



Gender Pay Gap – GPG Barometer

02/2024

Gender, Work and Power Observatory



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Gender, Work and Power

Title

Gender Pay Gap – GPG Barometer

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Subject Index

Foreword	7
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Methodological Note	9
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The gender pay gap: Portugal in the European context	13
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The gender pay gap in Portugal: a deeper analysis	14
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Additional Information: Remuneration of Men and Women	21
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Index of Figures

Figure 1 – Evolution of the unadjusted gender pay gap in Portugal and the EU28/27 2010-2022 (%)	13
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Figure 2 – Evolution of the unadjusted gender pay gap in Portugal 2010-2022 (%)	14
---	----

Figure 3 – Unadjusted and adjusted gender pay gap in Portugal, 2022 (%)	15
---	----

Figure 4 – Evolution of the adjusted gender pay gap in Portugal 2018-2022 (%)	16
---	----

Figure 5 – Adjusted gender pay gap by age group in Portugal, 2022 (%)	17
---	----

Figure 6 – Adjusted gender pay gap by educational attainment level in Portugal, 2022 (%)	17
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Figure 7 – Adjusted gender pay gap by level of qualification, in Portugal, 2022 (%)	18
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Figure 8 – Decomposition of the GPG - Portugal (Blinder-Oaxaca method)	19
--	----

Figure 9 – Evolution of the unexplained component of the gender pay gap - Portugal (2018-2022)	21
--	----

Index of Tables

Table 1 – Observed characteristics of men and women (sample – <i>Quadros de Pessoal</i> 2022)	12
---	----

Table 2 – Factors that explain the gender pay gap - Portugal (Blinder-Oaxaca decomposition)	20
---	----

Table 3 – Unadjusted gender pay gap between men and women, by quartiles, in Portugal, 2022	22
--	----

Table 4 – Overall earnings of men and women, by quartiles, in Portugal, 2022	22
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Foreword

The *Gender, Work and Power* Observatory regularly provides insights into the employment situation of women and men, covering issues such as the gender pay gap, disparities in care work, economic power and decision-making in business. Established as part of the ISEG Research / Policy Lab, this infrastructure¹ seeks to contribute to an informed public debate on these topics, as well as to the qualification and assessment of public policies. Its goal is to apply scientific knowledge to drive social change, promoting the full and equal participation of women and men in both public and private life, the realisation of full citizenship, the advancement of social justice and the sustainable development of societies.

Reflecting the inclusive approach underlying its objectives and mission, the Observatory encourages the involvement in its activities of young researchers, including doctoral and master's degree students.

The first Gender Pay Gap Barometer was created by the following team:

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Gender Pay Gap – GPG Barometer

02/2024

Gender, Work and Power Observatory

Methodological Note

Data from the European Structure of Earnings Survey were used in order to analyse the gender pay gap (GPG). The information is provided by the Statistical Office of the European Union (Eurostat) and makes it possible to compare Portugal and other European Union (EU) countries; However, it only covers employers with ten or more employees — a limitation that makes it less representative of the overall pay practices in Portugal. As a result, microdata were also taken from *Quadros de Pessoal*, a dataset collected by the Office of Strategy and Planning of the Ministry of Labour, Solidarity and Social Security (GEP/MTSSS). These data are gathered through an administrative procedure which all entities with employees in Portugal must comply with each year². The data refer to employees in the private sector. In the case of central, regional and local administration, as well as public institutes, the database only covers employees under individual labour contracts. Organisations that employ non-permanent rural and domestic workers are also not included.

According to this statistical source, earnings include not only the ordinary basic wage but also the overall earnings — i.e., regular benefits and supplementary allowances received in exchange for work performed (including overtime) (**Box 1**). This variable is the closest to the legal definition of remuneration³. The analysis prioritises the hourly rate of pay, and the most recent data available relate to 2022 (with the database released in 2024).

² Annex A of the Single Report.

³ *Diário da República*, 2018. This is why the concept of remuneration was chosen instead of salary.

— Box 1

Components of Remuneration

Basic Wage – The gross amount, in cash and/or in kind, paid to men and women during the reference period for normal working hours.

Overall Earnings – The total amount, including the basic wage, bonuses, regular allowances, and overtime pay.

Regular Bonuses and Allowances – The gross amount paid to employees on a regular monthly basis, such as meal

allowances, role allowances, accommodation or transport allowances, *diuturnidades* (long-service pay), seniority bonuses, productivity bonuses, attendance bonuses, and allowances for hard, dangerous, or dirty work, as well as shift and night work allowances. This does not include back pay, severance pay, Christmas bonuses or vacation bonuses.

Overtime Pay – The gross amount paid for overtime hours worked during the reference period, whether on working days, rest days or public holidays.

