TRABAJO DE FIN DE GRADO

Do the companies that treat the employees better achieve a competitive advantage?

Autor: Dª. Fátima Losilla Galera

Tutor: D. Javier Martínez del Río

Grado en Administración y Dirección de Empresas

Table of contents

ABSTRACT

Motivation theory explains that motivated employees work better and have a better performance and a bigger productivity than those employees who are not properly motivated or do not have a proper treatment from their employers. This increase in performance and productivity is thought to cause an increase in the economic results of their company.

The objective of this paper is to find the existing relationship between employee motivation and economic results of the most representative companies in the Spanish economy and quantify it, by contrasting their treatment to employees and their profits. It also will try to present the reasons explaining why motivated employees offer an advantage to companies and which are the most effective motivation factors used by the studied organizations.

RESUMEN DEL CONTENIDO

La teoría de la motivación explica que los empleados motivados trabajan mejor y tienen un mejor rendimiento y una mayor productividad que aquellos empleados que no están correctamente motivados o no reciben un trato apropiado por parte de la empresa. Este incremento en el rendimiento y la productividad se piensa que causa una mejora en el resultado económico de la empresa.

El objetivo de este trabajo es encontrar la relación existente entre la motivación de los empleados y el resultado económico de las empresas más representativas de la economía española y cuantificarla, contrastando el tratamiento que reciben sus empleados con los beneficios que obtienen. También se tratará de explicar las razones por las que los empleados motivados representan una ventaja para las empresas y cuáles son los factores de motivación más efectivos usados por estas compañías.

INTRODUCTION

As explained in the summary, it is thought that there is a positive and direct relationship between a good treatment of employees from companies with their economic results.

The main objective of this paper is to find out if that relationship actually exists. This objective will be achieved by the study of some important organizations in our country. This study is based on a research made by the Spanish economic magazine *Actualidad Económica* which is carried out on a yearly basis. The research studies who the best employers are in Spain and which companies treat their employees better.

The paper will contrast the punctuation in the ranking of the research with the economic results obtained by the studied companies in the year the research was carried out and the following years to achieve the goal of finding the named relationship.

The content of this paper is developed in chapters. The first one will treat about employee motivation, and the existing ways to motivate workers. The second one will explain the methodology used to develop the study of the relation between motivation and profits in Spanish companies. The third chapter discloses the found linear models for this data and their validity parameters (t-student parameters, p-values and R^2 value).

Due to the fact that this is a bilingual paper, the abstract was presented in both Spanish and English, and so will be the conclusions of this study. The chapters and the rest of the contents of the paper are developed only and exclusively in English.

CHAPTER 1. EMPLOYEE MOTIVATION

Motivation theory tells us that treating employees better make them feel motivated and valued by the company, and contributes to create a good working atmosphere, which causes a good mood among workers, thus they are more comfortable working in the organization. People prefer to work in a company in which they are going to be properly treated and their work is going to be valued.

A company that treats their employees in a good manner is seen as a good employer. It is easier for good employers to retain qualified personnel, which may be a key for a good performance in some sectors of activities in our economy. It also makes it easier for them to recruit future workers, due to the fact that a known good employer will receive more applicants to job positions than other companies with bad reputation in this sense.

Furthermore, a good working atmosphere makes employees work in a better mood, which has a great effect on their performance. A properly motivated employee will work faster and better than one that does not feel valued by the company or is not comfortable at his or her position. Consequence is a raise in workers' productivity, which is supposed to provoke an increase in the economic result of the company as it also increases the overall productivity of the organization.

A third reason to improve the treatment to employees is the good image and reputation the organization receives from the general public and the stakeholders. This does not favor only the attraction and retention of employees. Consumers prefer to buy products from companies known as good employers and which have a good image and reputation. Thus, a good employer with a good reputation and image in this issue will attract and retain more costumers, and it will be easier for it to raise loyalty among its consumers.

Robbins and Coulter (2009) defined motivation as "the process by which a person's efforts are energized, directed, and sustained toward attaining a goal". The manners companies can use to motivate people are called motivators or motivation factors, and can be classified in two categories: monetary and non-monetary motivators. Monetary motivators are easier to be applied than non-monetary motivators, but the lasts are thought to offer a more long-lasting motivation effect. Truth is that the effect of each motivation factor depends on every worker and their personal characteristics and on the application every company does on every motivator.

1. **Monetary motivators**

Monetary motivators are a way of motivating employees by remuneration or compensation. As Gómez-Mejía and Sánchez Marín (2006) tell us, remuneration is one of the most important aspects of a job for individuals. This is due to three important reasons:

- Economic power. Remuneration is the base of the buying capacity of the employee and his or her family.
- Sociological power. Remuneration has a great effect on the social status of the employee in the community and is a symbol of his or her social position.
- Psychological power. Remuneration is related to the feeling of personal value, and higher remuneration can increase self-esteem and self-realization.

These three aspects can influence the behavior as members of the organizations of employees and so can improve or deteriorate performance and productivity (Gómez-Mejía and Sánchez Marín, 2006).

There are several types of monetary motivators, such as the salary of the worker, pay-for-performance programs or stock options programs.

- Salary

The first one is the salary, which is the amount of money received regularly in exchange of the work done in the company. Employees feel more valued by their employers if they receive a proper salary, because they see their work is appreciated by the company, as remuneration is an essential element in the relationship between organization and employee (Gómez-Mejía and Sánchez Marín, 2006).

- Pay-for-performance programs

Pay-for-performance pay employees a variable compensation based on their work. The performance measures used for evaluating the compensation may be the productivity of every worker, a team or work group, a department or the overall organization. The forms of compensation used by companies include wage incentive plans, profit-sharing or bonuses received when goals are achieved.

This second option is very popular and probably the most effective one, because workers see a direct and clear link between their performance and their compensation (Robbins and Coulter, 2009).

- Stock options programs

The last one is the use of stock options programs. Employees who own stock options have the right to purchase shares of stock at a set price. The objective of the use of these financial instruments as a manner of compensation is to turn employees into owners, and so they receive a better compensation if the company success. This make them feel more motivated to work hard, again, showing a link between performance and payment. Although it seems as an effective motivator, a variety of countries has restricted its use because of some scandals on CEO compensation when their companies' performance was not enough to justify the reward (Robbins and Coulter, 2009).

2. **Non-monetary motivators**

Non-monetary motivators are an alternative way of motivating employees that does not include the use of money or financial instruments. This category of motivators includes recognition, open-book management, training and talent management, Corporate Social Responsibility, working atmosphere and conditions and setting goals to employees.

- Recognition

The main form of this type of motivation is recognition of the work done. Employees feel better working for a company that express appreciation for a job well done. They feel their contribution to the activity of the organization is valued and appreciated, and they are reinforced to continue working hard to achieve the recognition. Most employees consider recognition as the most effective motivator in the workplace, even more effective than monetary motivators. This type of motivation factor does not have to come only from managers: recognition among workmates is also a way to reinforce good performance and helps to create a good working atmosphere (Robbins and Coulter, 2009), which will be explained later on.

