# 2002 Wage Structure Survey

Main results

November 2004

# **Main Results**

# Introduction

This document includes the main results obtained from the 2002 Wage Structure Survey, which was performed in a harmonised manner throughout the European Union, in accordance with European Union Council Regulation no. 1916/2000.

Almost 22,000 workplaces and over 215,000 wage-earners have taken part in this project, the second survey of its kind. The first was also carried out in a harmonised manner throughout the whole of the EU, back in 1995. From now on, it will be performed every four years.

The main results that can be obtained using the survey information are presented hereunder. Furthermore, the publication contains an ample number of tables that can be viewed directly via the website. Nevertheless, the survey presents a vast array of possibilities, allowing it to be developed in the future by researchers who have an interest in the labour market.

# 1 Wage distribution

In 2002, the average gross annual salary amounted to 22,169.16 euros per worker among males and 15,767.56 euros among females. These figures show that the annual average for females totals 71.1% of the wage males receive, although this difference should be analysed considering other labour variables (type of contract, occupation, seniority, etc.) that have a substantial bearing on the salary.

The wage distribution presented in the survey, depicted in Graph 1, is asymmetrical, slanting to the right, with a high level of dispersion. Most frequently, wages are lower than the medium salary (i.e. the same number of workers with very high wages and workers with very low wages), which is itself lower than the average salary. In all, few workers receive very high salaries, but said persons have a notable effect on the average salary.



The difference between the average salary (19,802.45) and the most frequent salary (12,503.29) totals over 7000 euros. This difference accounts for the perception users and the public opinion have that the results obtained via traditional surveys: "are high," since only average salary values are included.

Salary inequalities can be represented graphically using the Lorenz curve. The horizontal axis presents the percentage of workers and the vertical axis the accumulated percentage of their wages as regards the total wage bill. This curve is linked to the Gini index, which is used to measure inequality and represents the distance between the Lorenz curve (graph 2) and the bisector, which symbolises a perfect distribution, where all persons benefit from the same salary. The Gini index ranges between 0 and 1, with value 0 standing for the perfect distribution, where all persons receive the same salary.

Analysing this curve for the whole of the population shows that 10% of the wage-earners with the highest salaries accumulate over 26% of the wage bill, whilst 20% of the workers with the lowest salaries only represent 8%. The Gini Index amounts to 0.34.



Graph 3 shows the wage distribution by sex. Wage distribution for females stands further towards the left than for males in all salary levels. The number of females who earn up to 10,500 € is greater than that of males with the same salary level. As from this figure, the number of females in each wage level is always lower than the number of males receiving that same salary. Moreover, there are hardly





Graph 4 shows the same data in an accumulated manner. The lower left end of the graph shows that in 2002, 20% of the females earned less than 10,000 euros (precisely 28.7% of the females), whilst barely 8% of the males earned less than said figure. This difference can be explained, essentially, by the fact that most of the part-time workers considered in the scope of this survey are females. The upper end shows that 20% of the males earned over 30,000 euros, which only affected slightly over 9% of the females.



#### 2 Territorial analysis

Annual average earnings by Autonomous Communities confirm the results obtained in traditional surveys. The highest wages correspond to Madrid (23,183.37 euros a year per worker), País Vasco (22,840.34 euros), Comunidad Foral de Navarra (20,960.69 euros) and Cataluña (20,728.60 euros), where average annual earnings exceed the national average. The average wage in the other Autonomous Communities is below the national average. Extremadura (16,401.13 euros), Región de Murcia (16,528.17 euros) and Castilla la Mancha (16,688.32 euros) have the lowest wages.

Graph 5 shows the differences regarding average earnings in each community compared to the national whole.



Differences between sexes are not equal in all regions, as appears in graph 6. This disparity does not always respond to a greater wage discrimination in one region or another, but to the different employment structures used. Many factors influence wage differences, such as: type of contract, type of working day, level of studies and different occupations, among others. These differences are

described in the graph using the male/female ratio variable. That is to say, the percentage of the average female salary compared to the corresponding male salary.

