditions are assigned to different profiles of platform workers, and how this affects gender relations.

Secondly, our results contradict the assumption that platform work is used by women as an opportunity for combining work and care responsibilities. The presence of children decreases the participation of women in platforms, the time women can spend in the platform economy, and their income. Indeed, the growth in home-based telework during the COVID-19 pandemic exposed that work-life balance deteriorated particularly for working mothers, since they have borne the main brunt of increased domestic care responsibilities during the pandemic—because of work, school and childcare centre closures—as care responsibilities usually fall on them (Collins et al., 2020; Eurofound, 2020b; Stevano et al., 2021). As a result, women in Europe are more likely to have temporarily stopped working altogether than men (Eurofound, 2021). A feminist economic approach is thus necessary to understand how the platform economy intervenes on, changes, and reconfigures the organisation of productive and reproductive work. We need policies that address the critical situation in terms of social reproduction, gender relations and other socioeconomic inequalities. These policies are necessary prerequisites for women to take advantage of the potential benefits offered by the platform economy as much as men do.

Finally, since women are less likely to have another non-crowdwork job than men, and their work-intensity is lower, they are at a greater risk of vulnerability and exploitation. The challenge is to ensure effective labour protection for these new

forms of work with the objective of eliminating exploitative labour practices by platforms. A solution would be to establish a new set of universal workers' rights (Huws, 2021), including minimum guaranteed hours or income and adequate regulations, so that platforms can no longer implement exploitative work practices and widen the existing gender gaps.

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