- Open-book management

Open-book management allows employees to think as the owners of the organization do, by opening up the financial statements. With this approach, employees can see the impact of their decisions on the economic result of the company, and so they can make better decisions in their workplace and understand the consequences of their work (Robbins and Coulter, 2009).

- Training and talent management

Relating to training and talent management, employees feel appreciated by companies if they receive extra training in the workplace or facilities to keep learning and developing skills out of job. The most valued forms of training by employees are specifically designed Master programs or financing languages courses (García Aller, 2006). Talent management refers to making use of the abilities and skills of employees. Companies that take an advantage on employees' talent try to match properly their skills to their job position. Workers' are more comfortable while developing an activity they are good at it, and this fact is reflected in their performance.

Furthermore, employees prefer to work on a company that trains them because it increases their employability, meaning that it will be easier for them to get a promotion, a better job or a new job in case of unemployment if they have received extra training. They see their value as a person, not only as a company asset, raised with training.

There are several ways of training employees. The most used way of training in organizations is skill training, which is used to improve key skills in job positions to cover the deficit of employee abilities. Creativity training is also important in companies with high levels of innovation and creativity. Teamwork training, multi-functional training and training for crisis situations, among other examples, are other ways to improve workers abilities that are used in companies (Gómez-Mejía *et al.,* 2005).

- Corporate Social Responsibility

Corporate Social Responsibility is also seen as a motivator, because employees enjoy working in a company that treats its stakeholders in a good manner. They appreciate also to be involved in the social activities carried out by the organization, as they feel part of the project and the community.

- Working atmosphere

Working atmosphere is made up of the mood of the combination of all employees, and this is determined by the working conditions of workers. These conditions vary from work hours to the tasks employees have to carry out. Motivating employees using this motivator can be done by offering flexibility to employees in their work hours, giving them the choice of adopting a compressed workweek or telecommuting, to name but a few. Another

way to improve working conditions is to develop job sharing, which Robbins and Coulter (2009) defined as "the practice of having two or more people split a full-time job".

- Set goals

Setting goals to employees can help motivate them by challenging them to achieve the objectives. This can only work with some conditions. First one is that goals have to be challenging, but also employees have to perceive them as attainable. If goals are not seen as attainable, employees could think it is not worth the effort of even trying, because they are not going to achieve them. Another condition is that workers have to receive a feedback to see their progress. Depending on the culture of the company, goals can be set by the management, or employees can participate in the goal setting process. This option can be more effective than the first one if the culture of the organization has a high level of resistance to goals (Robbins and Coulter, 2009).

CHAPTER 2. DEVELOPMENT OF THE STUDY

1. <u>Data gathering</u>

Every year, the economic magazine *Actualidad económica* conducts a research called *"Las mejores empresas para trabajar"*. This research consists on making an interview to the most representative companies in the country to find out which one is the best employer, and shows a list with the best places to work in Spain. The interview is made up with 63 questions classified six different categories, summing up a total of 1,000 points:

- Talent management (190 points).
- Remuneration and compensation (210 points).
- Working atmosphere (210 points).
- Corporate Social Responsibility (50 points).
- Training (250 points).
- Employees (90 points).

As it can be seen, training is seen as the most important category, followed by working atmosphere, and remuneration and compensation. The total punctuation of every company in this ranking can be seen as the efforts each organization makes to improve employee motivation, classified by categories of motivators. The motivation factors used in this classification does not include the whole range of factors explained in the previous chapter, but is the list of the most used motivators among Spanish companies.

Since 2009, the rates of scale of the motivation factors were changed by the magazine, and each category received the following punctuation:

- Talent management (220 points).
- Remuneration and compensation (220 points).
- Working atmosphere (215 points).
- Corporate Social Responsibility (55 points).
- Training (220 points).
- Employees (70 points).

Since that year, talent management, remuneration and compensation, and training had the same importance in this ranking, followed by the working atmosphere.

The interview is answered by the Human Resources department, except for the last category, which is answered by the most senior employee, the most recently hired one and an employee who has been in the company between two and five years. The magazine

publishes the ranking showing a table in which the companies are classified using the results they obtained in every category and their total punctuation.

The study of this paper uses the results obtained by *Actualidad económica* to find out if the companies that treat their employees better obtain a better economic result due to the motivation of their employees. To conduct this study, the data of a total of 598 organizations, taking their economic results and their punctuations in the ranking from 2006 to 2010 to make a regression study and see if there is a relationship between them. Appendix 1 shows the best 20 employers by each category of motivators in the whole period of this study.

To avoid bias in the study, the economic result taken into the regression is not the corresponding to the year of the interview, but an average of the profits of that year and the ones of next two years. This fact also tries to corroborate if motivation has a long-lasting effect in the company's profits.

Companies in the study have been classified by sector of activity. The following graph shows the industries taken to classify the companies and the distribution of companies that are included in each category.

Graph 1.1 Distribution of companies by sector of activity

- Chemical and Pharmaceutical Engineering
- Construction and Real State Industry
- Consultancy and Accounting
- Financial Services
- Food and Drinks Industry
- Information Technology and Telecommunicatiosn
- Infrastructure and Energy
- Manufacture and Trade
- Other Services
- Tourism
- Transport and Logistics
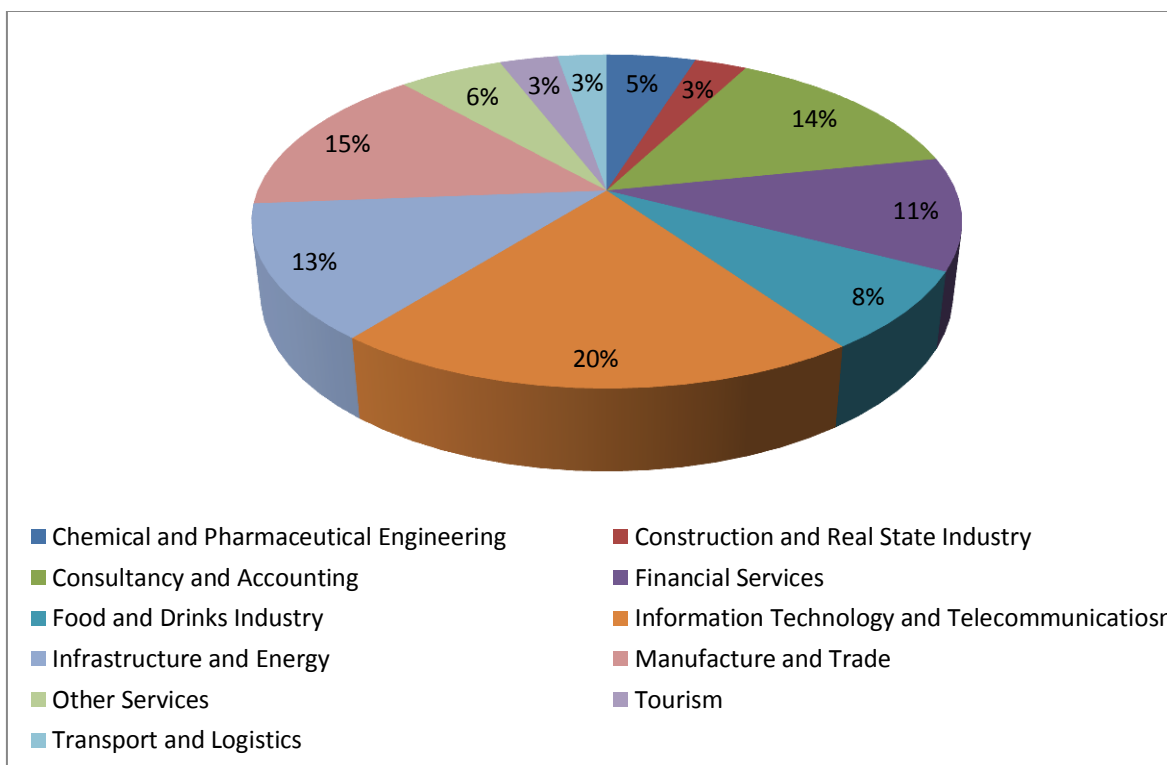
Source: *Actualidad económica* (Self-elaboration)