Information collected from [GEP/MTSSS](#)

As explained in a previous project⁴, the following methods are used to calculate the gender pay gap (GPG):

- **Unadjusted GPG (Simple Formula)** – the ratio between the difference in basic wage or overall earnings for men and women, compared to the basic wage or overall earnings for men;
- **Adjusted GPG** – the result of a statistical regression that accounts for and removes the effect of observed differences in the individual characteristics of women and men (such as age, educational level and length of employment with the current employer) on the remuneration (basic wage or overall earnings) that is received⁵. Regression:

$$\log y_i = \alpha + \gamma \text{woman}_i + \mathbf{x}'_i \boldsymbol{\beta} + \varepsilon_i \quad (1)$$

⁴ This barometer builds on part of the work initiated in the study [Social and Economic Benefits of Equal Pay Between Men and Women](#), funded by EEA Grants, the Financial Mechanism of the European Economic Area. Programme operator: CIG – Commission for Citizenship and Gender Equality.

⁵ This technique differs from the calculation formula used by the GEP/MTSSS in the *Barómetro*. In this case, the “adjusted” figure represents the pay gap between men and women, corrected by factors derived from the weighted average of the pay gaps for homogeneous groups of individuals, based on predefined attributes. It is a factor-weighted analysis.

Let y_i represent the earnings of worker i , let $women_i$ be a binary variable equal to 1 if i is a woman, ε_i the error term, and \mathbf{x}_i a vector of the individual's observed characteristics. These characteristics include age (squared term), seniority (squared term) and binary variables indicating each level of education and working time regime (dummy variables). The adjusted GPG is equal to the estimate of the coefficient γ obtained using the least squares method, representing the GPG after controlling for the effect of the variables included in \mathbf{x}_i .

The GPG is also decomposed into two components: one that can be **explained** by observable individual characteristics (such as age, educational level and length of employment with the current employer), job-related factors (including working time regime, type of contract and occupation⁶), and workplace characteristics (such as company size, industrial sector and geographical region); and another portion that **cannot be explained** by these factors. The unexplained portion may suggest the presence of gender-based pay discrimination.

To apply the Blinder-Oaxaca decomposition method, the following regressions were defined, which separately explain the logarithm of the overall earnings of men and women:

$$\overline{\log(y_m)} = \hat{\beta}_0^m + \sum_{k=1}^K \hat{\beta}_k^m \bar{x}_k^m; \overline{\log(y_w)} = \hat{\beta}_0^w + \sum_{k=1}^K \hat{\beta}_k^w \bar{x}_k^w \quad (2)$$

where K represents the total number of variables included in the regression, y^m and y^w are the earnings of men and women, respectively, and x^m and x^w represent the observed characteristics of workers (men and women, respectively) and their respective employers.

⁶ Three-digit professions. According to [the INE website](#).

Then, with the GPG being approximated by $\Delta = \overline{\log(y_m)} - \overline{\log(y_w)}$, given the equations in (2) one may write:

$$\Delta = \hat{\beta}_0^m - \hat{\beta}_0^w + \sum_{k=1}^K (\hat{\beta}_k^m - \hat{\beta}_k^w) \bar{x}_k^w + \sum_{k=1}^K \hat{\beta}_k^m (\bar{x}_k^m - \bar{x}_k^w) \quad (3)$$

This decomposition allows the value of the GPG to be segmented into the aforementioned components, with the *explained portion* equal to $\sum_{k=1}^K \hat{\beta}_k^m (\bar{x}_k^m - \bar{x}_k^w)$.

The results refer to all individuals receiving the full basic wage (i.e., workers who have had no unpaid absences from work). Observations where age, educational level or length of service with the employer are unknown are excluded from the analysis. In subsequent analyses that include educational level, observations for individuals with post-secondary or higher technical qualifications are also excluded due to their low representativeness. Furthermore, observations with occupations described as “residual” are excluded from the analysis. The final sample for 2022 consists of 2,639,575 observations (1,234,700 women and 1,404,875 men).

