

Is multidimensional precarious employment higher for women?

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Abstract

This article examines the relative employment situation of female employees from a novel perspective based on the construction of multidimensional indicators of employment precariousness that allows to examine its scale and nature. The evidence obtained for Spain shows that both the intensity and incidence of precarious employment are significantly higher for women, to the point that half of the women are multidimensionally precarious (with an incidence which is 40% higher than that of men) and precarious females simultaneously suffer on average from nearly 3 deficiencies in their jobs. Although female's employment precariousness is highly persistent over time, it also exhibits significant oscillations plausibly linked to changes in the economy's cyclical position and in labour market regulations. Moreover, it exhibits a great heterogeneity by subgroups (it has even an extreme nature for certain subgroups of females) and by individuals (25% of women suffer between 3 and 6 job deficiencies, which compares with 24% of women having jobs without any type of deficiency). Finally, although the greater labour precariousness of women is largely explained by their observed characteristics, particularly by their greater presence in part-time jobs, women still have a greater probability of being precarious than observationally similar men.

Keywords: gender gap; employment precariousness; quality of employment; multidimensional indices.

JEL Codes: J16, J21, J81.

1. Introduction

The worse labour performance of women is an element that for obvious reasons has received much attention in the literature. Although significant gender differences have been documented in a wide set of labour dimensions such as, for example, non-standard jobs, job training or career prospects (Presser et al., 2008; Eurofound, 2020), the aspect that has undoubtedly received the most attention is the gender wage gap, which has been profusely examined (Ponthieux and Meurs, 2015; Blau and Kahn, 2017; Joshi et al., 2021).

However, analyses focused exclusively on the monetary elements of jobs are insufficient for a complete understanding of labour market gender inequalities, *inter alia* because there is no strong empirical support that, as suggested by the theory of compensatory differences, non-monetary aspects compensate for differences in wages (Bonhomme and Jolivet, 2009; Fernandez and Norman, 2009). Actually, in the case of women there may be even less compensation between these elements than for other groups, so that accounting for non-monetary attributes of jobs accounts for very little or actually exacerbates the measured gender wage gap (Redmond and McGuinness, 2019; Maestas et al., 2018)¹. Moreover, in a similar vein, analyses of gender labour differences focused on non-monetary elements usually focus on some specific, separate aspects of labour market conditions (with a few exceptions, such as Ledic and Rubil (2021), which propose a composite indicator including both aspects). Therefore, although they provide evidence of undoubted interest, it is fragmentary and offers only a partial perspective on women's relative employment situation, without integrating monetary and non-monetary aspects.

In this context, the aim of this article is to examine the relative position of women in the labour market from a novel approach based on the use of multidimensional indicators of labour precariousness that aggregate information on a varied set of monetary and non-monetary labour dimensions. This novel multidimensional perspective is based on the methodology of Alkire and Foster (2011), a technique that although was originally designed for the empirical analysis of poverty from the perspective of multidimensional states of deprivation (e.g., Alkire and Santos, 2014 and UNDP, 2019), given its flexibility and advantages has also been subsequently employed to examine multidimensional phenomena in other fields of research.

The multidimensional perspective for analysing employment precariousness is in line with the increasing use of composite indicators for the examination of different economic phenomena, although they are less significant in the area of labour market and labour analysis (Greco et al., 2019 and Kuc-Czarnecka et al., 2020). On the other hand, it is also in line with how labour precariousness, one of the most relevant issues in the context of labour relations and policy, has been examined in the literature, *i.e.*, as a multidimensional phenomenon through a broad set of attributes associated with poor job quality (Kreshpaj et al., 2020). Consequently, the analysis of gender labour inequalities focusing on multidimensional precariousness is particularly interesting, as its particular focus on the segment of the labour market with problems in job quality offers a complementary perspective to previous studies using composite indicators focusing on the average job quality of men and women.

The multidimensional precariousness indicators considered in this article are based on a set of 6 individual indicators of potential job deficiencies (low monthly wage, low hourly wage,

¹ A recent literature analysing time use surveys has also shown the obstacle that unpaid care work represents for women's participation in the labour market and its contribution to gender gaps (see, for instance, Charmes, 2019).

fixed-term contract, involuntary part-time, overqualification and extended/atypical working time) grouped into 3 dimensions (labour income, job stability, and other job characteristics) which correspond to the most relevant areas for measuring job quality according to the OECD (OECD, 2014 and 2018a). The approach allows to obtain a quantitative measure of the incidence of job precariousness (how many workers do they suffer from job precariousness), its intensity (how many undesirable attributes do their precarious jobs display), and its scope (as a combination of incidence and intensity). It also provides disaggregated information by dimensions and groups on the phenomenon, which allows for an in-depth examination of gender differences in job precariousness.

As an illustrative application, we develop an empirical examination based on microdata for the Labour Force Survey (*Encuesta de Población Activa*) for the Spanish labour market, a particularly interesting case of analysis for labour gender inequalities for several reasons. On one hand, because the labour market in Spain exhibits traditionally a dysfunctional nature and high levels of labour precariousness due, inter alia, to its traditional deficient regulation and its recent flexibilization (Bover et al., 2000; Bentolila and Jimeno, 2012; Kretsos and Livianos, 2016; Cárdenas and Villanueva, 2021). On the other hand, because there is ample evidence that women in Spain exhibit clear disadvantages in several individual labour dimensions, such as lower employment rates and wages, a higher incidence of involuntary part-time, and a significant segregation in worse industries and occupations (Cebrián and Moreno, 2015; Arrazola and De Hevia, 2016; Guner et al., 2014; Brindusa et al., 2019; Távora y Rodríguez-Modroño, 2018). From this perspective, the Spanish case can also be to some point representative of Southern European countries that share both labour institutions with certain similarities² and parallel responses to the sovereign debt crisis during the period 2008-2012 that could have affected women's performance in the labour market in a similar way (Perez and Matsaganis, 2018; Afonso, 2019).

As for the choice of the individual labour indicators, it is important to note that although precarious employment tends to be considered currently in the literature a multidimensional construct characterized by an accumulation of unfavourable features of employment quality, there is actually no consensus on what individual indicators it should be measured (see e.g. the recent systematic review of previous studies on precarious employment in different research disciplines of Kreshpaj et al., 2020).³ Consequently, the choice of individual job indicators that reflect potential employment deficiencies is guided by different criteria. Firstly, they correspond to job aspects where gender inequalities have been widely documented in the literature. Secondly, the indicators try to reflect properly the main problematic general aspects of employment quality in the Spanish labour market (namely, a high incidence of low-wage employment and involuntary part-time work added to more traditional problems of low job quality, such as the very high relative incidence of fixed-term jobs and overqualification). These aspects might have been even exacerbated after both the Great Recession and the approval in 2012 of major regulatory changes that significantly increased labour flexibility (e.g., Malo, 2015; OECD, 2015, 2018b; and International Monetary Fund, 2018). Thirdly, they capture objective features of the jobs available in the data, which is recommended as opposed to the alternatives of using workers' subjective evaluation of these attributes of the jobs (Muñoz de Bustillo et al., 2011; OECD, 2017). Finally, they pertain to some of the 3 monetary and non-monetary dimensions (labour

² It should be considered, yet, that although similar if compared as a homogeneous cluster against other clusters of countries, Mediterranean labour market institutions can show in certain cases significant differences among countries (e.g., Molina and Rhodes, 2007 and Picot and Tassinari, 2017). We are grateful to an anonymous reviewer for this observation.