Most of the companies in the population sample belong to the information and technology sector (20%), while the least populated sectors are tourism, transport and logistics and construction and real estate industry (3%).

Companies have also been classified by size, using the number of employees as the factor of classification:

- Microenterprise: companies with 10 or less employees.
- Small enterprise: organizations with 11 to 50 employees.
- Medium-sized enterprise: firms with 51 to 250 employees.
- Big enterprise: companies with more than 251 employees.

The size of the companies is used as a control variable in the study, to avoid a simple bias: the bigger the company, the greater the profits it can obtain. The effect of motivation could not be seen in smaller companies because their economic results are also smaller. The distribution of companies by size is represented in the Graph 2.2:

Graph 1.2 Distribution of companies by size
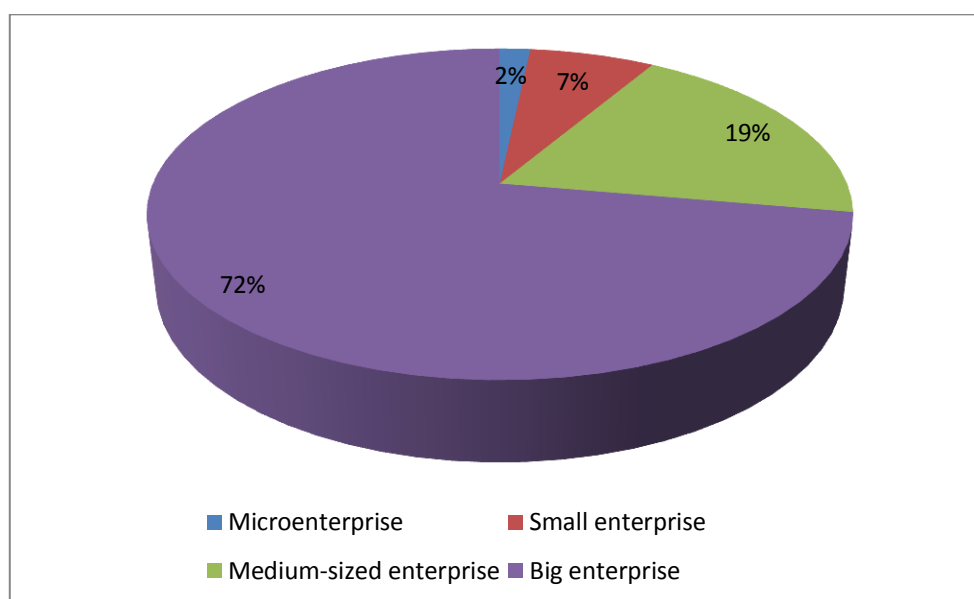
Source: *Actualidad económica* (Self-elaboration)

The majority of the companies (72%) in the study have more than 251 employees in their workforce. Only the 2% of the companies in consideration have 1 to 10 employees and are classified as microenterprises. This reflects the fact that companies prefer to grow to achieve more and better competitive advantages and economies of scale and scope.

2. <u>**Steps of the process**</u>

To achieve its main goal, the development of this study has been carried out in the following manner. First, a database with the punctuations of organizations and their average results has been made up. In this database has also been included the information about the size of the companies and the sector of activity they belong.

Once this database was elaborated, it was imported to the statistical program IBM SPSS Statistics 22, in order to analyze the content with the linear regression technique this program offers. There have been made 16 different regressions in this step, whose characteristics and results will be exposed and explained in the next chapter of this paper.

The last step of this study is checking the validity of every model, and evaluating if the relationship between the efforts of improving motivation and appearing in the named ranking, and the increase in economic results of organizations really exists and can be quantified. This checking will be done by performing a significant linear relationship test, analyzing the t-student parameters and p-values of the variables in the models. Besides, the R^2 value of every regression will be taken into account too, to corroborate the consistence of the findings.

CHAPTER 3. ESTIMATION OF THE MODELS

This chapter will disclose the found linear models to study the relationship between appearing in the ranking and showing great efforts to motivate employees, and the profits obtained as a result.

The first section of this chapter will serve as an explanation on how each variable of the model was defined, to provide a better understanding of how the models were elaborated. The second section will show the linear model of the joint data, including all of the variables: punctuation, size and sector of activity. The next section will display the linear models obtained by size of the companies, thus a linear model per size. The last section will disclose the linear models found by sector of activity, so a linear model per industry.

1. <u>Explaining the variables</u>

A simple linear model shows the following structure:

$$y = \beta_0 + \beta_1 \cdot x \qquad \textbf{Equation 3.1}$$

where:

- y = Dependent variable.
- x = Independent variable.
- β_0 and β_1 regression coefficients.

The dependent variable in this study is the average profit of the companies being studied, but there is not a unique independent variable, so the models in this paper are multivariate, not simple. Besides the punctuation obtained in the research of *Actualidad económica*, there have been added some others attribute variables as independent to the model.

The dependent variable "Average profit" (y) has been set as a string variable, with a nominal measure in the IBM SPSS Statistics 22 program. The rest of the variables, which are explained later on, are set as numerical variables. The "Punctuation" (x_1) variable was assigned a scale measure, while the rest of them were assigned an ordinal measure.

