

Structure of Earnings Survey 2018

Main Results

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Main Results

Introduction

The 2018 Structure of Earnings Survey (SES 2018), whose main results are presented in this document, was conducted in a harmonized manner throughout the European Union (EU), in compliance with the Regulation of the Council of the European Union (EU) No. 530/1999.

This survey analyses the structure and distribution of wages in all EU member states and in their regions. The sample is thus composed of work centres and workers belonging to those centres.

When compared with other similar surveys on the same subject, the main contribution in this case is that wages are collected individually in the questionnaire, along with a large number of worker-related variables. Thanks to this, relationships can be established between salary and variables that may contribute to determining its amount: such as the level of studies achieved, seniority, contract and occupation type, etc.

Another contribution of the survey is that it gives not only are average earnings values, but also wage distribution, thus providing a measurement of wage inequality.

The survey objectives can thus be fundamentally summarized into two categories:

- Ascertaining wage levels, not only average levels, but also their distribution.
- The determination of the wage structure, from both the point of view of the composition and the variables that have an influence on wages, and to what extent.

A total of 24,710 work centres and 216,726 salaried employees took part in the 2018 Structure of Earnings Survey. This survey is conducted every four years; the previous surveys took place in 1995, 2002, 2006, 2010 and 2014, and were likewise harmonized with the rest of the European Union countries. Details can be found in the survey methodology.

The following presents the key results obtained from the survey information. The publication also contains an extensive set of tables that can be consulted directly on the web. The possibilities of this survey are very broad, however. It has the potential to be further exploited in the future by researchers interested in the labour market, since anonymized microdata files can also be accessed.

1 Wage Distribution

The average annual gross salary in 2018 was 24,009.12 euros. In the case of women, 21,011.89 euros per worker and in the case of men, 26,738.19 euros per worker. The average annual female salary was, therefore, 78.6% of the average male salary, although this difference must be qualified according to other labour variables (type of working hours, contract, occupation, seniority, etc.), which have a significant impact on wages.

The salary distribution provided by the survey, represented in Figure 1, is asymmetric to the right, with a great deal of dispersion. The most frequent salary (18,468.93 euros) was lower than the median salary (20,078.44 euros), for which there are as many workers with higher salaries as there are workers with lower salaries. In turn, this median salary was lower than the average salary. In summary, there were few workers with very high wages, but they significantly influenced the average wage.



GRAPH 1. Distribution of gross annual earnings

The difference between the average salary (24,009.12) and the most frequent salary (18,468.93) explains the perception by users and public opinion that the results of traditional surveys "are high" since only average salary values are offered.

The Lorentz curve (Graph 2) allows us to graphically observe wage inequalities. The percentage of workers is shown on the abscissa, and the cumulative percentage of their wages with respect to the total wage bill is represented on the ordinate.



The measurement of inequality associated with the Lorenz curve is the Gini index, which represents the distance between the curve and the bisector, which models a completely equitable distribution (all people with the same salary). The Gini index takes values between 0 and 100, with the value 0 corresponding to equitable distribution.

From an analysis of this curve for the population as a whole, we can deduce that the 20% of workers with the lowest wages had just over 6% of the wage bill, while, on the other hand, the 10% of highest paid workers accumulated more than 25% of the wage bill. The value of the Gini index for 2018 was 34.3.

Graph 3 shows salary distribution by sex. The wage distribution of women is further to the left than that of men at all wage levels. Up to 16,000 euros the number of women is greater than the number of men for the same salary level. Above this figure, the number of women who received each salary level is always lower than that of men with the same salary.





Graph 4 shows the same data, but cumulatively. In the lower left-hand side of the graph it can be observed that more than 20% of women received less than 10,000

euros per year in 2018, while in the case of men this percentage did not reach 10%. This difference is mainly explained by the fact that the majority of part-time workers within the scope of the survey were women. At the higher end of wages, almost 30% of men had wages that exceeded 30,000 euros per year, while 20% of women did.



GRAPH 4. Accumulated distribution of gross annual wages

Graph 5 shows the distribution of workers based on their earnings with respect to the Interprofessional Minimum Wage (IMW), which in 2018 was 10,302.60 euros.



GRAPH 5. Porcentage of employees according to their earnings with regard to the Interprofessional Minimum Wage (IMW)

We can observe that 14.1% of workers did not reach the IMW in 2018, with the percentage being significantly higher among women than men. This is due to the fact that the majority of part-time workers fall into this interval. Taking into account only full-time workers, the percentage of workers with earnings below the IMW did not reach 1%. This can be seen in Graph 6.



GRAPH 6. Porcentage of employees according to their earnings with regard to the Interproffesional Minimum Wage (IMW), full-time

The comparison between the sexes by intervals is seen more clearly in Graph 7, which shows the percentage of men and women whose salary was in each interval. In the lower salary intervals, the percentage of women was considerably higher. Specifically, there were 69.5% in the salary interval lower than the IMW. The percentage of women decreases as wages increase, reaching 25.3% in the range of wages over 8 times the IMW.





In addition to the Gini Index (already discussed), there are other indicators of wage inequality, as presented in Table 1.

The proportion of workers with low earnings (*low pay rate*) measures the proportion of wage earners whose earnings per hour were less than 2/3 of the median earnings per hour. It also includes Information on the proportion of women in total wage earners with low hourly earnings.

CHART 1. Indicators of inequality

Gini Index	34.3
Proportion (%) of employees with low earnings (Low pay rate)	13.1%
Proportion (%) of women among the total wage earners whe low earnings	62.2%
D9/D5	2.08
D5/D1	1.58
D9/D1	3.28
Wage gap between women and men	11.3%

In 2018, according to the results of the Structure of Earnings Survey, 13.1% of wage earners perceived an hourly earnings below 2/3 of the median hourly earnings (*low pay rate*). Of this total number of employees, 62.2% were women.