³ As a matter of example of the extent of diversity of potential individual labour indicators that could be used to measure employment precariousness, Kreshpaj et al. (2020) find in their literature review with a thematic-analysis on quantitative and qualitative studies on employment precariousness 145 sub-themes grouped into 9 themes that can be grouped, in turn, into 5 basic dimensions of precariousness.

income, job stability, and other job characteristics) that correspond to the most relevant areas for measuring the quality of employment according to the current OECD Job Quality approach (OECD, 2014 and 2018a).

In a nutshell, the illustrative evidence for Spain shows that both the intensity and incidence of precarious employment are very high for females (about half of all female employees are multidimensionally insecure and they suffer from about 3 job deficiencies on average at the same time) and in both cases both dimensions of the phenomenon are significantly higher than for men. Consequently, overall multidimensional precariousness in the Spanish labour market is determined to a greater extent by the scope of the phenomenon for females. On the other hand, there exists a very high heterogeneity in the levels of precariousness among females, so that certain specific groups of women, such as those employed part-time or in the primary sector, suffer from severe precariousness. Finally, a decomposition analysis shows that the higher job precariousness of women is mainly explained by their occupational and industry segregation and, very especially, by their higher presence in part-time jobs, although women would show higher precariousness even if they had the same observed characteristics than men.

The rest of the article is organised as follows. After a brief review of the related literature offered in Section 2, the methodology used to obtain the multidimensional indicators of precariousness and the data used for the empirical analysis are presented in Section 3. Section 4 provides the results regarding the relative precariousness of women in the Spanish labour market. Finally, the conclusions section discusses the main findings of the research.

2. Literature review

Labour precariousness is one of the most relevant issues in the context of labour relations and policy (e.g., International Labour Organization, 2011), as, inter alia, it particularly affects vulnerable groups in the labour market, such as women or immigrants (Fudge and Ownes, 2006; Bhalla and McCormick, 2009). Although there is no generally accepted definition and approach to employment precariousness in the literature (e.g., Olshtoorn, 2014 and Kretsos and Livanos, 2016), there are, however, some common points in the studies dealing with the analysis of this topic. These include to take into consideration the attributes of jobs, by contrast to other perspectives that consider workers' personal circumstances or even pose job precariousness as a social class (Campbell and Price, 2016); to approach precariousness as a multifaceted phenomenon that requires a multidimensional perspective (Kreshpaj et al., 2020); and to examine precariousness through a varied set of job attributes associated to the non-standard status and poor quality of jobs, as compared to the alternative of focusing only job instability or insecurity (Rodgers and Rodgers, 1989; Kalleberg, 2009; Fullerton et al., 2011; Vosko, 2006).

Employment precariousness can be also understood from the perspective of the segmented labour market theory (Reich et al., 1973; Piore, 1975; Leontaridi, 2002). According to the simplest version of this theory, the labour market is not homogeneous but contains two different, separate segments, which tend to be self-contained, given the existence of certain barriers that prevent mobility between them.⁴ On one hand, the primary (or independent) labour market, which offers jobs with attractive traits such as high wages, good working conditions, job stability and career prospects. On the other hand, the secondary (or subordinate) labour market, which offers jobs with poorer working conditions and, hence,

⁴ Although the first formulation of the models related to this theory divided the labour market into two self-contained segments, the primary and the secondary segment (e.g., Doeringer and Piore, 1971), subsequent models that emerged later included a larger number of segments (e.g., Lee and Wrench, 1987 and Gittleman and Howell, 1995).

clearly related to precariousness. The empirical literature on this field has shown that more vulnerable groups, such as women, tend to be trapped into the worse relative labour market segment (see, for example, Kenrick, 1981 and Leontaridi, 2002).

Studies analysing women's relative employment situation and precariousness usually focus on separate aspects of labour market conditions, being very scarce the studies using composite indicators to provide a broad perspective. Among the few exceptions, Ledic and Rubil (2021) examine the gender gap in job quality for recent university graduates in 19 European countries as an illustrative empirical application of a novel framework for analysing inter-group gaps in multidimensional job quality through the so-called 'equivalent wage', a measure combining wage and multiple non-wage job dimensions (as measured by subjective evaluation of objective features of the jobs) in accordance with preferences over jobs as combinations of job dimensions. The authors develop a decomposition of the average values by gender of the equivalent wage finding, *inter alia*, that equivalent wage gaps are significantly larger than wage gaps, as well as women generally give greater importance to non-monetary aspects of jobs in their preferences. In the same vein, Antón et al. (2020) examine the relative labour market position of men and women across Europe with a widespread perspective through a set of composite indicators of job quality made mainly from subjective indicators, although they do not include wages and focus exclusively on non-monetary aspects. Comparing the mean values by gender of the indicators, they find a mixed scenario where the gender gap varies quite much across the different dimensions and females face relevant disadvantages in certain domains (skills and discretion and prospects), but they enjoy better conditions in others (physical environment, working intensity, and working time quality).

The multidimensional perspective offered by the methodology of Alkire and Foster (2011) and applied in this study has been used to examine multidimensional phenomena in different field of research such as economic insecurity, energy poverty, multidimensional affluence or housing poverty (Cantó et al., 2020; Aristondo and Onaindia, 2018; Peichl and Pestel, 2013; Ulman and Cwiek, 2020). Although there are also some precedents for the use of this methodology in the labour market analysis, they are rather scarce. Hence, García-Pérez et al. (2017) proposed the construction of multidimensional indices of labour precariousness with this technique but considering only a reduced set of 3 job attributes. In turn, García-Pérez et al. (2020) introduced as a methodological novelty as regards multidimensional indices of labour precariousness the use of hedonic weights for a broad set of job indicators, although they were not grouped into dimensions, which prevents the identification of particularly problematic labour areas. Subsequently, this technique has been used for the analysis of multidimensional labour precariousness by Sehnbruch et al. (2020) and Orfao et al. (2021) for a set of Latin American countries and the group of young people in European countries, respectively.