The first attribute variable is "Size" (x_2). This variable incorporates the size of each organization to the model. The "Size" variable can take four values:

- Value "1" for microenterprises.
- Value "2" for small enterprises.
- Value "3" for medium-sized enterprises.
- Value "4" for big enterprises.

Besides the variables described, there are also another 11 more attributes variables, which are the ones integrating the industry of the companies into the models. The following table shows the resting attribute variables:

Table 3.1 Attributes variables incorporating the industry

x_n	Description
x_3	Chemical and pharmaceutical engineering
x_4	Construction and real estate industry
x_5	Consultancy and accounting
x_6	Financial services
x_7	Food and drinks industry
x_8	Information technology and telecommunications
x_9	Infrastructure and energy
x_{10}	Manufacture and trade
x_{11}	Other services
x_{12}	Tourism
x_{13}	Transport and logistics

Source: *Actualidad económica* (Self-elaboration)

These attribute variables can take only two values: "1" if the company belongs to the particular industry, or "0" if the organization does not belong to it.

Taking into account the variables explained, the linear models of this paper studying the named relationship, will have the following structure:

$$y = \beta_0 + \beta_1 \cdot x_1 + \beta_2 \cdot x_2 + \beta_3 \cdot x_3 + \beta_4 \cdot x_4 + \beta_5 \cdot x_5 + \beta_6 \cdot x_6 + \beta_7 \cdot x_7 + \beta_8 \cdot x_8 + \beta_9 \cdot x_9 + \beta_{10} \cdot x_{10} + \beta_{11} \cdot x_{11} + \beta_{12} \cdot x_{12} + \beta_{13} \cdot x_{13}$$

Equation 3.2

The validity of every model will be checked at the end of each section, contrasting the values of the t-student parameters and the p-values of every coefficient and the R^2 values of the models.

There are two special cases in sections 2 and 3. As there are many attribute variables in these models, the program used to perform the regression analysis will take one of them as a reference, and that variable will be excluded from the model. In section 4, as the only attribute variable in the model will be "Size", and the attributes of activity will be taken as a selector, there will not be any excluded variable.

2. Joint linear model

The joint linear model will show the relationship taking into account all the variables explained above, with their coefficients. In this case, the reference variable set by IBM SPSS Statistics 22 is "Information technology and telecommunications". This variable will not be included in the model, so there will not be a value for x_8 in Equation 3.3. Table will display the value of the β_i coefficients for this joint linear model, and the parameters used to check its validity (t-student parameter and p-value).

Table 3.2 Joint linear model

Variable	Coefficient	t-student	p-value
Constant	-40,220,632.8	-0.451	0.652
x_1	23,985.91	0.265	0.791
x_2	13,113,783.32	0.767	0.443
x_3	3,740,916.266	0.067	0.947
x_4	5,706,069.395	0.08	0.937
x_5	-12,323,192.5	-0.318	0.751
x_6	61,996,030.01	1.489	1.37
x_7	32,798,553.55	0.702	0.483
x_9	241,082,343.8	6.156	0
x_{10}	-73,129,868.3	-1.938	0.053
x_{11}	-2,226,400.818	-0.042	0.966
x_{12}	-36,225,452.3	-0.54	0.589
x_{13}	-21,427,681	-0.295	0.768

Source: Result from SPSS Statistics 22 (Self-elaboration)

The following equation shows the joint linear model incorporating all the attribute variables, except the reference one:

$$y = -40,220,632.8 + 23,985.91x_1 + 13,113,783.32x_2 + 3,740,916.266x_3 + 5,706,069.395x_4$$
$$- 12,323,192.5x_5 + 61,996,030.01x_6 + 32,798,553.55x_7 + 241,082,343.8x_9 - 73,129,868.3x_{10}$$
$$- 2,226,400.818x_{11} - 36,225,452.3x_{12} - 21,427,681x_{13} \qquad \textbf{Equation 3.3}$$

This means that, for example, a company with a punctuation of 790 points, with more than 251 employees, and operating in the "Consultancy and accounting" sector, would obtain €18,860,176.88 as an average economic result for three years. This is calculated taken the constant, "790" as x_1, "4" as x_2, "1" as x_5 and "0" as the rest of the variables. This is an

example of how the models can be used to predict the profits of companies with a given punctuation.

The model will be correct and valid if the p-value of every coefficient is smaller than the set confidence level ($\alpha = 0.05$), or if the t-student parameter is larger than 4.96.

In this case, only the t-student parameter and p-value for one variable have the enough level to prove that the model is correct, and they are the parameters for x_9, "Infrastructure and energy". But this is not enough to prove that the entire model is correct: the rest of the parameters let us see that this model is not properly formulated and its validity is inconsistent.

This fact can be also corroborated by analyzing the R^2 value of this regression. A good relationship is established when it R^2 value is above 0.8. In this model, IBM SPSS Statistics 22 gives a value of 0.104. Thus, this is not a good relationship or adjustment.

3. <u>Linear models by size</u>

This section will disclose four linear models, one for each of the sizes an organization can have.

The t-student parameters and the p-values will be evaluated all together in the last part of the section, with the R^2 value.

3.1. Microenterprises

Table 3.3 displays the coefficients, t-student parameters and p-values given the assumption that $x_2 = 1$, thus companies are microenterprises. As there are different sample populations for each category of sizes, some variables are not available in some of the models. For example, for the microenterprise size, the only attribute variables that can be applied are "Construction and real estate industry", "Consultancy and accounting", "Financial services" and "Infrastructure and energy", as they are the only industries in which microenterprises of the sample operate.

In this model, the reference variable taken by the program is "Construction and real estate industry", so x4 will not appear in the model.

Table 3.3 Coefficients, t-student parameters and p-value for microenterprises

Variable	Coefficient	t-student	p-value
Constant	-88,454,274.1	-0.256	0.811
x_1	171,765.777	0.265	0.804
x_5	2,906,939.656	0.021	0.984

Variable	Coefficient	t-student	p-value
x_6	14,604,740.03	0.080	0.940
x_9	233,501,573.8	1.212	0.292

The linear model for microenterprises has the following structure:

$$y = -88,454,274.1 + 171,765.777x_1 + 2,906,939.65x_5 + 14,604,740.0\ x_6 + 233,501,573.8x_9$$

Equation 3.4

3.2. Small enterprises

The following table (3.4) will disclose the related data to small enterprises. For small enterprises, there are no companies in the industries of "Food and drinks industry", "Tourism" and "Transport and logistics". Besides, the reference value is "Consultancy and accounting". Thus, x_5, x_7, x_{12} and x_{13} do not have a spot in this model.