— Table 1

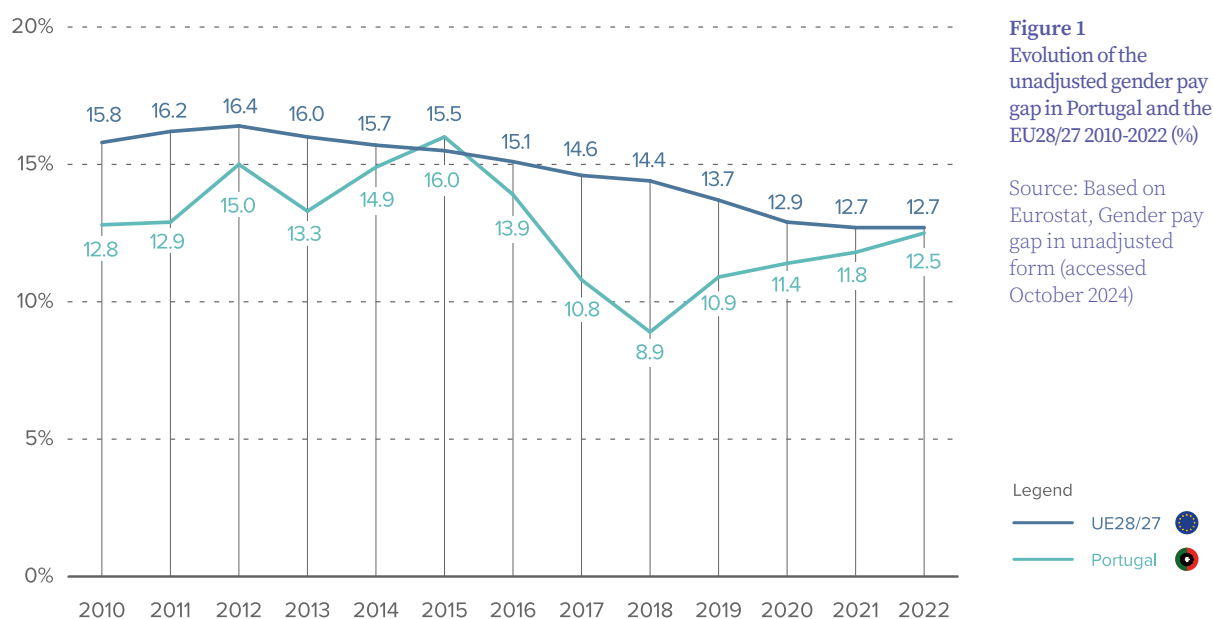
Observed characteristics of men and women

(sample – *Quadros de Pessoal* 2022)

	Men	Women
Educational Attainment (%)		
Up to basic education	45.80%	35.90%
Secondary education	32.70%	33.70%
Higher education	20.70%	29.60%
Age (average)	41.61	41.69
Length of employment with the current employer (years – average)	7.41	7.62

The gender pay gap: Portugal in the European context

Figure 1 shows the evolution of the unadjusted gender pay gap from 2010 to 2022 in both Portugal and the EU⁷. As can be seen, the unadjusted GPG in Portugal has remained lower than the EU average, indicating a smaller pay gap between men and women, compared to the broader European context. However, after a decline in 2018, there has been a noticeable upward trend in the gender pay gap in Portugal, suggesting an increase in the pay gap between men and women. In contrast, during the same period, the unadjusted gender pay gap in the EU has been steadily declining. This suggests a convergence between national and European trends, although it has occurred at the expense of a widening gender pay gap in Portugal. However, as noted in the previous methodological note, it is important to consider the limitations of the respective database (Eurostat, European Structure of Earnings Survey).



⁷ EU28 and EU27 (starting in 2020, with the exit of the United Kingdom).

The gender pay gap in Portugal: a deeper analysis

Based on *Quadros de Pessoal* (GEP/MTSSS), **Figure 2** provides a more detailed analysis of the national reality by comparing the unadjusted gender pay gap for the basic wage and overall earnings. As shown in the figure, pay disparities are more pronounced when overall earnings are considered, compared to the basic wage. This indicates that the gender pay gap is larger when regular benefits and supplementary allowances (including overtime) are included in the analysis (**Box 1, Methodological Note**). Considering that overall earnings is closest to the legal definition of remuneration; it can be concluded that women are paid less for their work than men. In the most recent year analysed (2022), the gender pay gap was 13.2% for basic wage and 16% for overall earnings. Over the period from 2010 to 2022, the unadjusted gender pay gap decreased slightly, with a fall of 4.9 percentage points in overall earnings and 4.7 percentage points in the basic wage.

Figure 2
Evolution of the
unadjusted gender pay
gap in Portugal
2010-2022 (%)

Source/Note: Data from 2010-2018 - *Quadros de Pessoal*, GEP/MTSSS. Cf. CITE (2019), Report on the Progress of Equality between Women and Men in Work, Employment and Vocational Training, p. 42. Data from 2019-2021 - *Quadros de Pessoal*, GEP/MTSSS. Cf. CITE (2022), Report on the Progress of Equality between Women and Men in Work, Employment and Vocational Training, p. 44. The information refers to workers with full remuneration and on a full-time employment basis.