Regarding the different individual job indicators encompassed in the multidimensional indicators proposed in this study, there is ample evidence in the literature on the existence of significant gender differences in both monthly and hourly wages, due to elements such as female firm and occupational segregation and gender differences in the distribution of working hours and career promotion (e.g., Blau and Kahn, 2017; Goldin, 2014; Goldin and Mitchell, 2017). A higher incidence of part-time employment and fixed-term jobs for females has also been documented, due to factors such as the unequal distribution by gender of household work and care-giving responsibilities and occupational segregation (e.g., Cutillo and Centra, 2017; Herrera et al., 2019; Petrongolo, 2004; International Labour Organization, 2017; Addabbo and Favaro, 2012; McDonald, 2016). In the same vein, several papers suggest that educational mismatch is more frequent among women, with empirical evidence suggesting that higher female overeducation could be related to family responsibilities and that it implies high wage penalties (McGoldrick and Robst, 1996; Büchel and Battu, 2003; Salinas-Jiménez et al., 2013). Regarding gender differences in atypical working hours, women

are in general less inclined to extend their working hours or to work atypical working hours, with this lower willingness of females to work at any time having important implications, such as a strong pay penalty (Goldin, 2014; Cha and Weeden, 2014; Cortes and Pan, 2019).

3. Methodology and Data

This section describes the elaboration of the multidimensional labour precariousness indices based on the identification of employment deficiencies, within the framework of the application of the methodology proposed by Alkire and Foster (2011), and the data used in the empirical analysis. In short, the starting point in the application of this methodology is the selection of the individual job indicators potentially associated with labour precariousness and the conditions to identify a deficiency in each of them. Subsequently, for each employee the total number of deficiencies weighted according to the relative weights set for each individual indicator is calculated, so that the comparison of the number of weighted deficiencies with a reference threshold determines whether or not the employee is multidimensionally precarious. Individual information is then aggregated into global measures of precariousness that approximate the incidence of precarious employment (i.e., how many employees are affected), its intensity (the number of deficiencies that precarious jobs exhibit on average) and the Multidimensional Labour Precariousness Index, which incorporates both incidence and intensity into a single measure.

3.1. Identification of multidimensional precariousness in individual jobs

The elaboration of indices to identify whether each job is in a situation of multidimensional labour precariousness requires first selecting the labour indicators potentially associated with precariousness, as well as the variables that allow them to be measured. A specific threshold must also be set for each indicator, below which a job is considered to have a deficiency. Thus, if X_{ij} is the observation of job i in indicator j (with $i=1, \dots, N$ and $j=1, \dots, D$) and Z_j is the threshold established for the indicator, then job i presents a deficiency in indicator j if $X_{ij} < Z_j$. In the case of qualitative dichotomous variables, a job exhibits deficiencies in the individual indicator if it fulfils a certain condition.

The next step is to assign the corresponding weights to job indicators and to calculate the indicator P (*adjusted weighted precarity count*) which synthesizes the total proportion of (weighted) deficiencies of the job i as:

$$P_i = \sum_{j=1}^D w_j I_{ij} / D \quad \text{para } i = 1 \dots N \quad (1)$$

Where $I_{ij} = I_{\{X_{ij} < Z_j\}}$ is an indicator function that takes the value 1 if the condition between the keys is true and 0 in all other cases; w_j is the weight assigned to each indicator and N is the total number of jobs. Weights w_j are standardized so that their sum is equal to the total number of indicators D and the indicator P_i is standardized, so it takes values between 0 and 1 (value 0 corresponds to jobs without any deficiency and 1 to jobs with deficiencies in all the individual indicators).

In the context of a dual cut-off method, the identification of multidimensionally precarious jobs also requires setting an alternative threshold, k , so that a job i is considered to be multidimensionally precarious if $P_i \geq k$. Different multidimensional thresholds can be used in practice, in a range between the extreme criteria of considering that a job is precarious if it exhibits a deficiency in a single (weighted) indicator ($k \geq \min \{w_1, \dots, w_D\} / D$; union approach) or, alternatively, in all of them ($k=1$; intersection approach).

3.2. Global measures of multidimensional labour precariousness

From an aggregate perspective, the incidence of precariousness on all employees can be measured by the multidimensional precariousness rate, H :

$$H = \frac{\sum_{i=1}^N I_i}{N} \quad (2)$$

Where $I_i = I_{\{P_i \geq k\}}$ is an indicator function that takes value 1 if the individual job i is considered multidimensionally precarious (i.e., if $P_i \geq k$ is fulfilled). Consequently, H measures the proportion of all employees which are precarious from a multidimensional perspective.

The intensity of precariousness is measured, in turn, by the ratio of the average number of deficiencies of multidimensionally precarious jobs to the maximum number of potential shortcomings, A :

$$A = \frac{\sum_{i=1}^N I_i P_i}{\sum_{i=1}^N I_i} \quad (3)$$

The Multidimensional Labour Precariousness Index (from now on MLPI) is calculated by combining both the incidence and the intensity of precariousness, resulting in the product of both. This indicator is equivalent to the *adjusted multidimensional rate* (M_0) in Alkire-Foster's methodology and is defined as the total sum of the proportion of deficiencies of multidimensionally precarious jobs divided by the total number of jobs, N . Consequently, the MLPI is the product of H times A :

$$MLPI = \frac{\sum_{i=1}^N I_i P_i}{N} = HA \quad (4)$$

The MLPI provides the relationship between the total number of deficiencies in multidimensionally precarious jobs and the maximum number of deficiencies that could hypothetically exist if all jobs had all the deficiencies simultaneously. The MLPI takes values between 0 and 1, with 0 corresponding to a situation without any multidimensionally precarious job and 1 to an extreme case where all jobs in the economy are precarious and present all potential deficiencies.

A salient feature of the MLPI is that it is decomposable both by population subgroups and by indicators, which ultimately facilitates the examination of the causes of overall labour precariousness. This is so because in the first case the MLPI is the average (weighted by its relative share) of the MLPI of the population subgroups, while in the case of the indicators it is the weighted average of the proportion of employees who are precarious and have a deficiency in each indicator (see Alkire and Foster, 2007 and 2011 for details).

3.3. Dimensions, indicators, and thresholds

The global indices for examining multidimensional precariousness in Spain are divided into 3 dimensions and are composed of 6 indicators (Table 1). The choice of the indicators is guided by the current OECD approach to measuring the quality of employment. We thus consider 3 alternative dimensions, related to labour income, employment stability, and other working conditions (OECD, 2014 and 2018a).

The first dimension considered in the MLPI is therefore related to labour income and is made up of two indicators. The first identifies a deficiency when the gross monthly income of the main job is lower than 1,200 euros, while the second does so when the hourly wage is

lower than 60% of the median wage of the economy. The consideration of two alternative labour income indicators is in line with the OECD approach that gives relevance to this issue both in absolute and relative terms (OECD, 2014 and 2018a). The second dimension is related to employment stability/contractual situation and is also made up of 2 indicators. The first identifies a deficiency when the worker's contract is fixed-term and the second identifies it when the worker works part-time involuntarily because of the impossibility to find a full-time job. Finally, the third dimension corresponds to other employment conditions and is also made up of 2 indicators that measure, respectively, whether the worker is overqualified (this situation is identified by means of a statistical approximation, corresponding to those individuals with higher level of studies than the most frequent level in their occupation) and if the working day is excessive or atypical (either because the individual usually works more hours than those agreed in the individual contract or collective agreement, or because he/she habitually works at night, at weekends, or on shifts).