Other interesting wage distribution measurements are obtained from the wage deciles. To calculate these deciles, all employees are ordered according to the amount of annual salary received, and are divided into ten equal groups (10% of workers in each group). The first decile corresponds to the 10% of workers who received the lowest wages, the second decile corresponds to the 10% of workers who received the next level of wages, and so on, until reaching the ninth decile, which corresponds to the 10% of workers with the highest income. Median wage equals decile 5 (denoted by D5). The different ratios between the lowest (denoted by D1), the median (D5) and the highest decile (denoted by D9) give an idea of the breadth (inequality) between the different wage levels.

The values of these measures for the year 2018 are shown in Table 1. The annual salary of the highest paid 10% was twice the median salary and more than 3 times the salary of the lowest paid 10%.

According to the Eurostat definition, the gender gap not adjusted to individual characteristics that can explain part of the wage differences between men and women, is the difference between the gross hourly wage of men and that of women, expressed as a percentage of gross hourly wages for men. Eurostat calculates this only for employees who work in workplaces with 10 or more workers. In the hourly earnings, it includes overtime payment, but excludes overtime bonuses.

In 2018, the salary gap was 11.3%.

2 Territorial Analysis

The highest wages in 2018 corresponded to País Vasco (28,470.94 euros per worker per year), Comunidad de Madrid (27,010.93 euros) and Comunidad Foral de Navarra (26,364.75 euros). For their part, Extremadura (19,947.80 euros), Canarias (20,763.48 euros), and Región de Murcia (21,510.59 euros) reported the lowest salaries.

Graph 8 is a map of the Autonomous Communities, showing the average salaries for each of them in 2018.



Graph 9 shows the differences in the average income of each community compared to the national group. In addition to the aforementioned communities with the highest salary, Cataluña and the autonomous cities of Ceuta and Melilla recorded average annual earnings above the national average.





The differences between the sexes were not the same in all regions, as seen in Table 2. This disparity is not always based on greater wage discrimination in one region or another, but rather on the different employment structures in each region. There are many factors influencing the salary differences between men and women: contract type, the type of working day, level of studies, and different occupations, among others.

The woman/man ratio is the percentage of the average female salary compared to the corresponding male salary. Thus, the cities of Ceuta and Melilla showed the lowest deviation between the sexes, followed by Illes Balears and Canarias, while the communities that presented the greatest divergence between the sexes were Principado de Asturias, Andalucía and Aragón. The results for Ceuta and Melilla for this survey should, however, be approached with caution, as the sample sizes are small, thus leading to higher sampling errors.

As a general rule, in almost all the Autonomous Communities, the average salary for women was between 9% and 30% below the average salary for men.

	Gro	ss annual wag	jes	Man/Woman	
	Total	Women	Men	ratio	Gini index
TOTAL NATIONAL	24,009.12	21,011.89	26,738.19	78.6	34.35
Andalucía	21,756.78	18,599.48	24,693.24	75.3	34.80
Aragón	23,531.83	20,074.25	26,640.59	75.4	32.32
Asturias, Principado de	23,914.61	19,744.94	27,912.91	70.7	34.06
Balears, Illes	22,800.87	21,085.74	24,437.58	86.3	30.89
Canarias	20,763.48	19,051.01	22,333.63	85.3	32.10
Cantabria	22,554.83	19,630.01	25,349.01	77.4	31.96
Castilla y León	22,034.53	19,056.53	24,714.04	77.1	32.36
Castilla - La Mancha	21,756.38	19,088.87	23,960.10	79.7	32.44
Cataluña	25,552.84	22,289.90	28,640.23	77.8	33.45
Comunitat Valenciana	22,121.05	19,235.72	24,537.07	78.4	33.75
Extremadura	19,947.80	17,972.63	21,794.57	82.5	33.12
Galicia	22,244.59	19,543.17	24,826.91	78.7	33.38
Madrid, Comunidad de	27,010.93	23,925.99	29,816.34	80.2	36.37
Murcia, Región de	21,510.59	18,598.64	23,670.24	78.6	33.18
Navarra, Comunidad Foral de	26,364.75	22,697.59	29,546.12	76.8	29.62
País Vasco	28,470.94	24,757.18	31,970.30	77.4	32.26
Rioja, La	22,641.17	19,770.93	25,593.27	77.3	31.53
Ciudades de Ceuta y Melilla	24,803.82	23,523.36	25,810.14	91.1	33.77

CHART 2. Main results by Autonomous Community

Likewise, interregional inequality can be studied by means of Lorenz curves for annual wages and their corresponding Gini indices (also in Table 2) for each Autonomous Community. Graph 10 shows the Lorenz curves for the extreme autonomous communities: the minimum (least inequality among its employees) was achieved by Comunidad Foral de Navarra with an index of 29.62 and the maximum (greatest inequality), by the Comunidad de Madrid, with a value of 36.37.





3 Wages by Activity Branch¹

As can be seen in Graph 11, the economic activity with the highest average annual salary was the *Electricity, gas, steam and air conditioning supply*, which, with an average of 51,237.33 euros per worker per year, provided a salary 113.4% higher than the national average. Also of note are the *Financial and insurance activities,* with 45,034.53 euros, 87.6% more than the average wage.

In the opposite direction are *Hotel, restaurants and catering*, with an average of 14,345.30 euros, 40.3% lower than the total, and *Other services activities*, with an average salary of 16,374.23 euros, almost 32% less than the average for the total of activities.