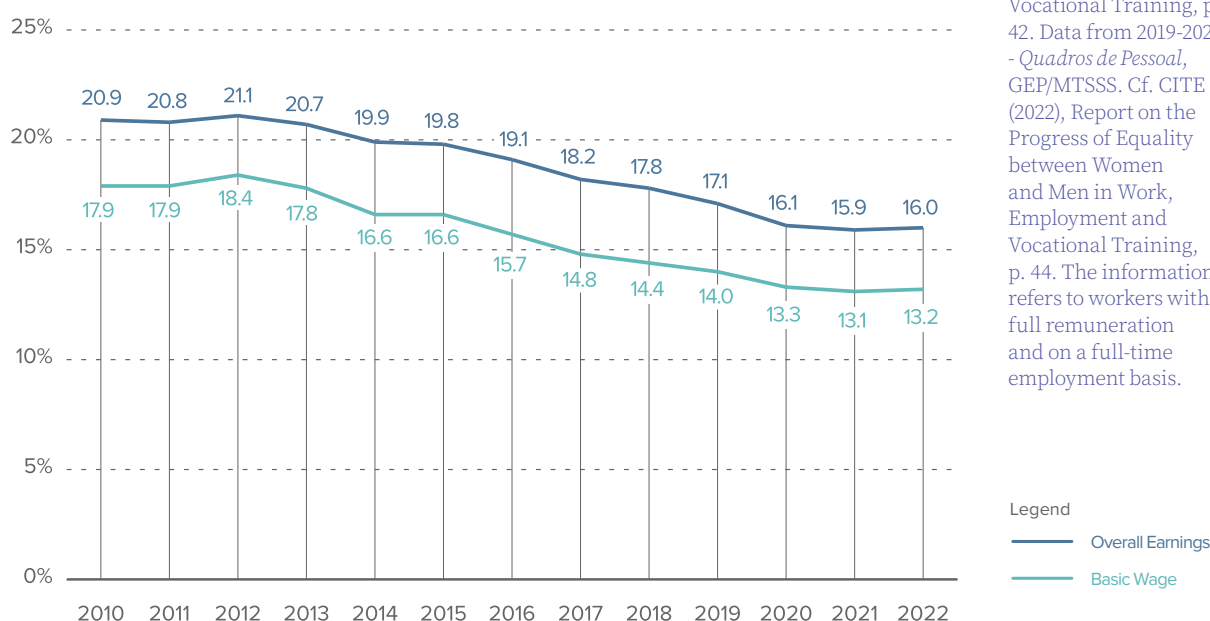


Figure 3 provides information on the unadjusted and adjusted gender pay gap values for 2022, illustrating that, in the Portuguese context, pay differences (both basic wage and overall earnings) are higher when controlling for the effect of observed differences in the individual attributes of women and men (age, educational level and length of employment with the current employer). In this case, the differential increases from 13.1% to 15.3% (basic wage) and from 15.4% to 18.4% (overall earnings) in 2022.

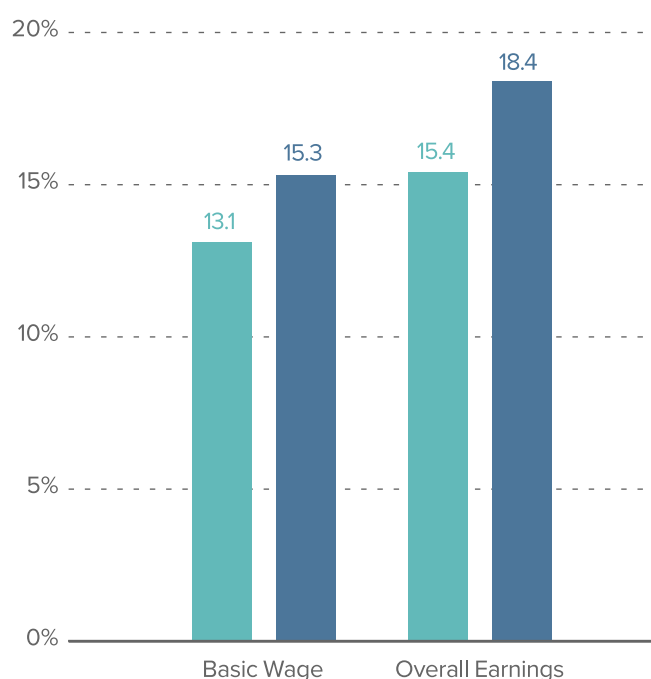


Figure 3
Unadjusted and
adjusted gender pay
gap in Portugal,
2022 (%)

Source/Note:
Based on microdata
for 2010-2022, GEP/
MTSS. Information
on basic wage and
hourly earnings of
all workers (full-time
and part-time).

Legend
Adjusted GPG
Unadjusted GPG

In recent years, there has been a tendency for the adjusted gender pay gap to fall slightly: since 2018⁸, it has been below 20 per cent (**Figure 4**).

⁸ The analysis of the adjusted GPG goes back to 2018, as this was the year from which the team began estimating wage differences based on the calculation formula presented in the methodological note. This year also marked the publication of Law No. 60/2018, of 21 August, whose effect on the GPG has been monitored.