Thus, the Autonomous Community with the least variation is Canarias, alongside Ceuta y Melilla; whilst Castilla y Leon presents the greatest divergence, followed by Aragón. Nevertheless, the results for Ceuta y Melilla included in this survey should be analysed carefully, since it considers small sample sizes that could lead to higher sample errors. As a rule, in almost all Autonomous Communities, the average female salary is between 25% and 35% lower than the average male salary.

Likewise, interregional inequality can be analysed using Lorenz curves for the annual salary and the corresponding Gini indices (Chart 1) for each Autonomous Community. Graph 7 shows the Lorenz curves for the extreme autonomous communities: Comunidad Foral de Navarra, with a 0.28 index, and Comunidad de Madrid, with a 0.39 value.

Autonomous Communities	
TOTAL	0.34
Andalucía	0.32
Aragón	0.32
Asturias (Principado de)	0.31
Balears	0.32
Canarias	0.33
Cantabria	0.31
Castilla y León	0.33
Castilla La Mancha	0.32
Cataluña	0.33
Comunidad Valenciana	0.31
Extremadura	0.34
Galicia	0.32
Madrid (Comunidad de)	0.39
Murcia (Región de)	0.31
Navarra (Comunidad Foral de)	0.28
País Vasco	0.29
Rioja (La)	0.30
Ceuta y Melilla	0.37

#### Chart 1. Gini Indices by Autonomous Communities





# 3 Wages by branch of activity

Major wage differences appear on analysing the results by economic activity. Graph 8 shows that the economic activity obtaining the maximum average annual salary is Section J of the NCEA-93, Financial intermediation, amounting to 37,321.12 euros per worker a year on average, i.e. 88.5% above the national average. It is followed by Section E, Production and distribution of electricity, gas and water, with 34,414.02 euros (73.8% above the average salary). Conversely, Section H, Hotel and Catering, receives an average annual salary totalling 13,174.63 euros, 33.5% below the average.

Industry, transport services, financial intermediation and health receive salaries above the average wage. Construction, trade, hotel and catering, business services, education and personal services receive lower wages.

As regards wage differences by sex and economic activity, the ranking of activities in each sex is maintained with slight modifications. Thus, Financial intermediation receives the highest salary, both for males and females, and Hotel and Catering receives the lowest wages.

On analysing the wage differences between males and females for each economic activity (Graph 9), the results show that the latter earn a lower salary than the former in all activities. This is partly due to differences as regards occupations, type of contract and type of working day.

Section M, Education, stands out as the least discriminatory activity. There is greater divergence between male and female wages in Section K, Professional services.





#### 4 Wages and occupation

The occupation variable has a significant bearing on the wage level. A substantial wage difference appears when comparing the salary received by Group A, Management of companies with over 10 workers, and other occupations (the former is 176 % above the average salary).

As regards, other occupations, those connected to different university degrees (groups D and E) are far above average. Wages earned by support technicians (group F) are also above average, as are the salaries earned by skilled workers in the fields of extractive industries, metallurgy and the construction of machinery (group N), although the latter are only slightly above average. The rest of the occupations receive average salaries below the national mean, with the lowest going to non-qualified workers in the fields of agriculture, fishing, construction, industry and transport (group T) and services (group S).



Charts that present the average salary alongside certain percentages referring to occupations describe wage differences in great detail. In group A, Business management, the average salary amounts to 54,649 euros; furthermore 10% of this group receive over 91,864 euros. Conversely, the average salary for Industry and Construction Labourers, group T, only amounts to 12,351.65 euros, and the 10% of best paid workers receive over 17,409.61 euros.

The previous pattern also appears in distinctions by occupation and sex. Occupations receiving the highest salaries are the same for males and females (groups A, D, E and F) and in the same order. Occupations receiving the lowest salaries also coincide, although whilst among males the lowest annual salary refers to non-skilled workers in the fields of agriculture, fishing, construction, industry and transport (group T); among females it corresponds to non-qualified workers in the services sector (group S).

As occurred with the different economic activities, in terms of occupations, females always receive a lower salary than males, with group N, skilled workers in the fields of extractive industries, metallurgy and construction of machinery presenting the least difference and group S, non-qualified workers in the services sector, presenting the greatest. In terms of the latter occupation, the wage difference amounts to over 35 points between males and females. This derives from the fact that there are more females than males working part-time.