¹ Description of the activity sections in the 2009 National Classification of Activities (CNAE-09):

B. Extractive industries

C. Manufacturing industry

D. Electricity, gas, steam and air conditioning supply

E. Water supply, sewerage, waste management and remediation activities

F. Construction

G. Wholesale and retail trade; repair of motor vehicles and motorcycles

H. Transportation and storage

I. Accommodation

J. Information and communications

K. Financial and insurance activities

L. Real estate activities

M. Professional, scientific and technical activities

N. Administrative and support service activities

O. Public Administration and defence, compulsory Social Security

P. Education

Q. Health and social services activities

R. Artistic, recreational and entertainment activities

S. Other services

GRAPH 11. Annual average earnings per worker by Activity Branch

E	uros
. Supply of electrical	51,237.33
K. Financial and insurance	45,034.53
B. Extractive industries	33,990.57
J. Information and communications	33,117.64
O. Public Administration	29,824.04
M. Professional, scientific	28,058.48
C. Manufacturing industry	27,640.12
E. Water supply,	27,289.63
Q. Health and social	26,851.10
H. Transport and storage	24,653.86
Total activities	24,009.12
P. Education	23,679.17
F. Construction	22,971.05
L. Real estate activities	21,249.15
G. Wholesale	21,006.17
R. Arts, recreation,	18,517.55
N. Administrative and support	17,176.75
S. Other services	16,374.23
I. Accommodation	14,345.30

As regards wage differences by sex and economic activity, it should be noted that the ranking of activities in each sex was maintained with slight modifications. Thus, *Electric energy, gas, steam and air conditioning supply* received the highest salaries, both for men and for women, while Hospitality had the lowest.

Looking at graph 12, we can see that women had a lower salary than the men in all sections except Section B, Extractive Industries. In this area, the average salary of women was 14.9% higher than that of men, due to the fact that in this activity, the women selected in the sample held jobs with higher qualifications than the men. However, this result should be taken with caution, since there are very few women working in this activity, the sample size is small, meaning that the sampling errors are high. Specifically, the coefficient of variation for the data on the average salary of women in Section B is 13.38, while the relative general sampling error is 0.42.

At the other extreme, the section with the greatest divergence between men's and women's salaries is Section N, *Administrative activities and auxiliary services*. The inequality is partially explained by differences in occupations and in type of working day and contract.



GRAPH 12. Desviation of women's earnings over men's earnings in %

4 Wages and Occupation¹

Occupation was one of the variables that most influenced the wage level. Graph 13 allows us to observe the differences between the average wages of each group and their deviation from the total.

It is worth noting the large salary difference between Major group 1, *Directors and managers*, and the rest of the groups. Specifically, the salary for jobs in this group is 126.3% higher than the total average salary.

As regards the remainder of the occupations, wages for the *Technicians and scientific and intellectual professionals* (Major groups 2) *Technicians; support professionals* (Major groups 3) were above the average. The other occupations

¹ Description, Major Groups of the National Classification of Occupations 2011 (CNO-11)

¹ Directors and managers

² Scientific and intellectual technicians and professionals

³ Technicians; support professionals

⁴ Accounting, administrative and other office employees

⁵ Workers in catering, personal, protection and retail services

⁶ Skilled agricultural, livestock, forestry and fishing sector workers

⁷ Craftspersons and skilled workers manufacturing industries and construction (except installation and machinery operators).

⁸ Installation and machinery operators, assemblers

⁹ Basic occupations

⁰ Armed forces occupations

had average wages lower than the national average, with the lowest wages going to *Basic occupations* (Major group 9), followed by *Workers in catering, personal, protection and retail services* (Major group 5) and of *Skilled agricultural, livestock, forestry and fishing sector workers* (large group 6).

	Euros	T		126.34	1.
1. Directors and managers	54,341.32	+	43.72		2.
2. Scientific and intellectual	34,505.80	+	21.88		
3. Technicians and support	29,261.35	† _			3.
All occupations	24,009.12	0.	00		Total
8. Installation and machinery operators	23,184.12	-3.44			8.
7. Craftspersons and skilled workers	22,617.64	-5.80			7.
4. Accountancy, administrative	21,730.58	-9.49			4.
6. Skilled agricultural, livestock	19,690.87	-17.99			6.
5. Workers in catering, personal,	17,047.80	-28.99			5.
9. Elementary occupations	15,163.76	-36.84			9.

GRAPH 13. Annual average earnings per worker by occupation

In the case of *Military occupations* (Major groups 0), only a small group met the study conditions, meaning there is not enough data to provide a reliable result.

The tables in the publication show not only the average salary, but also certain percentiles for the occupations, that provide a greater level of detail on the salary differences. For Major group 1 of occupations, *Directors and managers*, as has been said, the average salary amounted to 54,341.32 euros, but 10% of this group exceeded 87,119.57 euros; on the other hand, the average salary of workers in *Basic occupations*, Major group 9, reached 15,163.76 euros, and of these, the most favoured 10% exceeded 24,431.29 euros.

This pattern is repeated if broken down by occupation and sex. The occupations with the highest remuneration were the same for men and women (Major groups 1, 2 and 3), and in the same order. The groups with the lowest salaries also coincided in men and women (Major groups 5, 6 and 9), but the order differs from that observed in the global results. It should be noted that for women in Major group 6, the sample size is less than 100 workers, which makes the result unreliable, so the data is not given.

Graph 14 shows that in all occupations women had a lower salary than men. The smallest difference was observed in Major group 2, where it is, on average, 15.9% lower. The greatest difference is in Major group 9, with a salary 32.2% lower than the average annual salary of men.



GRAPH 14. Desviation of women's earnings over men's earnings in % by occupation

One important factor with occupation is knowing if the worker is responsible for other workers or performs supervisory tasks, and how these tasks affect wages. Graph 15 shows how in each occupation, having responsibility led to an increase in salary compared to the average salary for said occupation. In this case, the greatest responsibility-related differences in salary were in Major group 5, *Workers in catering, personal, protection and retail services*, while Major group 1, *Directors and managers*, had smaller responsibility-related salary differences.



GRAPH 15. Comparison of average annual wages by occupation, with and without supervising responibility

It should be clarified that in Major groups 8 and 9, the number of workers with responsibility was very small, as such, they are not shown in the graph. Not enough workers from Major Group 6 have supervisory responsibility to be shown.