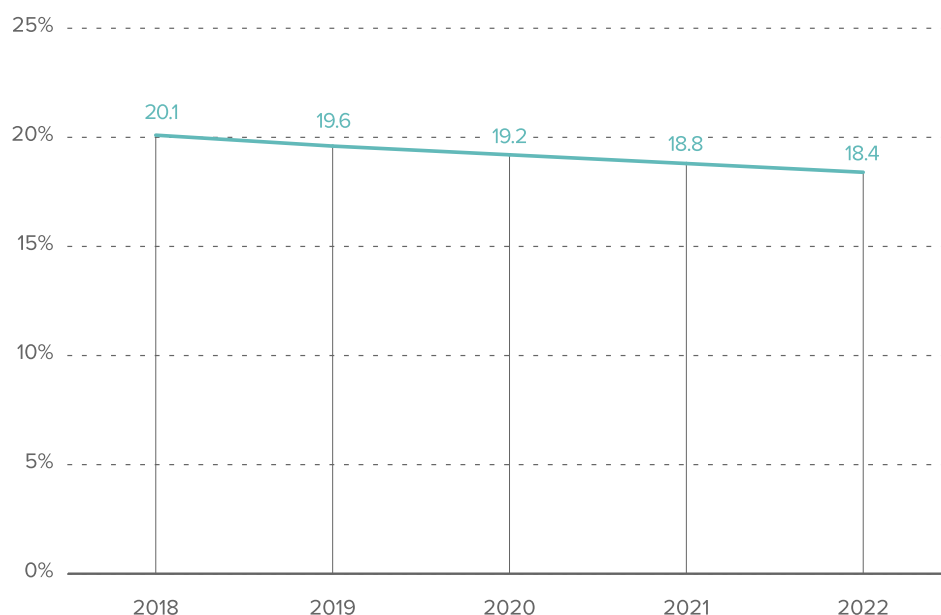


Figure 4
Evolution of the
adjusted gender pay
gap in Portugal
2018-2022 (%)

Source/Note:
Based on microdata
for 2018-2022, GEP/
MTSSS. Information
on the hourly
earnings of all
workers (full-time
and part-time).

These are, therefore, two warning indicators: firstly, the data show that the gender gap between women and men with similar observable attributes is higher than when these attributes are not considered in the calculation formula (**Figures 2 and 3**); secondly, this gap has remained particularly high (**Figure 4**), despite the enactment of Law No. 60/2018, of 21 August, 2018, in 2019.

Figure 5 shows that the gender pay gap increases with age (except for the over 65 age group, which requires some caution in the analysis)⁹. The adjusted gender pay gap reaches its highest value in the age group “50-64 years (inclusive)” at 21.3%. It is worth noting that the most significant increases in this disparity occur in the earlier age transitions: from 24 to the “25-34 years” age group, and from the “25-34” to the “35-49 years” age group (+7.6 percentage points).

⁹ In 2024, the retirement age is 66 years and four months, the same as in 2023, according to Decree-Law No. 292/2022, of 9 December. In 2025, the retirement age will be 66 years and seven months, according to Decree-Law No. 414/2023, of 7 December. In the year under analysis, 2022, Decree-Law No. 53/2021, of 10 March, set the retirement age at 66 years and seven months.

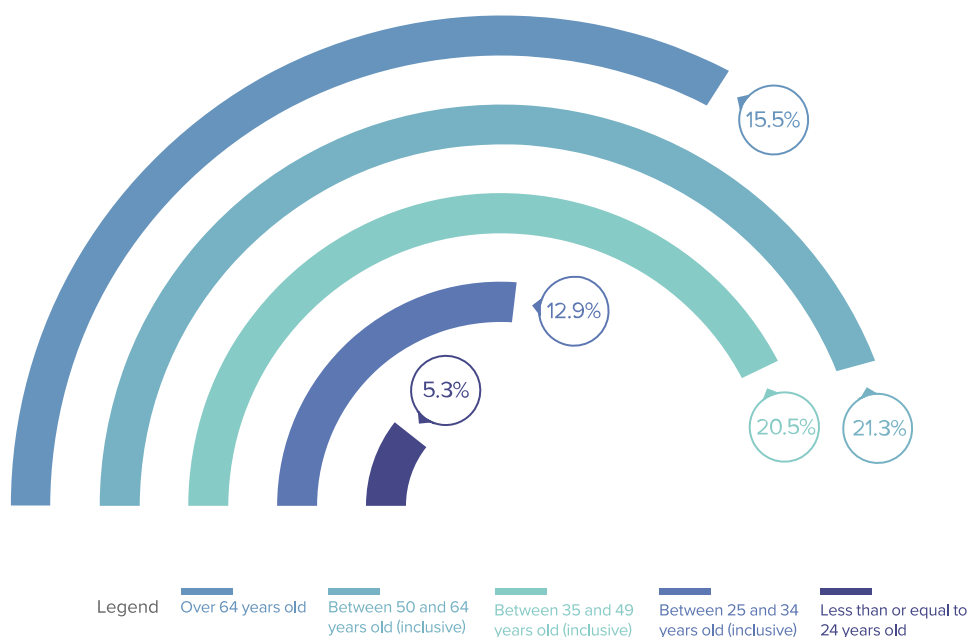


Figure 5
Adjusted gender pay gap by age group in Portugal, 2022 (%)

Source/Note:
Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information on the hourly earnings of all workers (full-time and part-time).