In the elaboration of the Multidimensional Employment Precariousness Index, the same relative weights (w_i) are assigned to the 6 indicators of job attributes (1/6) and, by extension, to the 3 dimensions into which they are grouped (1/3). Although there is no consensus in the literature when it comes to set these relative weights, the use of the same weights for each indicator is by far the most common approach in the construction of composite indicators (OCDE, 2008; Bandura, 2008). Even if it can be considered arbitrary, it is justified both by its simplicity and by the absence of alternative criteria without shortfalls (Decanq and Lugo, 2013; Greco et al., 2019). On the other hand, in order to classify a job as multidimensionally precarious, a threshold equivalent to 33% of the individual job indicators has been used ($k=0.333$), which implies that the job must have at least 2 deficiencies.

To conclude, insofar as the values of the MLPI are only interpretable in normative terms, we propose to consider different degrees of global multidimensional precariousness according to different ad hoc thresholds. Thus, the MLPI would reflect a *moderate* precariousness when it is lower than or equal to 0.11 (that particular threshold is equivalent to a situation where 1/3 of employees are multidimensionally precarious and suffer from 1/3 of possible deficiencies in jobs); *intense* when it takes values between 0.12 and 0.25 (this latter threshold corresponds to a combination of 1/2 of precarious employees with 1/2 of the possible job deficiencies); *severe* when it is between 0.26 and 0.44 (the 0.44 threshold corresponds to 2/3 of precarious employees with 2/3 of the potential deficiencies); and *extreme* when it takes values higher than a threshold of 0.44.

3.4. Data

The multidimensional set of labour precariousness indices are calculated for Spain on the basis of microdata from the Labour Force Survey (from now on LFS), prepared by the Spanish National Institute of Statistics. This survey is the most complete source of labour data for this country and includes rich information on the attributes of jobs that allows for the adequate measurement of multidimensional labour precariousness, considering for this purpose a wide set of indicators corresponding to the different dimensions of interest. The LFS is a survey aimed at households whose main purpose is to obtain information regarding the labour market, and its preparation is based on the definitions and criteria established by the International Labour Organisation, which allows for homogeneous comparison with other countries. The empirical analysis in the article is based on the microdata for the annual subsample of the LFS corresponding to 2019, corresponds to the main job of individuals and is restricted to employees. The main analysis corresponds to 2019 (a temporal analysis is also developed for the period 2006-2019) and the working sample for this year is composed of 31,595 observations, 16,086 males and 15,509 females. The sample weights provided by the survey have been considered, so that the results are representative for the entire employee population in Spain.

4. Results

4.1. General analysis

Table 2 contains information on the presence of deficiencies in each of the 6 individual job indicators that may reflect a situation of employment precariousness, separately for men and women, in 2019. It shows that the presence of attributes associated with poor job quality is relatively significant for most of the indicators and shows significant differences by gender, so that women tend to have a generally higher incidence of job deficiencies for all indicators, with the sole exception of long or atypical working hours. Thus, with regard to the indicators associated with the first dimension of precariousness (*labour income*), 33.1% of women receive a low monthly wage, compared with only 15.3% of men, while 12.7% of women receive hourly wages of less than 60% of the median hourly wage, compared with 9.4% of men. This is also the case for the second dimension (*job stability/contractual status*), where temporary employment also affects more women (27.1%) than men (25.7%) and in the case of involuntary part-time work its relative incidence for women (13.9%) is three times higher than for men (4.6%). The same is true for the first indicator included in the third dimension (*other employment conditions*), where overqualification affects 33.6% of women compared to 24.9% of men. The only indicator where there are fewer job deficiencies for women is atypical working hours, although this job deficiency also affects a very high percentage of women (38.6%, compared to 42.2% of men).

Table 3 presents the estimated values for the aggregate indicators of multidimensional precariousness disaggregated for men and women in 2019. These correspond to the incidence of the phenomenon, measured by the rate of multidimensional precariousness (H); its intensity, measured by the average proportion of deficiency in multidimensionally precarious jobs (\mathcal{A}); and the MLPI (the product of H times \mathcal{A}). As noted in the methodology section, these indicators have been obtained using the same weights for the 6 employment indicators and a value of $k=1/3$ (or, alternatively, 2 deficiencies out of 6) for the threshold that makes it possible to identify whether a job is precarious from a multidimensional perspective. The lower part of the table contains the contribution of the relative contributions of men and women, respectively, to the values of H and the MLPI for the whole population.

The incidence of multidimensional employment precariousness is much higher for women, with up to 45.5% of Spanish female employees in precarious employment, which is around 40% more than men (32.2%). Both groups also show a very high intensity of precariousness, although it is again higher for women (47.1%) than for men (44.2%). The levels of intensity observed imply that multidimensionally precarious female employees have jobs that suffer on average from about half of the maximum possible number of 6 job deficiencies, which implies that a typical precarious female worker has a job with about 3 simultaneous deficiencies (which is equivalent to, for example, having at the same time a temporary contract, a wage of less than 1,200 euros and an involuntary part-time job, where the three situations would add up to 50% of the maximum possible number of 6 deficiencies).

The MLPI takes a value of 0.142 for male employees (the result of multiplying 0.442 by 0.322) and 0.215 for women, being both statistically different from zero according to conventional significance levels. Although in both cases, the indicator reflects according to the thresholds defined for this purpose a general situation of intense precariousness for both men and women, the value of the MLPI for women is relatively close to the threshold that determines severe precariousness. In turn, both in the case of the indicator of incidence H and in the extent of precariousness reflected by the MLPI, its values are determined to a

greater extent by the multidimensional precariousness of women (around 60%) than by that of men (around 40%), which reveals that this is a mainly female phenomenon.

The values of the multidimensional indices of precariousness for the years 2006 to 2019 are shown in Table 4 and Figure 2, respectively. According to this temporal evidence, females' employment precariousness has remained at consistently high levels in recent decades (the incidence varied in the period in values between 44% and 48.5%, whereas the intensity of precariousness varied between 45.7% and 49.2%), indicating that the phenomena may have a structural nature. Yet, some significant oscillations over time are also observed, with different stages in the evolution of precariousness plausibly linked to adjustments in the economy's cyclical position and changes in labor market regulations. The first stage would correspond to the expansionary era leading up to the Great Recession of 2008–2009, when there was a notable decrease in the levels of precariousness (the MLPI fell from 0.227 to 0.208). A second stage would cover the double-dip crisis that in Spain followed the Great Recession and that lasted until 2013 (during which a significant labor reform was passed in 2012 that increased labor flexibility and resulted in a general deterioration of workers' working conditions: see, for example, OECD, 2013), throughout which there was a marked rise in precariousness (precariousness intensity in that stage increased from 45.9% to 49% and the MLPI from 0.208 to 0.230). A third stage would correlate to the post-double-dip crisis expansionary scenario, in which levels of multidimensional employment precariousness remained relatively stable, in contrast to the preceding expansionary stage, during which employment precariousness decreased. Finally, 2019 saw a significant reduction in precariousness, at the same time as a number of regulatory changes were approved (i.e. a significant increase in the minimum wage and the approval of mandatory recording of employees' working hours by companies).