In any case, the Major occupation groups remain internally heterogeneous, and for a better study of wage discrimination it is necessary to delve into the classification of occupations and add other variables to the study, such as the type of working day and contract.

5 Wages and type of working day

The type of working day is, without a doubt, one of the determining variables of salary level. In the figures in Graph 16 -which collects the annual wages of workers based on hours worked- it can be seen that the average annual wage level in part-time hours was close to 50% of the average wage total, for both men (48.6 .1%) and women (55.9%).



GRAPH 16. Comparison of average annual by type of working day and sex

However, this comparison, which is valid from the point of view of workers' income, is misleading if we compare wages as "price of labour" since full-time wages correspond to more hours of work than do part time. Earnings per hour, which is analysed at the end of this section, is thus the most relevant variable.

Before continuing describing the results obtained by type of working day, it should be noted that within the area investigated, 18.0% of workers had part-time hours. This was higher in the case of women (27.3%) than in the of men (10.8%).

The concentration of part-time workers' wages is of particular note. Graphs 17 and 18 detail this. Graph 17 shows that the wages of part-time workers are much more concentrated around the modal value, the maximum peak of the curve, and that this value is similar in both sexes.



GRAPH 18. Distribution of annual wages by type of working day and sex



Graph 18 shows that around 50% of part-time workers, in both sexes, did not exceed 10,000 euros in salary. Starting from that salary level, the differences between men and women were more notable, with women showing lower salaries than men.

Regarding full-time workers, the distribution of wages for women is always to the left of that of men, indicating lower wages at all levels.

Per hour earnings have been calculated as the monthly earnings divided by the hours worked (normal and extraordinary) for the reference month. The reference month used is October 2018, which is not characterized by extraordinary payments, and resulting hourly earnings are thus lower than what would be obtained if annual data were used. The reason for using this method is that the

estimate of the hours worked in the reference month is more accurate than the annual hours (see the working time section of the methodological note).



Graph 19 shows that the earnings-hour of part-time workers was lower by almost 15% than the average earnings-hour, in the case of men, and by more than 25% in that of women. However, for full time, the mean earnings-hour in men was 6.7% higher than the mean, while that of women remained slightly lower (0.5%).

Indeed, while the average annual female wage was, as already mentioned, 21.4% lower than that of males, if the hourly wage is considered, this difference is reduced by approximately half (10.3%).

Just as the distribution of the annual salary according to the type of working day has been studied, the distribution of the hourly salary according to the same variable is studied below in Graphs 20 and 21.



GRAPH 20. Density funcionts of hourly wages per worker by type of working day and sex

Men. Full-time — Men. Part-time — Women. Full-time — Women. Part-time



If we compare graphs 17 and 20, that is, the density functions of the annual salary and the hourly salary, respectively, we can see that the peaks of the hourly profit curves per worker are much closer to each other. This indicates, in terms of labour prices, that the differences in salary by sex and type of working day were not as high as when making a comparison in terms of annual income.

Graph 21 shows that almost 75% of part-time women had hour-earnings of less than 10 euros, while, for the same percentage, full-time women had earnings of less than 15 euros. In the case of men, approximately 75% of those who worked part-time had earnings of less than 12 euros, and this figure was 15 euros for full-time.

In the study of the type of working day, in the case of women lower wages are observed for both full-time and part-time. However, if hourly earnings are analysed, the differences observed between the types of working day are greater than those between men and women.

6 Wages and type of contract

For the purposes of the survey, two types of contract have been considered: permanent contracts and fixed-term (temporary) contracts.

In order to compare workers with an indefinite-term contract and those with a fixed-term contract, the salary of workers who did not stay at the workplace all year has been adjusted. To this end, they were assigned equivalent annual wages to those they would have been paid, had they worked for the entire year under the same conditions.

The average annual salary of workers with a fixed-term contract was almost 30% lower than that of permanent contracts and approximately 25% lower than the global average salary.

Differentiating by sex, men with a permanent contract had a salary that was 20.7% higher than the average annual salary, while in the case of the fixed duration contracts, it was lower by 20.9%. Among women, wages were below the average wage, regardless of the type of contract: 7.5% lower for permanent contracts and 28.9% lower for fixed-term contracts. Graph 22 represents this analysis.



One characteristic that stands out is that the proportion of men and women by contract type is similar: approximately 77% of contracts were permenant in both cases.

Graph 23 firstly shows a large irregularity in densities according to contract type. The lowest annual earnings corresponded primarily to fixed-term contracts for women. On the other hand, men with a permanent contract were the least frequent in low earnings and the most frequent in high earnings.



GRAPH 23. Density functions of annual wages by type of contract and sex

This is more clearly reflected in Graph 24, where the curve furthest to the left (lowest earnings) is that of women with a fixed-term contract, while the one furthest to the right is that of men with a permanent contract.



GRAPH 24. Distribution of annual wages by type of contract and sex

Another interesting observation from Graph 24 is the difference in salary levels according to contract type and sex. For example, in the case of fixed-term contracts, 50% of men had a salary of less than 18,000 euros, while in the case of women, this salary was 15,000 euros. In the case of indefinite-term contracts, 50% of workers have an annual salary of less than 25,000 euros, for men and 19,000 euros, for women.

In the highest salaries, 10% of workers with a permanent contract exceeded a salary of 50,000 euros in the case of men, while this percentage was 5% in the case of women. In the case of fixed-term contracts, the percentage was close to 2% in both cases.

In per hour earnings, represented in Graph 25, there are fewer differences both between men and women, and between infinite and fixed duration contracts, than when the comparisons are made with the annual salary. This is seen not only in the mean values, but also in the distributions represented in Graphs 26 and 27, where the density and distribution functions are, respectively.