The adjusted gender pay gap is even more pronounced among workers with higher levels of education (22.3%), as shown in **Figure 6**.

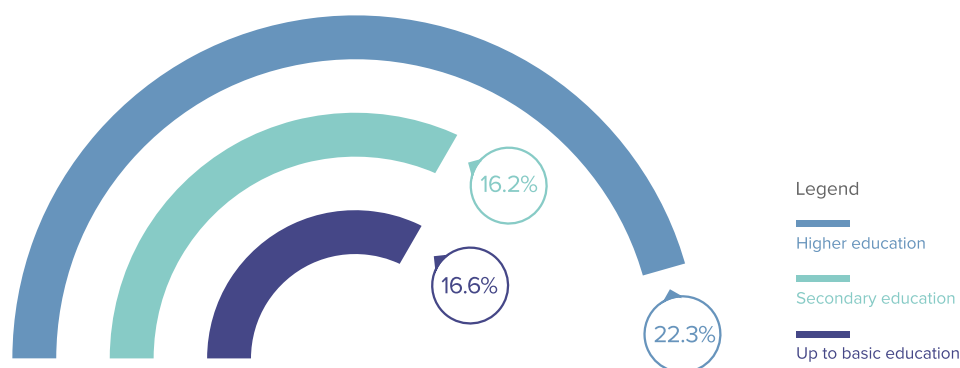
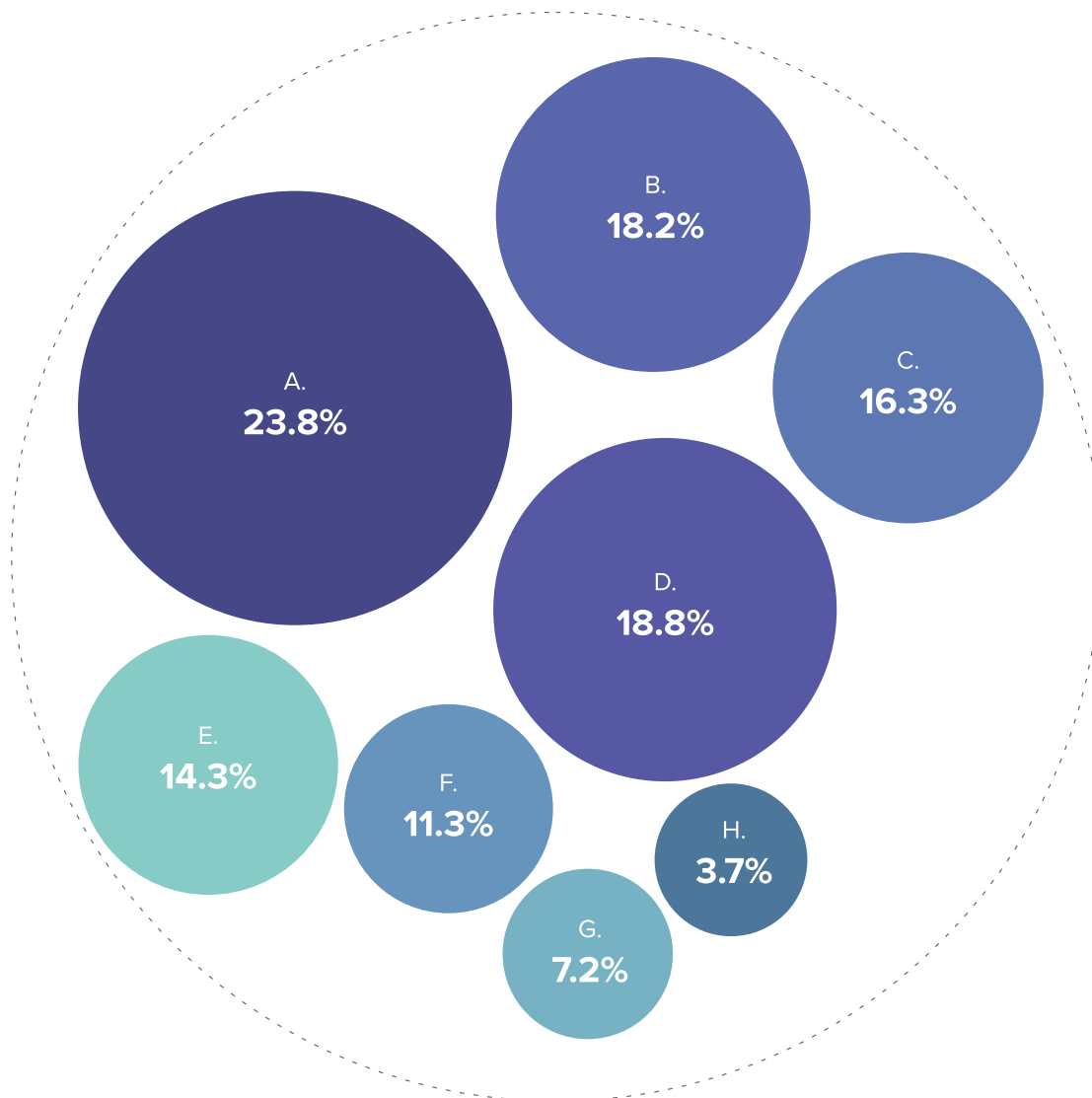


Figure 6
Adjusted gender pay gap by educational attainment level in Portugal, 2022 (%)

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information on the hourly earnings of all workers (full-time and part-time).