One advantage of the Multidimensional Labour Precariousness Index is its decomposability. Table 5 contains hence the results of its decomposition according to the relative contribution of each of the 6 indicators and 3 dimensions that comprise it. The dimension that has a greater quantitative weight in precariousness in Spain is systematically that associated with other employment conditions, with a greater influence in the case of men (employment precariousness in this area explains 46.1% of total male employment precariousness) than in the case of women (38.8%). On the contrary, in the case of the dimension associated with labour income its relative importance is greater for women (33.5% compared to 27.2%), while in the case of job stability/contractual status the situation is relatively balanced (26.7% for men and 27.7% for women). In line with these results, there are also marked differences in the relevance of individual job indicators, being particularly prominent for women monthly wages below 1,200 euros, overqualification and atypical working hours (the 3 elements account for two thirds of female employment precariousness, with a relatively balanced contribution of each one), while in the case of men temporary employment, atypical working hours and overqualification are particularly important (accounting for almost 70% of male employment precariousness).

Table 6 contains the distribution of males and females, respectively, according to the weighted number of deficiencies in their jobs. It is remarkable that only 24.1% of female employees in Spain do not suffer from any type of job deficiency (the corresponding figure for males is 31.1%). An additional 30.3% of females exhibit one deficiency and, they are not in a situation of multidimensional labour precariousness, they can therefore be considered to be at risk of precariousness. Finally, among females employees who are in multidimensional precariousness (as previously indicated, 45.5% of the total), there is also a significant heterogeneity in the incidence of the phenomenon. Hence, while 20.8% of all female employees have two job deficiencies, 24.7% of them have between 3 and 6 deficiencies.

In order to deepen the analysis of the heterogeneity of the phenomenon, Table 7 contains in turn the multidimensional indicators of precariousness calculated separately, disaggregated according to different characteristics, together with a qualitative assessment of the degree of precariousness according to the scale proposed by the MPPI values and the various reference thresholds. Thus, although in general in most of the categories considered the extent of women's multidimensional employment precariousness can be considered intense, coinciding with the finding for the whole group of female employees, there is a very notable heterogeneity, with MLPI values ranging from 0.045 (women employed in armed forces), which implies a moderate degree of insecurity, to 0.421 (women employed in unskilled occupations), which implies extreme insecurity. The discrepancies between the groups are due especially to the differences in the incidence of precariousness, which are comparatively much more pronounced (with extreme values ranging from 0.112 for armed forces to 0.839 for part-time jobs), than in the intensity of precariousness, where the values generally exhibit less variation (the extreme values here are 0.403 and 0.531, for skilled occupations and part-time jobs).

4.2. Decomposition of gender differences in multidimensional employment precariousness

The evidence obtained so far confirms that women suffer significantly higher levels of multidimensional precariousness in terms of both incidence and intensity (and, consequently, also in terms of MLPI, which combines incidence and intensity). In order to further analyse the origin of gender discrepancies in these multidimensional indicators, Table 8 contains the result of applying the Oaxaca-Blinder decomposition technique (Oaxaca, 1973 and Blinder, 1973) to gender differences in the incidence and, alternatively, in the intensity of multidimensional employment precariousness.⁵ This technique can be applied to both quantitative and qualitative indicators of a binary nature and has important advantages over alternative techniques such as ordinary least squares or logit/probit models. On one hand, it permits quantifying how much of the differences are explained by the fact that men and women differ in their observed characteristics (characteristics component) and how much of the differences cannot be explained by this element (returns component). On the other hand, it provides a detailed decomposition of the raw differences, thus providing information on the contribution of each subset of explanatory variables. Although this is a technique originally designed for its application to continuous variables, such as the case of the intensity of precariousness, an adaptation of the technique for use with qualitative variables has been used for gender differences in the incidence of precariousness (which at the level of each individual is measured by a dichotomous variable that identifies whether his/her job is multidimensionally precarious).

Table 8 contains the value of the two components resulting from the application of the decomposition, as well as the detailed results of the characteristics component according to the contribution of the different sets of explanatory variables. These have been obtained for two models, one where only characteristics of individuals related to their socio-economic attributes and human capital are considered (model 1) and the other where characteristics of jobs, firms and the territorial environment are additionally included (model 2), using in both cases the structures of returns for the joint sample of men and women as reference structures in the decomposition (see Oaxaca and Ramson, 1994 and Neumark, 1988)⁶. Table A.1 in the appendix contains the summary statistics of the explanatory variables used in the decomposition. Men and women show significant differences in many individual and

⁵ This same approach has been applied in similar contexts for the decomposition of the gender gap in different aspects such as job satisfaction (Dilmaghani, 2021).

⁶ Unfortunately, the anonymised LFS microdata do not contain the information that would allow identifying parents with dependent children, a variable that would be clearly relevant in this context in order to properly correcting for the sample selection bias with a reliable selection equation (Heckman, 1979).

occupational attributes, so that these differences in characteristic endowments are a potential explanatory element of their different levels of precariousness.

The results of the decomposition of gender differences in the employment precariousness indices using the Oaxaca-Blinder methodology reveal that the bulk of gender differences in both the incidence and intensity of employment precariousness are due to the fact that men and women employees differ in their characteristics, especially in those associated with their jobs (Table 8). Hence, almost the entire value of the gap with model 1 is due in the case of both indicators to the unexplained component, with a low explanatory capacity of the characteristics component, which overall shows a low impact of differences in individual characteristics. With model 2, on the contrary, a very large part of the observed differential is explained by the characteristics component both in the incidence of precariousness (91% of the differential) and in its intensity (100% of the differential). The disaggregated results of the characteristics component in model 2, on the other hand, confirm that the most relevant elements in the explanation of gender differences in multidimensional employment precariousness are the segregation of women in worse occupations and industries and, especially, in part-time jobs. Actually, these 3 elements together explain 76% of the gender differences in the incidence of employment precariousness and more than 100% of the differences in intensity, with a particularly relevant role for segregation in part-time jobs, which explains 50% and 106% of the differences between men and women in these indicators, respectively.