7 Wages and level of studies

Together with the occupation variable, education is one of the most important characteristics when studying worker earnings. Wage differences between workers with different official qualifications are very notable. As can be seen in Graph 28, annual salary increases as educational level increases. Workers without studies or those who have not completed Primary Education received a remuneration 36.7% lower than the average salary, while university graduates received an annual salary 57.7% higher than the average. With higher level vocational training and above, the remuneration exceeded the average salary.

Gross annual per worke	r	Desviation from the average wages as a %
	Euros	т
VII. University graduates,	37,869.24	57.7
VI. Univestity diploma	29,895.43	24.5
V. Intermediate-level	25,751.09	7.3
All studies	24,009.12	0.0
IV. Secondary education II	22,246.72	-7.3
III. Secondary education I	18,554.04	-22.7
II. Primary education	17,318.04	-27.9
I. Without studies	15,190.30	-36.7

GRAPH 28. Average annual wages by level of studies

The difference between men and women is evident when comparing workers with the same degree level, in Graph 29. The average salary for women was more than 20% below the average salary for men at any given level of education. The greatest relative differences between men's and women's salaries were observed at the levels of *Primary Education* and *Less than Primary*, while the smallest differences were in the groups of *Higher Level Degree Holders* and *University Graduates*.



GRAPH 29. Desviation of women's earnings over men's earnings by level of estudies as a %

Graphs 30, 31 and 32 show the distribution of salaries according to the level of studies achieved. Here, the large differences between low and high levels of studies can be seen. In the case of men, graph 31 shows how more than 50% of university graduates exceeded a gross salary of 37,000 euros in 2018. 2% of male workers with no education earned more than that amount. In the case of women,

50% of graduates exceeded an annual gross salary of 31,000 euros, while only 1.4% of workers without studies managed to exceed this income.





GRAPH 31. Distribution of gross annual wages by level of studies. Men







As can be seen in Graph 33, there is a positive relationship between worker age and salary level. While there is no salary supplement for age, there is one for company seniority. Seniority will be the object of study for the next point; but it should be noted that age and seniority are closely related, since the oldest workers will, in general, also be those with more seniority in the company. Además, workers change jobs over time, and in most cases they do so while improving their economic conditions, due to the higher value placed on experience acquired with age.



GRAPH 33. Average annual wages by age in complete years and sex

The graph shows how the lines for men and women fade with age. Wage differences by sex were greater as the age of the workers increased, except in the final bracket. In the lower and upper ages, the curve's behaviour is somewhat erratic. This is due to the fact that the sample in these sections is small, causing a decrease in the statistical reliability of the results.

	Gros	Men/Women			
	Total	Women	Men	ratio	
ALL AGES	24,009.12	21,011.89	26,738.19	78.6	
Under 20 years of age	8,423.42	7,277.64	9,118.47	79.8	
20 to 24 years old	12,914.18	11,100.84	14,364.46	77.3	
25 to 29 years old	17,525.91	16,045.85	18,930.97	84.8	
30 to 34 years old	20,763.51	18,689.23	22,818.88	81.9	
35 to 39 years old	23,431.41	20,757.25	25,901.92	80.1	
40 to 44 years old	25,193.03	22,206.71	27,940.20	79.5	
45 to 49 years old	26,014.46	22,826.82	28,978.69	78.8	
50 to 54 years old	26,871.12	22,832.87	30,312.15	75.3	
55 to 59 years old	27,948.41	23,580.95	31,843.93	74.1	
64 to 64 years old	26,073.06	23,029.65	28,741.28	80.1	
65 years old and over	24,584.63	19,472.58	29,002.54	67.1	

CHART 3. Main results by age in complete years

9 Salaries and company seniority

As noted in the previous section, the study of salary's dependence on company seniority makes sense. This is in part because there is a salary supplement specifically linked to seniority, but also because it is assumed that with the experience gained in the company, workers are promoted within the scale of responsibilities and remuneration. Graph 34 shows this trend of salary increases with seniority.



GRAPH 34. Average annual wages by company seniority in complete years and sex

It should be noted that the sample gradually shrinks with age, so the results at the tail end of the graph must be interpreted with caution.

	Gro	Men/Women		
	Total	Women	Men	ratio
ALL	24,009.12	21,011.89	26,738.19	78.6
Less than 1 year	16,452.04	13,596.00	18,813.20	72.3
1 to 3 years	19,346.54	16,634.10	21,506.00	77.3
4 to 10 years	23,815.63	20,898.61	26,807.89	78.0
11 to 20 years	28,033.26	24,555.46	31,815.77	77.2
21 to 29 years	34,812.20	31,220.74	37,822.17	82.5
30 years and over	36,405.25	32,705.56	38,984.59	83.9

CHART 4. Main results by seniority in complete years

10 Wages and nationality

Only 5.6% of those in sample have foreign nationality, so the results of this section should be taken with care, especially in regard to workers from European countries that do not belong to the European Union.

As can be seen in Graph 35, only national workers had a salary above the average. The rest of the workers in the European Union had a salary lower than the average by 12.5%, while the rest of the nationalities had a salary lower than the average by more than 30%.



GRAPH 35. Comparison of average annual wages by nationality

Graph 36 shows salary distribution by nationality, Spanish or foreign, and sex. The most favored group are male workers of Spanish nationality, while foreign women are the lowest paid. It can be seen that the curves for Spanish women and foreign men intersect.



GRAPH 36. Distribution of annual salary by nationality

Around 50% of male Spanish workers earned more than 23,000 euros in 2018. 34% of Spanish women equalled or exceeded said average reference salary, while 24% of men and 15.2% of women with foreign nationality did so.

On the contrary, 5% of male workers of Spanish nationality had a salary of more than 60,000 euros. This percentage decreased for all other cases, and was close to 2.5% in men with foreign nationality and Spanish women, and 1.1% for non-Spanish female workers.