The main occupation groups are still very heterogeneous internally. Therefore, in order to undertake a more accurate analysis of the wage discrimination, the classification of occupations should be analysed in-depth alongside other variables such as the type of working day and contract.



A very important characteristic that affects the occupation, and has been included for the first time in this survey, is knowing whether the worker does or does not have responsibilities or has to supervise tasks carried out by other workers, and how this influences their salaries. Graph 12 shows how, in each occupation, having responsibilities leads to a wage increase compared to the average salary for said occupation, whilst not having these tasks implies a lower wage.



# 5 Wages and types of working day

The type of working day is, unquestionably, the variable that determines the wage level. The gross figures in graph 13 correspond to annual salaries for workers in terms of their working day. This graph shows that the average annual wage level for a part-time working day is over 50% lower than the total average salary for males and females. Nevertheless, although this comparison is valid as regards workers' earnings, it is unreliable on comparing salaries like "cost of workforce" since full-time salaries imply more working hours than part-time jobs. Consequently, the earnings per hour factor becomes a relevant variable.



Before moving on to describe the results obtained by type of working day, it is important to note that only 10.1% of the sample of workers in the scope of research work part-time, with 2.8% of them being males and 7.3% of them being females.

There is a notable concentration of the salaries of part-time workers, as shown in graphs 14 and 15. Graph 14 shows that part-time salaries are more concentrated around the modal value, the peak of the curve and that, furthermore, this value is similar for both sexes. The curve for males presents more irregularities with several peaks, thus emphasising greater wage variability among this group.

About 75% of the part-time employees, either male or female, earned less than  $12,000 \in$  in 2002 (graph 15). Furthermore, the figures for both sexes are quite similar, at least for 50% of males and females with lower salaries.





As regards earnings per hour, in the first place, it is important to note this value has been calculated dividing the monthly wage by the number of hours worked (regular and overtime) in the reference month. This survey considers October 2002 as the reference month, since no extra salaries are paid out during said period. Thus, the resulting earnings per hour are lower than the figure that would be obtained if using yearly data. This method is used because the number of hours worked in the reference month is more precise than the number of hours worked a year (see working hours section in the methodological note).

In addition, given the scarce sample of males working part-time, the results for this group should be interpreted with caution.



It is striking to see that earnings per hour for males in part-time employment is even higher than the wages earned by males working full-time. This surprising result can be explained, partly, by the aforementioned calculation used for earnings per hour and the low sample of males in part-time employment.

Comparing graphs 14 and 18 shows that the peaks of the curve corresponding to earnings per hour per worker are set at closer values –regardless of them being part or full-time– than those corresponding to yearly earnings, i.e. in terms of the cost of workforce, the difference is not as great as it could seem when comparing yearly incomes.



Graph 18 shows that as from 10€ per hour there is a greater percentage of males working part-time with high wages per hour than among the rest of the workers (the curve for males in part-time employment leans further to the right). As a consequence, the average wage per hour is higher for males. These workers have the best paid occupations, primarily managers (Group A), technicians and support professionals (Group F), retail workers and the like (Group K) and skilled workers (Groups N and P).

Indeed, on excluding the 10% of males working part-time with the highest wages, the average earnings per hour for males drops to 7.3€ per hour.



# 6 Wages and type of contract

This survey has taken three types of contracts into consideration: indefinite duration contract, determined duration contracts and work experience contracts, since even though the latter are temporary contracts, they are governed by special characteristics.

As established in the description of this survey, workers with work experience contracts were surveyed in a separate sample, and have been analysed in a different study. Therefore, this analysis only considers the two first types of contracts.

So as to compare workers with indefinite duration contracts and workers with determined duration contracts, adjustments have been made as regards the wages paid to workers who were not in the workplace for the whole year. Said persons have been allocated an annual salary equivalent to the sum they would have earned if they had worked all year in the same conditions.



In general, workers with a determined duration contract receive an average annual salary 40% lower than those with indefinite contracts. As regards sexes, males earn a salary 25% lower or higher than the average annual salary depending on whether they have an indefinite or a determined duration contract. Females receive a salary below the average salary, regardless of the type of contract. In this case, the difference is 12% for indefinite contracts and 44% for determined duration contracts.

It is important to note the equal proportion of males and females per type of contract (73.7% of males and females with an indefinite contract compared to 26.3% in determined duration contracts); i.e. sex does not have a bearing on the type of contract.