As shown in **Figure 7**, the gender pay gap continues to exist across all levels of qualification, with the most substantial disparities occurring at the higher qualification levels. These discrepancies are more pronounced between “Senior Management” (23.8%) and “Highly Qualified Professionals” (18.8%). For “Unqualified Professionals” and “Interns, Trainees, and Apprentices”, the asymmetry – although still present – is notably lower (7.2% and 3.7%, respectively).

Figure 7
Adjusted gender pay gap by level of qualification, in Portugal, 2022 (%)



Legend

A. Senior Management	E. Qualified Professionals
B. Middle Management	F. Semi-Qualified Professionals
C. Supervisors/women. Masters and Team Leaders	G. Unqualified Professionals
D. Highly Qualified Professionals	H. Interns. Trainees and Apprentices

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information on the hourly earnings of all workers (full-time and part-time).

The application of the Blinder-Oaxaca decomposition method reveals that the individual attributes of women and men (age, educational level and length of employment with the current employer), employment-related characteristics (work time regime, contract type, qualification level and occupation) and employer-related factors (company size, industrial sector and geographical region) explain only 29.2% of the wage differential (**Figure 8**). The high proportion of the unexplained component (70.8%) may suggest the presence of structural gender inequalities.

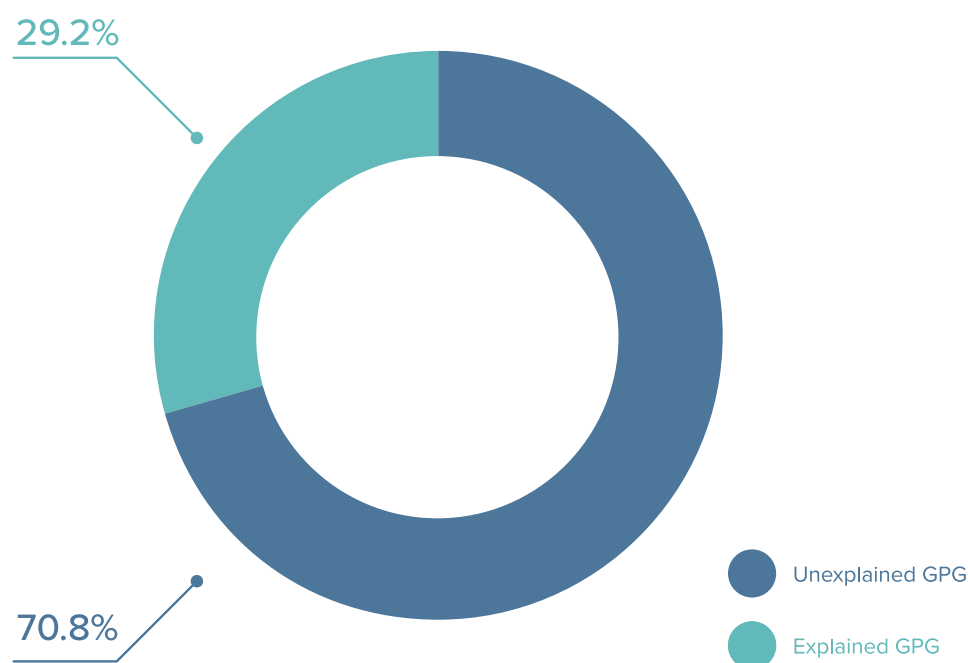


Figure 8
Decomposition of
the GPG - Portugal
(Blinder-Oaxaca
method)

Source/Note: Based
on microdata -
Quadros de Pessoal
- GEP/MTSSS.
Information on the
hourly earnings of
all workers (full-time
and part-time).

As far as the explained portion of the gender pay gap is concerned, the variables that contribute most to the explanation are the industrial sector (31.4%) and occupation (23.8%), as shown in **Table 2**. This suggests that, if women and men were equally distributed across industries, professions and qualification levels, the pay gap would decrease by 60%. On the other hand, the level of education contributes negatively to the GPG: if women did not have higher levels of education than men, the gender pay gap would be 21.3% larger.