Table 3.4 Coefficients, t-student parameters and p-value for small enterprises

Variable	Coefficient	t-student	p-value
Constant	41,186,352.43	0.582	0.564
x_1	-35,375.791	-0.357	0.724
x_3	-20,999,719.9	-0.344	0.733
x_4	-17,907,255	-0.403	0.69
x_6	49,732,779.17	1.943	0.061
x_8	-17,852,149.3	-0.527	0.602
x_9	-15,923,531.3	-0.463	0.647
x_{10}	9,062,594.796	0.288	0.775
x_{11}	-17,815,656.5	-0.57	0.573

The linear model for small enterprises is shown in Equation 3.5:

$$y = 41,186,352.43 - 35,375.791x_1 - 20,999,719.9x_3 - 17,907,255x_4 + 49,732,779.17x_6 - 17,852,149.3x_8 - 15,923,531.3x_9 + 9,062,594.796x_{10} + 17,815,656.5x_{11}$$

Equation 3.5

3.3. Medium-sized enterprises

The coefficients, t-student parameters and p-values for medium-sized enterprises are shown in Table 3.5. For medium-sized enterprises, the reference variable is also

"Consultancy and accounting". In this case, all the industries are represented in the population.

Table 3.5 Coefficients, t-student parameters and p-value for medium-sized enterprises

Variable	Coefficient	t-student	p-value
Constant	-27,985,720.2	-0.334	0.739
x_1	44,902.163	0.38	0.705
x_3	-778,075.528	-0.009	0.993
x_4	24,083,484.19	0.417	0.678
x_6	74,445,782.21	-391	0.167
x_7	10,114,624.17	0.182	0.856
x_8	1,247,217.695	0.031	0.975
x_9	249,847,091.3	4.864	0
x_{10}	5,015,701.552	0.09	0.928
x_{11}	10,631,904.04	0.145	0.885
x_{12}	3,044,050.895	0.029	0.977
x_{13}	3,459,453.793	0.053	0.958

Source: Result from SPSS Statistics 22 (Self-elaboration)

These coefficients give as a result, the following linear model:

$$y = - 27,985,720.2 + 44,902.163x_1 - 778,075.528x_3 + 24,083,484.19x_4 + 74,445,782.21x_6 +$$
$$10,114,624.17x_7 + 1,247,217.695x_8 + 249,847,091.3x_9 + 5,015,701.552x_{10} +$$
$$10,631,904.04x_{11} + 3,044,050.895x_{12} + 3,459,453.793x_{13} \qquad \textbf{Equation 3.6}$$

3.4. Big enterprises

In this case, every industry is also represented in the population of big enterprises. For this model, the reference variable is "Information technology and telecommunications". The following table shows the coefficients, t-student and p-values parameters for big enterprises:

Table 3.6 Coefficients, t-student parameters and p-value for big enterprises

Variable	Coefficient	t-student	p-value
Constant	15,520,572.86	0.176	0.861
x_1	24,533.879	0.203	0.839

x_3	2,233,524.85	0.032	0.974
x_4	-12,181,536.2	-0.077	0.938
x_5	-22,675,201.7	-0.404	0.686
x_6	59,071,585.3	1.047	0.296
x_7	37,593,375.23	0.624	0.533
x_9	252,075,585.6	4.911	0
x_{10}	-91,231,487.6	-1.896	0.059
x_{11}	-4,795,496.977	-0.068	0.946
x_{12}	-42,532,151.3	-0.519	0.604
x_{13}	-30,855,547.6	-0.295	0.768

Source: Result from SPSS Statistics 22 (Self-elaboration)

The linear model resulting from these coefficients is the following one:

$$y = 15,520,572.86 + 24,533.879x_1 + 2,233,524.85x_3 - 12,181,536.2x_4 - 22,675,201.7x_5 + 59,071,585.3x_6 + 37,593,375.23x_7 + 252,075,585.6x_9 - 91,231,487.6x_{10} - 4,795,496.977x_{11} - 42,532,151.3x_{12} - 30,855,547.6x_{13}$$ **Equation 3.7**

3.5. Checking the models

Here the regression test is performed for the models by size of the companies. As it could be seen in the tables of this section (Tables 3.3, 3.4, 3.5 and 3.6), the p-values and t-student parameters for all the variables are too high and too low, respectively, and so neither of these models is valid.

There are two exceptions in the tables: the value x_9 for medium-sized enterprises and big enterprises has a 0 as p-value, and this is less than the set significance level. This exception of x_9 is not enough to make the model valid, so as in the first case, the relationship between the efforts of the company to motivate employees and their profits does not exist among this population.

To corroborate that this conclusion is consistent, the R^2 value for the models is analyzed. These values are disclosed in the following table:

Table 3.7 R^2 values for the linear models by size

Assumption	R^2 value
$X_2 = 1$	0.62
$X_2 = 2$	0.207
$X_2 = 3$	0.227

$X_2 = 4$	0.101

This table confirms the conclusion found with the regression tests: all these R^2 values are too slow to demonstrate that the model is valid.

4. **Linear models by activity**

This section will display eleven different linear models, one for each of the industries in the study. As it was done for the sizes, there will be shown a table with the coefficients, t-student parameters and p-value for the activities and the linear models will be formulated. As it was did with the models for each size assumption, the p-value and t-student parameters will be evaluated with the R^2 value in the last part of this section.

4.1. **Chemical and pharmaceutical engineering**

The following table discloses the coefficients, t-student parameters and p-value for the constant, and punctuation and size variables to this particular industry.

Table 3.8 Coefficients, t-student parameters and p-value for Chemical and pharmaceutical engineering

Variable	Coefficient	t-student	P-value
Constant	-31,592,758.7	-0.758	0.455
x_1	-50,404.495	-1.180	0.249
x_2	25,345,235.90	2.778	0.010

The linear model for this sector of activity is the following one:

$$y = - 31,592,758.7 - 50,404.495x_1 + 25,345,235.90x_2 \qquad \textbf{Equation 3.8}$$

4.2. **Construction and real estate industry**

Table 3.8 shows the coefficients, t-student parameters and p-value for the constant, and punctuation and size variables for this sector of activity.

Table 3.9 Coefficients, t-student parameters and p-value for Construction and real estate industry

Variable	Coefficient	t-student	P-value
Constant	-23,789,577.3	-0.202	0.843
x_1	33,978.795	0.184	0.857
x_2	6,955,092.169	0.292	0.775

The linear model for this sector of activity is displayed in Equation 3.9:

$$y = -23,789,577.3 + 33,978.795x_1 + 6,955,092.169x_2 \qquad \textbf{Equation 3.9}$$

4.3. Consultancy and accounting

The coefficients of the variables, the t-student parameters and the p-value can be seen in Table 3.10:

Table 3.10 Coefficients, t-student parameters and p-value for Consultancy and accounting

Variable	Coefficient	t-student	p-value
Constant	-2,479,991.346	-0.227	0.821
x_1	14,337.744	1.063	0.291
x_2	222,464.684	0.100	0.920

Source: Self-elaboration Source: Result from SPSS Statistics 22 (Self-elaboration)

The relationship in study for the consultancy and accounting sector is shown in the following equation:

$$y = -2,479,991.346 + 14,337.744x_1 + 222,464.684x_2 \qquad \textbf{Equation 3.10}$$

4.4. Financial services

In the following table, there are disclosed the coefficients, t-student parameters and significance level for the industry of financial services.