Graph 20 shows how salaries earned by workers in a determined duration contract are more concentrated around the modal value than indefinite contracts. The lowest annual wages correspond to females with determined duration contracts.



This fact is more noticeable in graph 21, the curve that is most to the left (less earnings) corresponds to females in determined duration contracts, whilst the curve most to the right corresponds to males in indefinite contracts.

Furthermore, of the 20% of the workers with a lower annual salary, males with determined duration contracts earn higher wages than females who have indefinite contracts. As regards the highest salaries, whilst 25% of the males in indefinite contracts earn an annual salary that exceeds  $30,000 \in$ , only 10.2% of the females with this type of contract earn said sum; as regards determined duration contracts, the figures amount to 3.3% for males and 1.5% for females.



### 7 Wages governed by contracts within employment promotion plans

This variable indicates whether the contract is covered by governmental measures dedicated to fostering employment. These measures can be total or partial exemptions from company payments to the Social Security and/or a subsidy for each contract performed in accordance with the conditions stipulated by said measure.

The survey results show that 14.3% of the workers' contracts receive some kind of benefit from the administration; corresponding to 13.1% of the males and 16.2% of the females.

Depending on the type of measure, only 0.3% of the contracts are covered by both measures, 0.6% of the contracts are subsidised, primarily total or partial reduction of the payments the employer makes to the Social Security (13.4 % of the total number of contracts). No differences appear when considering results by sex and type of measure except for the reduction of Social Security payments, which affect 12.3% of the males compared to 15.2% of the females.



As regards the wage level in terms of whether the contract is or is not within an employment promotion plan, graph 22 shows that the wages with the highest wage level correspond to contracts that are not within said plans. Programmes within some kind of employment promotion measure receive wages below the average annual salary. The lowest salaries go to workers with a subsidised contract, followed by those who receive reductions in Social Security payments. Those that benefit from both employment promotion measures are slightly higher.

### 8 Wages and level of studies

The wage differences between official qualifications are obviously quite relevant. The higher the level, the greater the annual salary. Workers who have no education or have not completed Primary Education receive wages 35% lower than the average salary, whilst university graduates earn annual wages almost 67% above average. As from the second cycle of secondary education or vocational training, wages surpass the average salary. Nevertheless, having completed primary schooling or the first year of secondary education hardly results in major differences as regards wage levels.



As in all previous cases, the difference between males and females is quite noticeable when comparing workers with homogenous qualifications (graph 24). In general, the average wage females receive is over 30% lower than that of males in each level of studies.



Nevertheless, it is striking to see that in the general total, i.e. not considering the level of studies, the difference between sexes is slightly lower, reaching 28.9%. This is due to the composition of female and male population. The number of females with a high level of studies, and thus with the highest salaries, is greater than the number of males. For example, the percentage of females with university education (degree or diploma) amounts to 25%, whilst there is only a 16% of males.



Graphs 25 to 27 illustrate wage distribution according to level of studies obtained, proving the major difference between low and high levels of studies. As regards

males, graph 26 shows that over 50% of the employees with advanced degrees earned over  $30,000 \notin$  gross salary in 2002. Only approximately 4% of the employees with low levels of education surpassed said amount. As regards females, 50% of university graduates earned over 22,000  $\notin$  gross annual salary, whilst hardly 2% of the female workers without education earned more than this sum.



It is interesting to note the similarity between the curves corresponding to primary education and the first cycle of secondary education, since curves practically overlap in the case of males (graph 26). With regard to females, those with university qualifications, either degrees or diplomas, have a similar distribution, at least concerning the 50% who receive the lowest salaries.

It is also worth mentioning that workers with professional qualifications, intermediate (FP I) or advanced (FP II), receive lower salaries than those who have obtained the post-secondary education diploma (Second cycle of secondary education).



#### 9 Wages and age groups

As expected, the following graph shows that there is a positive relation between the age of the workers and their wage level. Although workers do not receive supplements depending on their age, they do receive them according to their seniority, which will be analysed in the following section. Nevertheless, it is important to point out that these two variables interact, since the oldest workers will, generally, also have greater seniority.