— Table 2

**Factors that explain the gender pay gap - Portugal
(Blinder-Oaxaca decomposition)**

Factors that explain the gender pay gap - Portugal (Blinder-Oaxaca decomposition)	
Age	-1.0%
Seniority	-1.1%
Working hours	1.8%
Educational attainment	-21.3%
Contract type	-0.8%
Occupation	23.8%
Industrial sector	31.4%
Company size	-7.0%
Geographical region	-1.5%
Level of qualification	4.9%

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information on the hourly earnings of all workers (full-time and part-time).

Figure 9 depicts the evolution of the unexplained component of the gender pay gap over the past five years. A more detailed analysis of this component¹⁰ shows an increase between 2018 and 2020, followed by a slight reduction. Nonetheless, it is important to note that the unexplained GPG remains very high (over 70%), underlining the need for transparent pay policies in order to ensure that there is no direct or indirect gender-based discrimination.

¹⁰ The analysis goes back to 2018 because this was the first year in which the team applied the Blinder Oaxaca decomposition method to an analysis of the Gender Pay Gap). As already mentioned, this year coincided with the publication of Law No. 60/2018, of 21 August, whose effect on the GPG has been evaluated.

The figures may differ slightly from those of previous analyses – [the Gender Pay Gap Elimination Project](#) – because three-digit occupations are now taken into account (previously, two-digit occupations were analysed). In addition, some observations relating to individuals with post-secondary and higher technical qualifications were excluded from the sample, given their low representativeness.

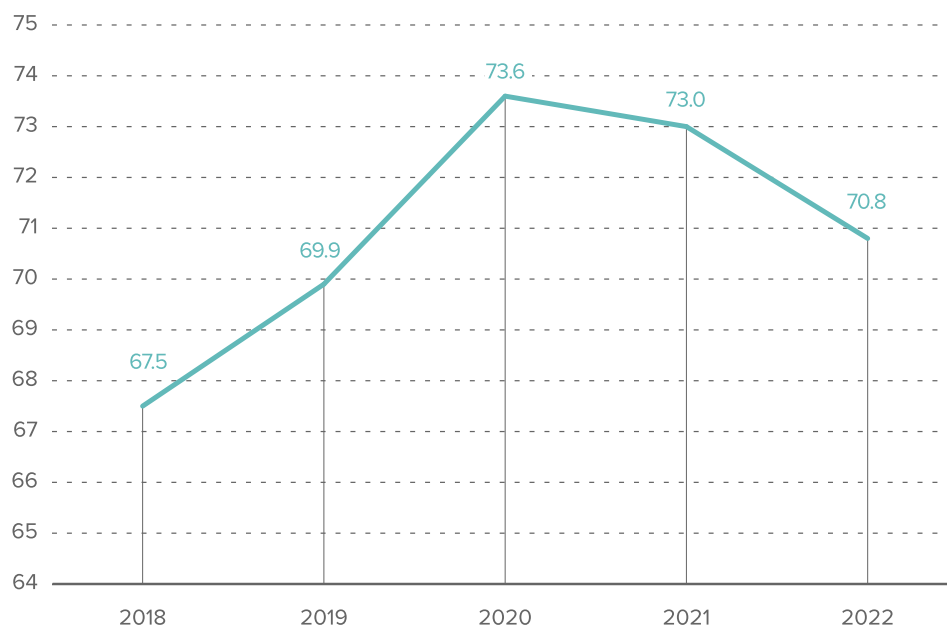


Figure 9
Evolution of the unexplained component of the gender pay gap - Portugal (2018-2022)

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information on the hourly earnings of all workers (full-time and part-time).

Additional Information: Remuneration of Men and Women

Table 3 shows that women earn less than men in all income quartiles, with the gender pay gap increasing significantly as earnings rise. The value of this gap more than triples in the third quartile compared to the first. Additionally, **Table 4** reveals that women – more than men – earn particularly low wages: 80.1% earn 1,420.20€ or less (compared to 70.6% of men), more than half (57.8%) earn up to 985€, and almost one-third (31.9%) earn 810,00€ or less (compared to 18.9% of men)¹¹.

¹¹ The figures for monthly remuneration are presented in these tables as supplementary information. As mentioned above, the previous analysis favoured hourly earnings.

— Table 3

Unadjusted gender pay gap between men and women, by quartiles, in Portugal, 2022

Quartiles	Men	Women	Unadjusted GPG
1º	840,0 €	795,0 €	5.4%
2º	1 055,3 €	916,0 €	13.2%
3º	1 550,0 €	1 275,6 €	17.7%

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information regarding the overall earnings of all workers (full-time and part-time).

— Table 4

Overall earnings of men and women, by quartiles, in Portugal, 2022

Quartile	Total	% of Men who earn equal to or less than	% of Women who earn equal to or less than
1º	810,0 €	18.9%	31.9%
2º	985,0 €	43.2%	57.8%
3º	1 420,2 €	70.6%	80.1%

Source/Note: Based on microdata - *Quadros de Pessoal* - GEP/MTSSS. Information regarding the overall earnings of all workers (full-time and part-time).



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