Table 3.11 Coefficients, t-student parameters and p-value for Financial services

Variable	Coefficient	t-student	P-value
Constant	132,273,276.4	0.642	0.523
x_1	-151,647.208	-0.630	0.531
x_2	16,183,786.96	0.466	0.643

Source: Result from SPSS Statistics 22 (Self-elaboration)

Equation 3.11 shows the linear model for the financial services sector:

$$y = 132,273,276.4 - 151,647.208x_1 + 16,183,786.96x_2 \qquad \textbf{Equation 3.11}$$

4.5. Food and drinks industry

Table 3.12 shows the values needed to formulate the linear model for the activities of food and drinks industry.

Table 3.12 Coefficients, t-student parameters and p-value for Food and drinks industry

Variable	Coefficient	t-student	P-value
Constant	17,965,327.4	0.082	0.935
x_1	-161,381.479	-1.129	0.265
x_2	37,887,305.37	0.835	0.408

Source: Result from SPSS Statistics 22 (Self-elaboration)

The linear model resulting from this data is formulated in the equation below:

$$y = 17,965,327.4 - 161,381.479x_1 + 37,887,305.37x_2 \qquad \textbf{Equation 3.12}$$

4.6. Information technology and telecommunications

The related data to the industry of information technology and telecommunications is exposed in Table 3.13.

Table 3.13 Coefficients, t-student parameters and p-value for Information technology and telecommunications

Variable	Coefficient	t-student	p-value
Constant	-126,080,416	-0.958	0.340
x_1	108,833.833	0.878	0.382
x_2	20,940,054.92	0.692	0.490

Source: Result from SPSS Statistics 22 (Self-elaboration)

This data will give as a result the following linear model:

$$y = -126,080,416 + 108,833.833x_1 + 20,940,054.92x_2 \qquad \textbf{Equation 3.13}$$

4.7. Infrastructure and energy

The following table discloses the needed information to formulate the model for the sector of infrastructure and energy:

Table 3.14 Coefficients, t-student parameters and p-value for Infrastructure and energy

Variable	Coefficient	t-student	p-value
Constant	-325,071,847	-0.913	0.364
x_1	562,406.677	1.482	0.143
x_2	61,783,042.50	1.023	0.310

Source: Result from SPSS Statistics 22 (Self-elaboration)

Information in the table above reflected in the equation 3.14 as the linear model for these activities:

$$y = -325{,}071{,}847 + 562{,}406.677x_1 + 37{,}887{,}305.37 + 61{,}783{,}042.50x_2 \quad \textbf{Equation 3.14}$$

4.8. Manufacture and trade

The linear model for the manufacture and trade industry is formulated with the information displayed in Table 3.15, and it is shown in Equation 3.15.

Table 3.15 Coefficients, t-student parameters and p-value for Manufacture and trade

Variable	Coefficient	t-student	p-value
Constant	242455682.8	0.517	0.606
x_1	-175449.362	-0.411	0.682
x_2	-46176602.3	-0.446	0.657

Source: Result from SPSS Statistics 22 (Self-elaboration)

$$y = 242455682.8 - 175449.362x_1 + 46176602.3x_2 \quad \textbf{Equation 3.15}$$

4.9. Other services

The following table shows the coefficients, t-student parameters and p-values for the population of other services. This category includes several activities whose industries were too small to be a category by themselves.

Table 3.16 Coefficients, t-student parameters and p-value for Food and drinks industry

Variable	Coefficient	t-student	p-value
Constant	-24,989,962.1	-0.375	0.710
x_1	-13,420.732	-0.179	0.859
x_2	14,662,681.97	1.124	0.270

Source: Result from SPSS Statistics 22 (Self-elaboration)

Equation 3.16 presents the linear model resulting from the data of Table 3.16:

$$y = -24{,}989{,}962.1 - 13{,}420.732x_1 + 14{,}662{,}681.97x_2 \quad \textbf{Equation 3.16}$$

4.10. Tourism

The information for the tourism sector is exposed in Table 3.17.

Table 3.17 Coefficients, t-student parameters and p-value for Tourism

Variable	Coefficient	t-student	p-value

Constant	25,716,174.08	0.121	0.905
x_1	16,093.379	0.072	0.943
x_2	-11,940,439.9	-2.21	0.828

<center>Source: Result from SPSS Statistics 22 (Self-elaboration)</center>

The linear model resulting from this data is formulated in the equation below:

$$y = 25{,}716{,}174.08 + 16{,}093.379x_1 - 11{,}940{,}439.9x_2 \qquad \textbf{Equation 3.17}$$

4.11.   Transport and logistics

Transport and logistics is the last sector of activity being analyzed in this study. Table 3.18 shows its coefficients, t-student parameters and p-value.

<center>**Table 3.18 Coefficients, t-student parameters and p-value for Transport and logistics**</center>

Variable	Coefficient	t-student	p-value
Constant	118,196,548.1	1.396	0.186
x_1	-141,144.425	-1.698	0.113
x_2	-12,039,373.2	-0.731	0.478

<center>Source: Result from SPSS Statistics 22 (Self-elaboration)</center>

Equation 3.18 presents the last linear model formulated in this paper, and that is the following one:

$$y = -11{,}940{,}439.9 - 141{,}144.425x_1 - 12{,}039{,}373.2x_2 \qquad \textbf{Equation 3.18}$$

4.12.   Checking the models

In this last part of the section, the eleven linear models by sectors of activity are checked, and their validity is evaluated.

As in the other cases, the relationship being studied does not exist in the population sample. All the p-values and t-student parameters, except one again, are bigger and smaller than the confidence level ($\alpha = 0.05$) and the value for t-student (4.96). In this case, the exception is the p-value for x_2 in Table 3.6, in the industry of chemical and pharmaceutical engineering.

The R^2 values are going to be analyzed in this section too. For this purpose, Table 3.19 has been elaborated:

Table 3.19 R^2 values for the linear models by activity

Assumption	R^2 value
$x_3 = 1$	0.239
$x_4 = 1$	0.012
$x_5 = 1$	0.015
$x_6 = 1$	0.010
$x_7 = 1$	0.062
$x_8 = 1$	0.012
$x_9 = 1$	0.037
$x_{10} = 1$	0.005
$x_{11} = 1$	0.040
$x_{12} = 1$	0.003
$X_{13} = 1$	0.059

Source: Result from SPSS Statistics 22 (Self-elaboration)

In this case, the R^2 values are in general even lower than the ones of the models by size, so this conclusion is also true and consistent.