11 Composition of monthly salary

The usual accrual period is the month. However, the existence of payments whose expiration period is longer than one month (extraordinary payments) means that it should not be used as the only reference, especially when comparing salary levels.

In this survey, the monthly salary has been used to analyse composition according to remuneration items (base salary, salary supplements). The analysis of salary differences according to the different variables, as seen in the previous sections, has been conducted with the annual salary.

The amount and frequency of the so-called "extraordinary payments" varies from one worker to another. The most common case consists of the receipt of two extra payments each year, one for summer and one for Christmas; but in certain activity sectors three, four or even six extraordinary bonuses are received during the year, and these can have different names (benefits, agreement, results, etc.).

On the other hand, certain professions include "irregular" remuneration, in the sense that the amount is not known in advance. This includes salesperson rewards or bonuses, supplements for night work, on weekends or shifts, and overtime pay.

The range of salary supplements, and net salary in general, is enormous and the survey cannot isolate all possibilities. From a statistical point of view, and to

facilitate the comparison of the monthly salary, the following four categories of payments were thus considered sufficient:

- The fixed part of the monthly salary: base salary.
- Salary supplements, showing the total of supplements and the bonuses for night time, shifts, and work on holidays.
- Overtime payments.
- Extra payments received in the month of October.

Table 5 shows the breakdown of the average monthly salary.

	(euros)
Base wage	1,240.27
+ Wage supplements	523.69
+ Overtime payments	7.48
Ordinary wage	1,771.44
+ Extraordinary payments	37.49
Gross wage	1,808.93
- Social Security contributions *	115.98
- Income tax withholdings	262.20
Net wage	1,430.75

CHART 5. Composition of monthly wages

* By the worker

Graph 37 shows the composition of the average salary for the total and by sex in the month of October 2018. The base salary was the main component of the total salary. It reached 67.3% in the case of men and 70.3% in the case of women. This difference is related to the salary differences between men and women. In fact, salary composition generally varies with salary level. The higher the salary, the greater the weight of salary supplements.



INE. National Statistics Institute

Extraordinary payments had a weight of 2.2% for men and 1.9% for women. The month of October was chosen to obtain the monthly salary, because, as already mentioned, is not characterized by payments or seasonal periods of absence, allowing "normal or ordinary" monthly earnings to be determined.

Overtime payments were the least important in salary composition; As can be seen in the publication results tables, they do not comprise more than 2% in all types of occupations and economic activities, except security and investigation activities, where they represented 6.3% of gross salary.

The breakdown of gross and net wages is shown in Graph 38. The differences in percentage of the net versus the gross salary between men and women are justified by the different average salaries in both groups, and by the logical effect of income tax, which is progressive with the salary.



12 Composition of annual salary

The composition of the annual salary has been studied using the periodicity of payments, distinguishing between monthly payments, or ordinary salary, and payments of more than one month, or extraordinary payments. The part received in kind has also been distinguished.

As can be seen in Graph 39, the greatest weight in the gross annual salary is the ordinary salary, while in-kind contributions wERE of little importance.

By sex, extraordinary and in-kind payments have greater weight in men than in women, which implies that the ordinary salary is more important for women (90.2%) than it is for men (89.4%).



GRAPH 39. Composition of the annual wages

13 Other Variables

So far the variables studied have been those characterizing the worker. However, there are other variables in the survey that affect wages, which are directly related to the company or workplace in which workers carry out activities. The results for the four main variables are presented below:

- 1) size of the workplace
- 2) scope of the collective agreement
- 3) target market
- 4) type of control

For these variables -in addition to the usual analysis- certain information of interest is added, such as the Gini index.

^{13.1} WORK CENTRE SIZE

In terms of work centre size, Graph 40 shows the differences with respect to the total. The relationship that emerges is evident: wages increased with the unit size, and this increase was greater in men than in women.



GRAPH 40. Comparison of average annual wages by size of the work centre

Graph 41 allows us to better observe the differences between the salaries of men and women, broken down according to workplace size. This graph clearly shows a decrease in the differences between the sexes with an increase in workplace size. That is, the greater the number of workers, the less the difference in the average salary between men and women.



GRAPH 41. Desviation of women's earnings over men's earnings by size of the work centre as a %

Table 6 shows various measurements of interest regarding the annual gross salary, according to workplace size. The Gini Index decreased with the unit size, showing that there is less inequality in the largest companies.

	Total	1 to 49	50 to 199	more than 200	
Gini Index	34.30	33.69	32.02	31.46	
Average	24,009.12	19,685.05	24,906.46	29,783.80	
Median	20,078.44	17,100.35	21,725.97	26,232.80	
Range	7,346,971.73	7,346,877.18	3,002,929.37	5,572,651.35	
%workers	100.00	29.41	25.17	45.42	

CHART 6. Summary measures of gross salary by size of the work

Below we can see the distribution of wages broken down by workplace size and by sex. The following graphs show the density functions; here, issues such as the following stand out:

Graph 42.1 for small work centres (1-49 workers): on the one hand, the asymmetry to the right of the distribution of women's wages stands out, which means that there were many more women in those centres with low wages than with high wages. In the case of men, the distribution shows a large concentration around the modal value (maximum peak); there was therefore little variability in the wages of men in these centres.

Graph 42.2 for medium-sized work centres (50-199 workers): there are very similar distributions for men and women, with the exception that the distribution for women is displaced to the left, that is, towards lower wage values. Both are asymmetrical to the right.

Graph 42.3 for large work centres (more than 200 workers): much more variability is observed than for the other sizes. Although there are fewer differences between the sexes when comparing average salary in these centres, if we observe the distributions, we can see that there was a large difference between men and women. We can see that in below average wages the frequencies are much lower for men than for women, in above average wages the opposite occurs.



GRAPH 42.1. Densitiy functions of annual wages by sex for size of the work centre for 1 to 49 workers



GRAPH 42.2. Densitiy functions of annual wages by sex for size of the work centre for 50 to 199 workers





In order to more clearly show the differences due to size, Graph 43 presents the corresponding distribution functions. What has already been mentioned can be observed: salary increases with unit size.