In the case of the returns component, although it is not statistically different from zero in model 2 in the case of intensity, it is statistically significant at conventional levels for the incidence of precariousness. Although in quantitative terms its value is not very prominent (it explains a higher incidence of employment precariousness of 1.2% for females, which implies 9% of the unadjusted differences in the incidence between men and women), this finding indicates that even when comparing observationally similar men and women with exactly the same observed characteristics both in terms of individual attributes and job and firm characteristics, women suffer on average a higher incidence of multidimensional job precariousness.

In order to extend this analysis, Table 9 contains the results of the decomposition with the Oaxaca-Blinder methodology of gender differences in the incidence of each of the 6 dichotomous individual job indicators that make up the multidimensional indicators of precariousness (using in this case just the more complete specification of model 2). This evidence reveals that the higher incidence of deficiencies that female jobs generally tend to exhibit (the only exception being the incidence of long or atypical working hours) is explained to a significant extent by gender differences in the observed characteristics (in particular, 74% for the incidence of low monthly wages, 79% for low hourly wages, 43% for fixed-term contracts and involuntary part-time employment, 94% for over-qualification, and 0% for long or atypical working hours). However, the returns component is also statistically significant in most cases, becoming quantitatively relevant in several of them. Thus, when compared to men with the same characteristics, women have a higher incidence of low monthly wages (4.4%, explaining 25% of the unadjusted difference), low hourly wages (0.7% and 21%), fixed-term work (0.8% and 57%), involuntary part-time work (5.3% and 57%) and, to a lesser extent, overqualification (0.5% and 6%). As indicated, the main exception to this pattern is found with long or atypical working hours where, in line with previous findings in the literature, women exhibit a lower incidence of long or atypical working hours. Very interestingly, differences by gender in observed individual and job characteristics have no explanatory power difference of differences in this indicator, so that they are fully explained by unobserved elements, which is in line with a potentially relevant impact of gender role imbalances (e.g., Jacobs and Gerson, 2001 and Cotter et al, 2011).

5. Conclusions

The aim of this article is to examine the relative employment situation of women from a novel perspective based on the construction of multidimensional indicators of employment precariousness. These indicators aggregate information on a broad set of individual objective labour indicators of both monetary and non-monetary nature that capture potential job deficiencies and ultimately provide a quantification of the incidence, intensity and scope of multidimensional precariousness. In addition, they also offer disaggregated information by dimension and group, which together provide a novel assessment of the nature of gender inequalities in the labour market that may be particularly useful from an economic policy perspective. The empirical analysis is developed for Spain, a very interesting case of analysis of gender differences in labour precariousness due both to the traditionally dysfunctional functioning of its labour market and the high levels of precariousness that characterize this country, and to the worse relative situation documented there for women in many dimensions of work. It is carried out using objective labour indicators from micro-data from the annual sub-sample of the *Labour Force Survey*. This database is equivalent to those existing in many other countries, so that international comparability among potential future studies is ensured.

The obtained evidence shows that women have on average jobs with worse characteristics in virtually all the individual job dimensions examined, with the sole exception of a lower relative incidence of long or atypical working hours. This is reflected in significantly higher values for the overall multidimensional indicators of precariousness, so that in aggregate terms women suffer comparatively both a higher intensity and, very especially, a higher incidence of employment precariousness. Actually, nearly half of all women employees are in a situation of multidimensional employment precariousness, with an incidence which is 40% higher than that of men, and women in precarious employment have jobs that on average suffer from nearly 3 deficiencies at the same time. Consistent with these findings, the extent of overall multidimensional precariousness in the Spanish labour market is determined to a greater extent by the precariousness of women, so overall it emerges as a mainly female phenomenon.

Also noteworthy is the great heterogeneity observed in the levels of precariousness among the different groups of females. Thus, although the extent of employment precariousness for all women can be considered intense according to the values of the multidimensional precariousness indicators, this aggregate result hides very varied situations by subgroups of female employees. Consequently, while certain specific groups of females, such as those employed in skilled occupations or in the public sector, experience a moderate level of precariousness, others, such as those employed part-time or in the primary sector, suffer extreme levels of the phenomenon.

Finally, a decomposition analysis of the gender differences in the global multidimensional indicators of precariousness shows that the greater female precariousness is fundamentally explained by the segregation of women in certain segments of the labour market, highlighting in this respect the great impact of their occupational and industry segregation and, especially, of their greater presence in part-time jobs. However, the evidence also shows that women are more likely to have multidimensionally precarious jobs than observationally similar men, a circumstance that is also observed when the decomposition is carried out for most of the individual labour indicators that may reflect job deficiencies.

Overall, this novel type of evidence can help to improve knowledge of the employment situation of women in any labour market and be particularly useful as a guide for labour policies from an economic policy perspective, as it boosts information about labour market

inequalities available to policymakers. More specifically, there are several reasons why measuring the level of precariousness through multidimensional indicators can be relevant from a policy perspective. Firstly, because it can help to put into the policy makers agenda a problem, that of the particularly intense employment precariousness suffered by women, that very often is only considered from partial perspectives and to take into account the potential synergies between the different policy measures and their impact on female's labour market outcomes. Secondly, the identification of those specific groups of female workers with higher levels of employment precariousness can also help identifying specific sectors or occupations where there is a weak enforcement of those regulations adopted to fight precariousness or an inappropriate functioning of sector/firm specific actions such as gender equality plans. Moreover, providing information about the relative advantages of some sector/occupations can also provide useful guidance to jobseekers and orientation services in order to define career paths for young female workers. Lastly, the previously mentioned comparability over time and countries that offers the proposed methodological approach can also help to carry out comparative case studies with the aim of properly evaluate policy measures.

To conclude, one of the limitations of the study is that, although the general analysis that has been carried out provides interesting evidence on females' precarious employment, space restrictions do not permit to delve deeper into a phenomenon that in practice is rather complex and highly heterogeneous among different sub-groups of females. Consequently, it would be advisable to address in future lines of research the specific analysis of how employment precariousness and its components vary, paying special attention to specific dimensions that are associated with a high degree of heterogeneity, such as the type of sector (public or private) or the degree of qualification of the occupation.

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Tables and Figures

Table 1.
Dimensions, indicators and weights
of the Multidimensional Labour Precariousness Index.

Dimension (weight)	Indicator (weight)	Deficiency identification
Labour income (1/3)	Monthly wage (1/6)	Monthly wage lower than 1,200 euros
	Hourly wage (1/6)	Hourly wage lower than 60% of median wage
Employment stability/ Contractual situation (1/3)	Type of contract (1/6)	Fixed-term contract
	Type of working time (1/6)	Involuntary part-time work
Other employment conditions (1/3)	Overqualification (1/6)	Overqualified
	Extended or atypical working time (1/6)	Extended or atypical working time (night, weekend or shifts)

Table 2.
Proportion of employees with deficiencies in each individual job indicator.

Indicator	Males	Females
Low monthly wage	0.153	0.331
Low hourly wage	0.094	0.127
Fixed-term contract	0.257	0.271
Involuntary part-time	0.046	0.139
Overqualification	0.249	0.336
Extended or atypical working time	0.422	0.386

Table 3.
Multidimensional labour precariousness indices.