To conclude with this third chapter, it must be said that the relationship between appearing on the ranking made by *Actualidad económica* as the best employers in Spain and having a great economic result is not clear and does not exist for the population sample studied. There have been formulated 16 different models – a joint model, four models by size and eleven models by activity – to try to prove this fact, but it was not possible to quantify the relationship.

CONCLUSIONS

After everything that has been displayed and explained in this paper, the conclusions of the study with the use of the technique of linear regression are the only thing that is left to be exposed. There have been formulated 16 different models – a joint model, four models to analyze the relationship by size and eleven models to analyze the relationship by activities. Once these models have been formulated, the parameters used to prove their validity have been showed and explained.

The conclusions obtained in this study are that there has not been found a clear statistical relationship between appearing on the lists of *Actualidad económica* as one of the best employer and the increase in the economic results of companies, neither on a joint manner, nor by size, nor by activity. This would come to prove that there is not a relationship between the efforts of companies to motivate employees and treating them in a proper manner and the increase of their performance and productivity.

There is an important fact to take into account while studying these conclusions, and that is that this study and its population sample was carried out in Spain, which is a country with a high unemployment rate in the later years and a deep economic crisis which companies has suffered. Perhaps this study would have come with a different result if it would have been developed in a country with a more dynamic labor market and a different economic framework.

Now, the implications of these conclusions to management will be explained, and later on there will be exposed the limitations this study suffered while it was being developed that could explain why these conclusions have been found.

- Implications to management

These conclusions have several implications for the practice of management. As there is not a clear relationship between employee motivation and the economic result of the company, it cannot be confirmed that increasing the expenses in employee motivation is a profitable investment. A different study with certain cases that have not been included in this one – companies with high levels of innovation and creativity, for example – should be conducted to corroborate the findings.

A possible open question to solve would be if it is important to invest in motivation for companies to which knowledge and human capital are a key resource to achieve a competitive advantage, because it could totally change the focus or the characteristics of the sample population and could bring other findings. For other companies, whose key

resources are different, it could be not so important to increase the expense in motivation to raise employee performance.

Another implication to take into account is that the different motivation factors have different effects, because of their own characteristics and the idiosyncrasy of every worker. The needs of all of the employees are not always the same, and due to that fact the several motivators do not have the same effect on them. Perhaps managers should evaluate every decision on human capital investment in an isolated way to maximize its result and achieve a better competitive advantage in each case.

- Limitations

This study has suffered from some limitations while it was being developed. The first one of these limitations is the result obtained in the regression technique. The t-student parameters and p-values are not enough to prove that the formulated models are valid and consistent. The R^2 values are always too low as well, but this is a common fact when the topic is a social science.

This limitation could be explained by the lack of data, meaning that, although 598 companies have been considered, there may have not been enough to carry out this study properly. For microenterprises, the population size was only 10 organizations; this could be set as an example for this lack of data.

The second limitation comes from the fact that, in general, all of the companies that appear in these lists and ranking give a good and proper treatment to their employees. This means that although they get so different results in their punctuation, the variability between the treatment to employees of one or another is very low. That is, there is not a company that treats its workers really good and another that treats them really bad, but an average good treatment is given in all of them.

This explains the lack of a possible statistical relationship between the ranking result and the profits of the organizations in the sample population of this study.

CONCLUSIONES

Después de todo lo expuesto y explicado en este trabajo, solo queda por exponer las conclusiones obtenidas con el uso de la técnica de regresión lineal. Se han formulado 16 modelos distintos – uno de manera agregada, cuatro para analizar la relación por tamaño y once para analizar la relación por actividad. Una vez se han formulado, se han expuesto los parámetros usados para comprobar y verificar su validez.

Las conclusiones obtenidas en este estudio son que, ni de manera agregada, ni por tamaño, ni por actividad, existe una relación estadística clara entre aparecer en las listas de la revista *Actualidad económica* como una de las mejores empresas para trabajar y un incremento en el resultado económico de las empresas. Esto vendría a mostrar que no hay relación entre el esfuerzo de las empresas por motivar y tratar bien a los empleados y el incremento de su rendimiento.

Un hecho a tener en cuenta mientras se estudien estas conclusiones es que la muestra del estudio se ha tomado en España, un país conocido por su alto índice de desempleo en los últimos años y la profunda crisis económica que han sufrido sus empresas. Quizá en otro país con un mercado laboral más dinámico y otro tipo de marco económico se habrían alcanzado otras conclusiones.

Seguidamente, se explicarán las implicaciones que estas conclusiones tienen para la práctica de la dirección y la gestión. Después, se enumerarán algunas limitaciones que este estudio ha sufrido mientras ha sido desarrollado, que podrían explicar por qué se ha llegado a estas conclusiones.

- Implicaciones para la dirección

Estas conclusiones tienen ciertas implicaciones para la práctica de la dirección y la gestión. Al no encontrarse una relación clara entre la motivación de los empleados y el resultado económico de la empresa, no se puede afirmar que sea una inversión rentable el aumentar el gasto en motivación de los empleados. Habría que realizar otro estudio para otro tipo de casos no incluidos en éste – empresas con alta innovación o creatividad, por ejemplo – para confirmar que la relación es inexistente.

Una posible pregunta abierta que quedaría también por resolver sería si es importante invertir en motivación para aquellas empresas para las cuales el conocimiento o el capital humano son un recurso clave, pues cambiaría totalmente el enfoque o las características de la población de la muestra del estudio y podría arrojar otras conclusiones. Para otras empresas, cuyos recursos clave a la hora de obtener una ventaja competitiva son distintos, podría no ser tan importante el aumentar el gasto en motivación para aumentar el rendimiento de los empleados.

Otra implicación a tener en cuenta es que los factores de motivación tienen distintos efectos, por sus propias características y también por la idiosincrasia de cada trabajador. Las necesidades de todos los empleados no son siempre las mismas, y por ello los distintos motivadores no tienen por qué tener el mismo efecto en ellos. Quizá los directivos deberían

evaluar aisladamente cada decisión de inversión en capital humano y motivación para maximizar su resultado y obtener la máxima ventaja en cada caso.

- Limitaciones

Este estudio ha sufrido varias limitaciones mientras se desarrollaba. La primera ha sido el resultado obtenido con la técnica de la regresión lineal. Los parámetros *t-student* y de significancia no fueron lo suficientemente altos ni bajos, respectivamente, para probar que los modelos formulados fuesen válidos ni consistentes. Los valores R^2 son también siempre demasiado bajos, pero éste es un hecho normal cuando se trata con ciencias sociales.

Esta primera limitación podría explicarse por la falta de datos. Aunque se haya tratado con 598 empresas, puede que no hayan sido suficientes para desarrollar correctamente este estudio. Para las microempresas, la población de la muestra fue solamente de 10 casos; éste podría ser un buen ejemplo de esa falta de datos.