Collective bargaining also affects workers' wages. The survey includes the regulation type for the employment relationship between the worker and their workplace. It notes whether a collective agreement exists, and which one in particular (state sector, lower level sector, or company or workplace); or if, on the contrary, the work relationship is governed by some other form of regulation.



GRAPH 44. Structure of form of regulation of labour relations

Graph 44 shows that the vast majority of labour relations between workers are through collective agreements, and that the proportion is somewhat higher in males.

As can be seen in Graph 45, of all the types of collective agreements, for both men and women the highest wages were achieved in the *company or workplace agreements*. However, in the case of women, the highest average salary occurred in workplaces assigned to *Another form of regulation*. The most unfavourable agreements, for both men and women, were those that fell under *Sub-state level* agreements, which includes interprovincial, provincial and county agreements, among others.



^{13.2} SCOPE OF THE COLLECTIVE AGREEMENT

Table 7 shows the summary measures for this variable. Among all the agreements, it can be seen both the mean and median with the highest value were for *a company or workplace* agreement, and that the Gini index is the lowest (less inequality) for that same type of agreement.

Overall, *Another form of regulation* was the agreement type with highest average salary, the highest median and the lowest Gini index; although this result should be taken with caution due to the low number of workers: 9.9% of the total.

	Gini Index	Average	Median	Range	%range
Total	34.30	24,009.12	20,078.44	7,346,971.73	100.0
All agreements	34.54	23,176.31	19,301.82	5,572,700.95	90.1
State	35.72	23,300.35	18,903.24	2,091,093.34	31.6
Smaller than State	32.59	20,486.45	18,072.81	1,693,005.13	34.5
Company or workplace	e <u> </u>	29,664.78	25,843.84	5,572,700.95	24.0
Another form of regulation	28.86	30,798.98	28,917.52	7,346,806.63	9.9

CHART 7. Summary measures of gross salary by form of labour relations

13.3 DESTINATION MARKET FOR PRODUCTION

Another of the variables included in the survey that is important for wage analysis is the target market for the company's production. Graph 46 shows how the different market types shown in the variable are distributed among workers.



GRAPH 46. Structure of type of target market of the production

From the data obtained in the survey, we can deduce a positive relationship between the market type and salary: the broader the market scope, the higher the salary level. Thus, if the company's production is destined for the entire world, the global average salary was 39.9% higher than the global average, while if it is limited to the local or regional market it was 11.9% lower than the half.

The breakdown for the case of men and women according to the type of market with respect to the total average can be seen in Graph 47.



GRAPH 47. Comparison of averane annual wages by type of target market of the production

Graph 48 shows the deviation of women's earnings compared to men's in each type of destination market. The case with the smallest differences between the sexes was the local or regional market, with women's wages 16.3% lower than men's. Once again, it should be noted that, as shown in graph 46, the number of workers for the European Union market and the world market is small, so these results must be taken with caution.



GRAPH 48. Desviation of women's earnings over men's earnings by type of target market of the production

Table 8 shows the summary measures of salary according to the destination market. The increase in both the mean and the median is observed the wider the target market is.

CHART 8. Summary measures of gross salary by type of target
market of the production

Total		Local o regional	National	EU	World	
Gini Index	34.30	34.48	33.53	29.63	30.03	
Average	24,009.12	21,143.11	25,399.31	27,260.99	33,591.64	
Median	20,078.44	18,074.52	20,953.15	23,022.00	29,435.97	
Range	7,346,971.73	1,882,877.77	7,346,971.73	616,379.88	1,692,263.30	
%workers	100.0	37.9	42.1	6.4	13.6	

In Figures 49.1, 49.2, 49.3 and 49.4 the density functions of the annual salary are represented according to market types. It can be seen how in the lowest salaries the group with the highest frequencies were women and especially those belonging to the local or regional destination market, while the group with the lowest frequencies were men belonging to the world market. In the higher salary bands, almost all the curves are very close, except that of the men in the world market, which is clearly above all the others, that is, in the higher salary bands, this group is the most frequent.



1000 11000 21000 31000 41000 51000 61000 71000 81000 +90000

Annual w ages in € Hombres — Mujeres

0.08

0.06

0.04

0.02

0



Hombres — Mujeres





Graph 50 shows the distribution functions for each type of market. It can be clearly observed how in 2018 the world market prevailed among the highest wages and the local and regional market with the lowest wages. In addition, the closeness of the curves of the national market and that of the European Union can be observed, which even overlap from an approximate annual salary of 43,000 euros.



GRAPH 50. Distribution of annual wages by sex and type of target market of the production

13.4 COMPANY CONTROL

Finally, as regards the ownership or control of the company (public or private sector), bearing in mind that public control does not include officials assigned to the Special Passive Classes System and does include employees of public companies. It is observed in Graphs 51 and 52 that, if the control is public, the average salary level was higher and the difference between sexes was smaller. On the other hand, it is also necessary to point out the different occupational structure and the different economic activities carried out by workers in both sectors.





GRAPH 52. Desviation of women's earnings over men's earnings by Company control



Women obtained a salary 28.9% higher than the total average if the control is public and this is where the difference with respect to the male salary was lower (9.8%). It should be noted, however, that these results must be interpreted with caution since the sample of the public sector worker group is small (16.4%).

Table 9 shows the summary measures of salary according to the type of control. It is observed that both the mean and the median were higher in the case of public control. It also highlights the great difference in the salary range, in the case of private control the range was much higher since the minimum wage was much lower than the minimum of public control, just as the maximum salary of private control was much higher than the maximum of public control. This result is consistent with the values of the Gini index where the value is much lower in the case of public control, that is, there was less inequality than in private control. In fact, the difference is so remarkable that in Graph 53 the Lorenz curves are represented for both cases and it is observed that the one corresponding to public control is closer to the diagonal (perfect equidistribution).