	Males	Females
Incidence (<i>H</i>)	0.322***	0.455***
Intensity (<i>A</i>)	0.442***	0.471***
Multidimensional Labour Precariousness Index	0.142***	0.215***
<i>Contribution to the value of the indicator for the total population</i>		
<i>H</i>	0.436	0.564†
Multidimensional Labour Precariousness Index	0.420	0.580†

Notes: Differences between men and women in the three multidimensional indicators are statistically significant at conventional levels of significance. † indicates that the differences between men and women in the contribution to the value of the indicator are statistically significant at 1%.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 4.**Multidimensional labour precariousness indices. Females. 2006-2019**

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Incidence	0.486***	0.470***	0.454***	0.445***	0.440***	0.460***	0.469	0.471***	0.476***	0.479***	0.468***	0.478***	0.485***	0.455***
Intensity (<i>A</i>)	0.467***	0.457***	0.459***	0.469***	0.470***	0.473***	0.484***	0.490***	0.489***	0.489***	0.492***	0.484***	0.480***	0.471***
MLPI	0.227***	0.215***	0.208***	0.209***	0.207***	0.217***	0.227***	0.230***	0.233***	0.234***	0.230***	0.231***	0.233***	0.215***

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 5.
Decomposition by dimensions and indicators
of the Multidimensional Labour Precariousness Index. Percentages.

Dimension	Males	Females	Indicator	Males	Females
Labour income	27.2	33.5 [†]	Low monthly wage	16.6	23.7 [†]
			Low hourly wage	10.6	9.7
Employment stability/ Contractual situation	26.7	27.7	Fixed-term contract	21.5	17.2 [†]
			Part-time work	5.3	10.5 [†]
Other employment conditions	46.1	38.8 [†]	Overqualified	19.8	18.9
			Extended or atypical working time	26.2	19.9 [†]
Total	100	100	Total	100	100

Notes: † indicates that the differences between men and women in the contribution of the dimension or indicator to the MLPI are statistically significant at 1%.

Table 6.
Percentage of employees according to the proportion of deficiencies in their jobs.

<i>k</i>	Number of job defficiencies	Males	Females
0	0	31.09	24.12
0.166	1	36.68	30.34
0.333	2	18.28	20.83
0.5	3	8.51	14.43
0.666	4	4.01	7.78
0.833	5	1.30	2.29
1	6	0.13	0.21

Table 7.
Multidimensional labour precariousness by type of employees. Females.

	Incidence (H)	Intensity (A)	MLPI	Scope of precariousness
Total	0.455***	0.471***	0.215***	Intense
Age 16 to 29	0.686***	0.497***	0.341***	Severe
Age 30 to 45	0.444***	0.472***	0.209***	Intense
Age > 45	0.386***	0.455***	0.175***	Intense
Married	0.410***	0.456***	0.187***	Intense
Non-married	0.502***	0.484***	0.243***	Intense
Immigrant	0.661***	0.507***	0.335***	Severe
Native	0.416***	0.461***	0.192***	Intense
Primary studies	0.598***	0.438***	0.262***	Severe
Secondary studies	0.561***	0.479***	0.269***	Severe
Upper studies	0.347***	0.465***	0.161***	Intense
Tenure < 2 years	0.732***	0.515***	0.377***	Severe
Tenure 2-5 years	0.499***	0.460***	0.229***	Intense
Tenure > 5 years	0.300***	0.421***	0.126***	Intense
Unskilled occupation	0.817***	0.515***	0.421***	Extreme
Semi-skilled occupation	0.521***	0.461***	0.240***	Intense
Skilled occupation	0.169***	0.403***	0.068***	Moderate
Armed forces	0.112***	0.404***	0.045***	Moderate
Supervisory tasks	0.153***	0.390***	0.060***	Moderate
Not supervisory tasks	0.502***	0.475***	0.238***	Intense
Fixed-term contract	0.815***	0.516***	0.420***	Severe
Indefinite contract	0.322***	0.429***	0.138***	Intense
Part-time working day	0.839***	0.531***	0.445***	Extreme
Full-time working day	0.325***	0.419***	0.136***	Intense
Public sector	0.256***	0.404***	0.103***	Moderate
Private sector	0.514***	0.481***	0.247***	Intense
Primary sector	0.762***	0.519***	0.395***	Severe
Industry	0.305***	0.418***	0.127***	Intense
Construction	0.207***	0.404***	0.084***	Moderate
Services	0.468***	0.474***	0.222***	Intense
Firm size < 10 employees	0.595***	0.496***	0.295***	Severe
Firm size 10 or more employees	0.387***	0.452***	0.175***	Intense
Municipality < 10.000 inhabitants	0.480***	0.473***	0.227***	Intense
Municipality 10.000-100.000 inhabitants	0.479***	0.474***	0.227***	Intense
Municipality > 100.000 inhabitants	0.427***	0.468***	0.200***	Intense

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Table 8.
Decomposition of the multidimensional labour precariousness indices.
Oaxaca-Blinder methodology.

	Incidence (<i>H</i>)		Intensity (<i>A</i>)	
	Model 1	Model 2	Model 1	Model 2
Males	0.322 (0.005)***	0.322 (0.004)***	0.442 (0.003)***	0.442 (0.003)***
Females	0.455 (0.005)***	0.455 (0.005)***	0.471 (0.002)***	0.471 (0.002)***
Difference by gender	-0.133 (0.007)***	-0.133 (0.007)***	-0.029 (0.004)***	-0.029 (0.004)***
Characteristics	0.012 (0.003)***	-0.121 (0.005)***	0.007 (0.001)***	-0.029 (0.002)***
Age	0.001 (0.000)**	-0.000 (0.000)	0.001 (0.000)**	0.001 (0.000)***
Civil status	-0.001 (0.000)**	-0.001 (0.000)***	-0.000 (0.000)	0.001 (0.000)***
Nationality	-0.002 (0.000)**	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Education	0.008 (0.001)***	-0.017 (0.001)***	-0.000 (0.000)	-0.002 (0.001)***
Tenure	0.004 (0.002)**	0.003 (0.002)**	0.006 (0.001)***	0.005 (0.001)***
Occupation	-	-0.009 (0.003)***	-	-0.002 (0.001)*
Supervisory tasks	-	-0.005 (0.001)***	-	0.000 (0.000)**
Type of working day	-	-0.067 (0.002)***	-	-0.031 (0.002)***
Public/private sector	-	-0.001 (0.001)*	-	0.000 (0.000)*
Industry	-	-0.026 (0.002)***	-	-0.003 (0.001)***
Firm size	-	-0.000 (0.000)	-	-0.001 (0.000)***
Municipality size	-	-0.000 (0.000)	-	0.000 (0.000)
Returns	-0.145 (0.006)***	-0.012 (0.005)**	-0.036 (0.003)***	0.001 -0.003
Observations		31,595		11,845