Moreover, workers change their jobs over time and, in most cases, do so improving the economic conditions in view of the experience they have gained over the years.

The graph shows that the lines for males and females move further apart when considering the age variable. Wage differences by sexes are greater in terms of the age of the employees.

The curve behaves somewhat erratically when analysing the lowest and the highest ages. The sample is quite small, thus leading to a reduction of the reliability of the resulting statistics.

#### 10 Wages and seniority in the company

In view of the aforementioned section, it seems logical to study how wages are affected by seniority, since there is a salary supplement linked specifically to seniority, yet not only for that reason but also because the experience obtained in the company allows workers to increase their scale of responsibilities and wages. This appears in graph 29.



The figures referred to above regarding the reduction of the number of older workers are even more valid for this variable. The sample decreases gradually in line with the years of seniority, thus the results should be interpreted cautiously as from 30 years seniority.

# 11 Wages and nationalities

An important innovation to this edition of the survey is the introduction of the worker's nationality variable. Only 2.9 % of the sample is foreign, thus results should be considered cautiously especially as regards workers from North America, Asia and Oceania.



Only workers from North America and the European Union receive salaries above average. Workers with other nationalities receive salaries between 25% and 35% lower than average.

The following graph shows the annual wage distribution by nationality and sex. One could say that the most favoured groups are the Spanish workers, males and females, with foreign females receiving the lowest wages.

Slightly over 40% of the Spanish workers earned over 20,000€ in 2002. This percentage amounts to 24.6% for Spanish females, whilst it drops to only 16.8% of the males and 13.2% of the females with a foreign nationality.

Nevertheless, considering higher wages, as from  $50,000 \in$ , there are no notable differences by nationality, although they do appear by sex: whilst the percentage of males with annual wages over  $50,000 \in$  is significant (5% for Spaniards and 4.5% for foreigners), it is practically nonexistent in the case of females, either Spanish or foreign.



#### 12 Composition of monthly wages

The accrued amount is usually received on a monthly basis. Nevertheless, since certain payments do not follow this monthly basis (extraordinary payments), it should not be the only reference used, especially when comparing wage levels.

In this publication, monthly wages have been used to analyse the composition of said salary in terms of wage concepts (base salary, salary supplements). The analysis of the wage difference according to the different variables, as shown in previous sections, has been performed using the annual salary.

The amount and frequency of the so-called "extraordinary payments" varies from one worker to another. The commonest case consists of two extras payments a year, in summer and at Christmas; yet in some fields of activity, workers receive three, four and even six extraordinary bonuses a year, which can respond to different designations, i.e. benefits, agreements, outcomes, etc. On the other hand, certain professions receive "irregular" salaries, since the amount is not known beforehand. This refers to bonuses and commissions on sales, or supplements for night-shifts, weekends, shifts or overtime hours.

The range of salary supplements, or of wage payments in general, is enormous and the survey cannot isolate them all. Therefore, from a statistical point of view, and aiming to make it easier to compare monthly salaries, this survey has established four payment categories:

- The fixed part of the monthly wages: base salary.
- Salary supplements, making a distinction between total supplements, bonuses for nightshifts, working on public holidays and the other supplements that are received monthly but do not amount to a set amount (supplements for the guality and guantity of work performed, productivity incentives, etc.).
- Overtime payments.
- Extraordinary payments received in October.

Another innovation this survey includes is the analysis of the monthly net salary (i.e. amount that results after deducting Social Security payments corresponding to the worker and income tax retentions). The first edition of this survey considered the annual net salary. The goal is to reveal the part of the salary the worker is left with during a normal month.

Graphs 32 to 34 show the composition of the average salary for the total and by sexes for October 2002. The base salary is the main component of the total salary. It amounts to 57.9% for males and 65.4% for females. This difference is related to the salary differences between males and females. In fact, the salary composition generally varies in terms of the wage level. The greater the salary, the greater the salary supplements.

Extraordinary payments have a 5.8% importance for males and 6.2% importance for females. The low relevance of this type of payments is due to having selected October to obtain the monthly salary, since -as aforementioned- no extra payments or vacation periods correspond to said month, thus allowing the consideration of "regular or ordinary" monthly earnings. Nevertheless, major differences appear on analysing this variable by type of activity or occupation.