CHART 9. Summary measures of gross salary by Company control

	Total	Public	Private
Gini Index	34.3	26.1	34.8
Average	24,009.12	32,422.77	22,194.89
Median	20,078.44	30,478.27	18,491.50
Range	7,346,971.73	276,789.33	7,346,971.73
%workers	100.0	16.4	83.6

Graphs 54 and 55 are presented below with the density and distribution functions of the annual salary, respectively. In both graphs it is very clear that the greatest differences between public and private control were found in the lower salary

bands where in the case of public control there were very few workers and in the case of private control there were many more, especially women.



GRAPH 53. Lorenz curve of gross annual wages by Company control

GRAPH 54. Density functions of annual wage by sex and Company control





GRAPH 55. Distribution of annual wages by sex and Company control

It should be noted, on the one hand, that in the lowest salaries (less than 16,000 euros per year) there were very few public sector workers (10%) while there were a large number of private sector workers (almost 38%). Furthermore, both inequality and the range of wages is higher in the private sector than in the public sector. In other words, there were both much lower and much higher wages in the private sector.

14 Comparison with the results of the previous survey

Since the first publication of the Structure of Earnings Survey, the research areas of the survey have gradually expanded. In 2010, the contribution centers of the General Social Security Scheme whose economic activity was framed in sections B to S of the CNAE-09 were included, which means the inclusion of public employees in section O of the CNAE -09, Public Administration and defense; Mandatory Social Security, included in said regime¹. In 2006 these workers were not included, so the comparison of average wages between the two surveys is not straightforward. Table 10 shows the evolution of wages between the years 2006-2018 once these workers have been eliminated.

	Annual earnings per worker. Euros		Growth Rate					
	2006	2010	2014	2018	06-10	10-14	14-18	06-18
TOTAL	19,680.88	22,335.76	22,439.84	23,563.15	13.5	0.5	5.0	19.7
Men	22,051.08	25,131.37	25,457.40	26,383.55	14.0	1.3	3.6	19.6
Women	16,245.17	19,110.32	19,164.16	20,455.10	17.6	0.3	6.7	25.9

CHART 10.	Comparison	n SES 2006	to 2018

It is observed how the growth of wages between 2014 and 2018 was much higher (5.0%) than that observed between 2010 and 2014 (0.5%), although still considerably lower than that registered between the period 2006 to 2010 (13.5%). The graphical representation of these rates is observed in Graph 56.

¹ Officials assigned to the Special Passive Classes System are not included in any of the EES editions. Employees of public companies are included.



GRAPH 56. Evolution of annual wages by sex

As of 2010 the surveys are directly comparable, since they contain section O. Table 11 shows the results corresponding to this comparison. It can be observed that total growth is also 5%, but it increases slightly in men (3.9%), while it slightly decreases in women (6.4%).

CHART 11. Comparison SES 2010 to 2018

Anr				
	2010	2014	2018	Grow th Rate
TOTAL	22,790.20	22,858.17	24,009.12	5.0
Men	25,479.74	25,727.24	26,738.19	3.9
Women	19,735.22	19,744.82	21,011.89	6.4

Graph 57 shows the evolution of the average annual salary between 2014 and 2018 by activity sections. Growth was observed in all sections, with the highest in Section P (*Education*) and the lowest in Section D (*Electricity, gas, steam and air conditioning supply*).



GRAPH 57. Comparison of the average wages between 2014 to 2018 by activity sections

As a summary of this information, the activities have been grouped by sector and we can see their four-year evolution from 2014 to 2018 in Graph 58.



GRAPH 58. Growth rates of annual average wages by activity sectors

By sectors, the highest growth between 2014 and 2018 occurred in the *Services* sector, while growth in Construction was slower, with 1.6%. By sex, salaries grow significantly more in women than in men. This occured both in the total and in each sector.

The evolution in each type of working day is analysed below. Graph 59 reflects an increase in salaries for both contract types. This increase was the most notable in part-time contracts. Within part time, the rise of 23.1% in male workers stands out.



GRAPH 59. Growth rates of annual average wages by type of woking day

As regards control type, graph 60 shows that, between 2014 and 2018, wages increased in both types, and that the increase was more significant in the case of Public Control. Thus, the annual salary for Public Control underwent a rise of 10.1%, while in Private Control the increase was 3.5%. In all cases, women's wages rose more than men's.



GRÁFICO 60. Growth rates of annual average wages by Company control

The Gini index showed a small decrease between 2014 and 2018, moving from 34.7 to 34.3. This means that between these two years, inequality in wage distribution was reduced.

The wage gap also decreased, from 14.0% to 11.3%, meaning that the wage differences between men and women decreased.

15 Conclusions

Finally, the most remarkable conclusions are presented.

There was a higher proportion of women in the sections with the lowest salaries, while the situation practically reversed when the salary increased, with a higher proportion of men in the higher sections.

The annual salary decreases with the increase in the level of occupation according to CNO-11.

Regarding the annual salary, depending on the type of contract, lower salaries are observed in the case of a fixed term than in the case of indefinite. However, the salary of women is lower than the total average salary, for both fixed and indefinite periods.

In turn, the annual salary increases with the level of education, age, length of service in the company, as well as with the size of the workplace and with the breadth of the company's target market.

The inequality in private control is higher although similar to the global one, while in public control a much more equitable distribution of wages is observed.

Regarding the comparisons with the Structure of Earnings Survey carried out in 2014:

- In the Industry and Construction sectors, the average salary has experienced moderate positive growth, while in the Services sector there is a decrease in the average salary.
- There is a large increase in the differences between full-time and part-time wages, with a considerable decrease in part-time wages.
- In the annual salaries of public control there has been a decrease in both men and women, while those of private control have increased for both sexes.