Notes: Standard errors in parenthesis.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

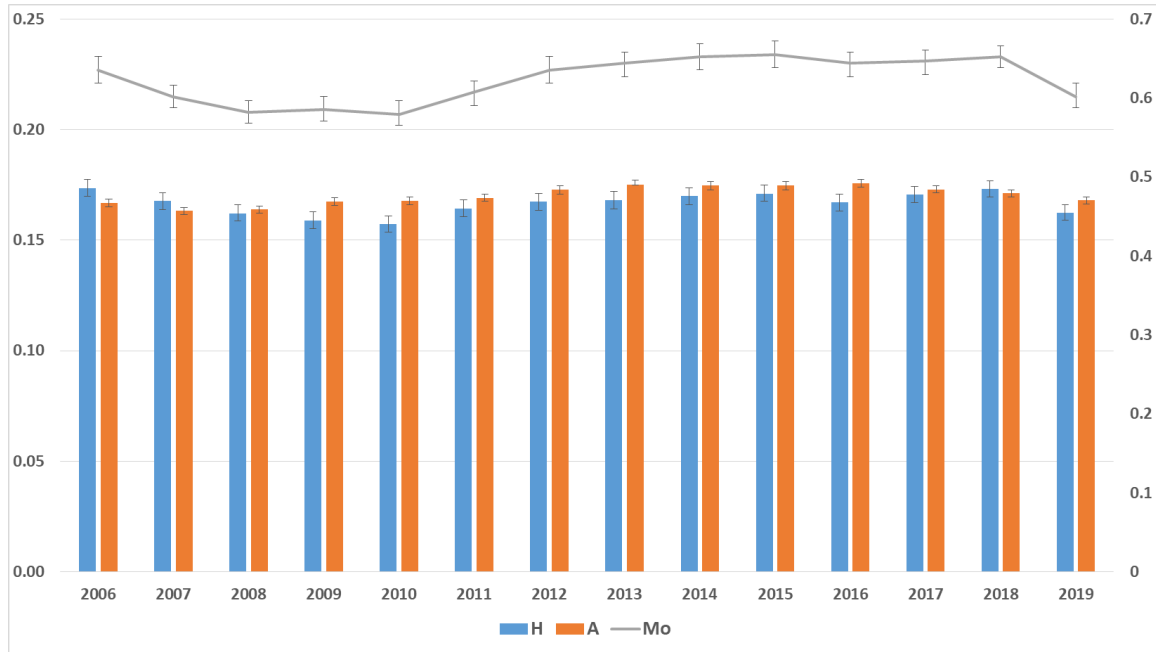
Table 9.
Decomposition of incidence of individual job indicators by gender.
Oaxaca-Blinder methodology.

	Low monthly wage	Low hourly wage	Fixed-term contract	Involuntary part-time	Overqualif.	Extended or atypical working time
Males	0.153 (0.003)***	0.094 (0.003)***	0.257 (0.004)***	0.046 (0.002)***	0.249 (0.004)***	0.422 (0.005)***
Females	0.331 (0.004)***	0.127 (0.003)***	0.271 (0.004)***	0.139 (0.004)***	0.336 (0.003)***	0.386 (0.005)***
Difference by gender	-0.178 (0.005)***	-0.034 (0.005)***	-0.014 (0.006)**	-0.093 (0.004)***	-0.085 (0.005)***	0.036 (0.007)***
Characteristics	-0.132 (0.003)***	-0.027 (0.002)***	-0.006 -0.004	-0.040 (0.002)***	-0.080 (0.004)***	0.000 (0.003)
Age	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Civil status	-0.001 (0.000)**	0.000 (0.000)*	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Nationality	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Education	0.006 (0.001)***	0.004 (0.001)***	0.001 (0.000)**	-0.001 (0.000)	-0.097 (0.021)***	-0.001 (0.000)
Tenure	0.002 (0.001)**	0.001 (0.000)**	0.002 (0.001)***	0.001 (0.000)**	0.000 (0.000)	0.000 (0.000)
Occupation	-0.003 (0.001)**	-0.001 (0.001)*	-0.001 (0.001)**	-0.003 (0.000)***	0.024 (0.026)	-0.001 (0.000)
Supervisory tasks	-0.010 (0.001)***	-0.004 (0.001)***	-0.004 (0.002)**	-0.007 (0.001)***	0.004 (0.002)***	0.000 (0.000)
Type of working day	-0.094 (0.003)***	-0.008 (0.001)***	-0.006 (0.003)**	-	0.000 (0.002)	-0.003 (0.002)
Public/private sector	0.009 (0.001)***	0.006 (0.001)***	-0.006 (0.003)**	0.003 (0.000)***	-0.01 (0.002)***	-0.001 (0.010)
Industry	-0.037 (0.002)***	-0.021 (0.002)***	0.007 (0.003)**	-0.03 (0.002)***	-0.002 (0.003)	0.008 (0.007)
Firm size	-0.007 (0.001)***	-0.003 (0.001)***	0.001 (0.000)**	-0.003 (0.000)***	0.002 (0.001)***	-0.001 (0.010)
Municipality size	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.002 (0.001)***	0.000 (0.000)
Returns	-0.044 (0.004)***	-0.007 (0.004)*	-0.008 (0.004)*	-0.053 (0.004)***	-0.005 (0.002)**	0.035 (0.006)***
Observations	31,595	31,595	31,595	31,595	31,595	31,595

Notes: Standard errors in parenthesis.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Figure 1.
Multidimensional labour precariousness indices: *A*, *H* and *Mo* (left scale). Females.
2006-2019



Appendix

Table A.1.
Descriptives. Averages of the variables.

	Males	Females
Age 16 to 29	0.134	0.121
Age 30 to 45	0.402	0.401
Age > 45	0.464	0.473
Married	0.570	0.538
Immigrant	0.086	0.093
Native	0.914	0.907
Primary studies	0.046	0.033
Secondary studies	0.547	0.455
Upper studies	0.407	0.512
Tenure < 2 years	0.261	0.256
Tenure 2-5 years	0.153	0.144
Tenure > 5 years	0.586	0.600
Unskilled occupation	0.108	0.167
Semi-skilled occupation	0.568	0.494
Skilled occupation	0.312	0.338
Armed forces	0.012	0.001
Supervisory tasks	0.216	0.133
Part-time working day	0.070	0.255
Public sector	0.193	0.279
Primary sector	0.042	0.012
Industry	0.230	0.084
Construction	0.096	0.011
Services	0.632	0.893
Firm size < 10 employees	0.256	0.326
Municipality < 10.000 inhabitants	0.215	0.205
Municipality 10.000-100.000	0.317	0.299
Municipality > 100.000 inhabitants	0.468	0.496
Observations	16,086	15,509