Overtime payments are the least important in the composition of the salary and do not exceed 3% in any economic activity, except sea and coastal water transport, or in any occupation except workers dedicated to protection and security services.





Differences in terms of the percentage of net salary compared to the gross salary between males and females are justified by the different average salaries for both groups, and the logical effect of the progressive income tax rate on the salary.





### 13 Composition of the annual salary

The composition of the annual salary has been analysed considering the periodicity of payments, with a distinction between monthly periodicity or regular salary and payments received on other time basis or extraordinary payments. The latter have been classed into:

- Fixed extraordinary payments: the amounts and dates of remittance are known beforehand and do not depend on the results obtained by the worker or company.
- Variable extraordinary payments: payments for incentives or results, i.e. payments linked to individual or company results. The sum is not known

beforehand, but depends on the performance, goals obtained, level of production achieved, etc. They may even be optional, in terms of the amount due or the periodicity.

The following graphs show there are no major differences between sexes as regards the percentage structure of the annual salary.



Graph 39. Composition gross annual salary.







#### 14 Other variables

Previously, this survey only analysed variables corresponding to the worker. Nevertheless, there are also other variables that have a bearing on the wages that are connected to the company or workplace where employees perform their activities. The survey analyses four main variables:



**Scope of the collective agreement:** group negotiation also affects the workers' salaries. Graph 42 shows that the highest average wages appear in workplaces that implement business agreements. In this case, even the females' salary is above (albeit only 2%) the global average salary. The most unfavourable agreements are included in the paragraph *Other agreements beyond the company scope*, which encompasses interprovincial, provincial and regional agreements, among others. In this case, even male average salaries are below (4%) the general average salary.



**The destination market for the company's production** also has a positive effect on the salary. Consequently, the greater the market, the greater the wage level. Thus, the average salary is 50% greater if the company's production has a worldwide reach than if it is limited to the local or regional market.



Finally, considering the **company's property or control (public or private)**, publicly controlled companies have higher wage levels and the difference between sexes is lower. However, it is important to note that these results should be considered cautiously, since the sample of public employees is very undersized (10.2%).



#### 15 Work experience contracts

Workers with work experience contracts are considered independently. The sample includes approximately 1,450 workers. Given the small size of the group, results have not been obtained by autonomous communities. Nevertheless, there are no major wage differences, as appears in graphs 45 to 47.

On comparing the average salaries of the apprentices to the rest of the contracts, the former are 64.4% lower than the latter, linked to the Minimum Interprofessional Wage, which was set at 6,190.8 € for 2002.

Graph 45 shows wage differences by **branches of activity**. In subsection DF, petroleum refinement and nuclear fuels, the sample is not sufficient to obtain acceptable results. The same occurs in some activities when considered by activities and sex; thus in subsection DB, Textile and clothing industry, there is a shortage of males, and in subsections DD, Wood and cork industries, DG, Chemical industry, DJ, Metallurgy, DK, Construction of machinery, DM, Manufacture of transport equipment, F, Construction, and I, Transport and communications, there is a shortage of female apprentices.

Apprentices appear in very few sectors, mainly in trade (Section G) and Hotel and Catering (Section H). As shown in the graph, apprentices who receive the lowest salaries appear in activities DE, Paper industry and publishing; K, Business services; M, Education; N, Health, and O, Personal services. The activities that receive the highest wages appear in section DH, Rubber and plastic materials transformation industry; DI, Other non-metallic ore products industries; DL, Electrical, electronic and optical material and equipment industry, and H, Hotel and Catering.



Considering the **occupations** performed by the apprentices, this type of contract is not envisaged in the occupations that receive the highest salaries: A, Business management; D, Professions associated with 2nd and 3rd cycle university degrees and the like; E, Professions associated with a 1st cycle university degrees and the like. Neither are there enough female workers to consider results in occupations M, Skilled construction workers, and N, Skilled workers in the field of extractive industries, metallurgy, construction of machinery and the like.



The level of studies is also a relevant variable when considering work experience contracts. There are no males with university education and work experience contracts or females with Advanced vocational training studies with this type of contracts.

Considering wage levels, persons who have no education or have not completed studies have a similar level to those with a higher level of studies (university education); those who have followed intermediate vocational training receive higher salaries.