La segunda limitación viene por el hecho de que, en general, todas las compañías que aparecen en estas listas dan un buen tratamiento a sus empleados. Esto significa que aunque tienen resultados tan distintos en sus puntuaciones del *ranking*, la variabilidad en el trato que dan a los trabajadores es muy baja. Esto es, no hay empresas que traten muy bien a los empleados y otras que los traten muy mal, sino que los empleados reciben un buen tratamiento en general.

Esto explica la falta de una posible relación estadística entre el resultado del *ranking* y los beneficios obtenidos por las organizaciones de la población de este estudio.

BIBLIOGRAPHY

Robbins, S.P. & Coulter, M. (2009). Motivating employees. In K. Norbuta (Ed.), Management (pp. 356-386). New Jersey, NJ: Pearson Education.

Gómez-Mejía, L. & Sánchez Marín, G. (2006). Introducción: la retribución en las organizaciones. In D. Fayerman (Ed.), La retribución y los resultados de la organización (pp. 3-26). Madrid, España: Prentice Hall.

Gómez Mejía, L. *et al.* (2005). Formación de los trabajadores. In A. Cañizal (Ed.), Gestión de los recursos humanos (pp. 297-337). Madrid, España: Pearson Prentice Hall.

García Aller, M. (2006). La mejor empresa para trabajar. *Actualidad económica*.

García Aller, M. (2007). Las mejores empresas para trabajar. *Actualidad económica.*

García Aller, M. (2008). Las mejores empresas más deseadas. *Actualidad económica.*

García Aller, M. (2009). Las mejores empresas para trabajar. *Actualidad económica.*

García Aller, M. (2010). Las mejores empresas para trabajar. *Actualidad económica.*

APPENDIX

Appendix 1. Best 20 employers sorted by categories of motivators

Table A1.1 Best 20 employers in talent management

	Company	Punctuation	Year
1	Coca-Cola España	220	2010
2	USP Hospitales	220	2010
3	Teléfonica	215	2010
4	Arbora & Ausonia	215	2010
5	KPMG	215	2010
6	Medtronic Ibérica	215	2010
7	Santander	215	2009
8	Sanitas	210	2010
9	McDonald's	210	2010
10	Everis	210	2010
11	Capgemini	210	2010
12	Henkel Ibérica	210	2009
13	Banesto	210	2009
14	Banesto	205	2010
15	Kimberly-Clark	205	2010
16	Roche Farma	205	2010
17	Santander	205	2010
18	Inditex	205	2010
19	Consum	205	2010
20	Thales España	205	2009

Source: *Actualidad Económica* (Self-elaboration)

Table A1.2 Best 20 employers in remuneration and compensation

	Company	Punctuation	Year
1	Alcatel Lucent	210	2010
2	Kimberly-Clark	205	2010
3	Telefónica	200	2009
4	La Caixa	200	2009
5	Barclays B. Zaragoza	200	2009
6	Roche Farma	200	2007
7	Philips Iberica	195	2010
8	BAT	195	2010
9	Kimberly-Clark	195	2009
10	Mars	195	2009
11	BBVA	195	2007
12	Cisco Systems	195	2007
13	Sanitas	190	2010
14	Banesto	190	2010
15	Thales España	190	2010
16	Crédito y Caución	190	2010
17	Sap España	190	2010
18	Du Pont Ibérica	190	2010
19	Banesto	190	2009
20	Philips Ibérica	190	2009

Source: *Actualidad Económica* (Self-elaboration)

Table A1.3 Best 20 employers in working atmosphere

	Company	Punctuation	Year
1	Banco Santander	220,5	2008
2	Kimberly-Clark	217	2007
3	Banesto	210	2010
4	Santander	210	2009
5	Roche	210	2009
6	Havas Media	208	2008
7	Marsh España	205	2010
8	PricewaterhouseCoopers	205	2010
9	Roche Farma	205	2008
10	Roche Farma	200	2010
11	Santander	199	2010
12	BBVA	198	2007
13	Teléfonica	195	2010
14	LG	195	2010
15	Orange	195	2010
16	BBVA	195	2010
17	Kimberly-Clark	195	2009
18	Arbora & Ausonia	195	2009
19	Sun Microsystems	195	2009
20	Watson Wyatt	195	2008

Source: *Actualidad Económica* (Self-elaboration)

Table A1.4 Best 20 employers in Corporate Social Responsibility

	Company	Punctuation	Year
1	Kimberly-Clark	55	2009
2	Telefónica	55	2009
3	Caixa Galicia	55	2009
4	Fujitsu	55	2009
5	Stricks Ibérica	55	2009
6	Orange	55	2009
7	CAM	55	2009
8	Avon Cosmetics	55	2009
9	Sol Meliá	55	2009
10	Orange	50	2010
11	BBVA	50	2010
12	Diageo	50	2010
13	Altran	50	2010
14	Caixa Galicia	50	2010
15	Accenture	50	2010
16	NH Hoteles	50	2010
17	Abertis Infraestructura	50	2010
18	Endesa	50	2010
19	Indra	50	2010
20	Bovis Lend Lease	50	2010

Source: *Actualidad Económica* (Self-elaboration)

	Table A1.5 Best 20 employers in training					**Table A1.6 Best 20 employers in employees' valuation**		
	Company	**Punctuation**	**Year**			**Company**	**Punctuation**	**Year**
1	General Electric	235	2008		1	Banco Santander	90	2008
2	Coca-Cola	235	2008		2	Daikin	90	2008
3	KPMG	230	2006		3	Ernst & Young	89	2008
4	PricewaterhouseCoopers	230	2007		4	Caixa Galicia	89	2008
5	Garrigues	230	2007		5	MBMA	89	2008
6	Banco Santander	230	2008		6	BBVA	88	2008
7	Banesto	230	2008		7	Kimberly-Clark	88	2008
8	Accenture	230	2008		8	Lafarge Asland	87	2007
9	Nortel Networks	230	2008		9	Coca-Cola	87	2008
10	Kimberly-Clark	225	2007		10	Bankinter	87	2008
11	Coca-Cola	225	2007		11	Caixanova	87	2008
12	Roche Farma	225	2008		12	Caixa Galicia	86	2007
13	PricewaterhouseCoopers	225	2008		13	Mercadona	86	2007
14	Unión Fenosa	225	2008		14	Cisco	86	2008
15	Banco Popular	220	2007		15	Pfizer	86	2008
16	EMC	220	2007		16	Banco Popular	85	2007
17	Garrigues Abog. Ase.	220	2009		17	EMC	85	2007
18	Garrigues Abog. As.	220	2010		18	Roche Farma	85	2007
19	Vodafone	215	2007		19	Caja Madrid	85	2007
20	Banco Sabadell	215	2007		20	DKV	85	2007

Source: *Actualidad Económica* (Self-elaboration)   Source: *Actualidad Económica* (Self-elaboration)