HIGHER EDUCATION DECENTRALIZATION AND NATIONAL CONVERGENCE: ARE THEY COMPATIBLE? THE CASE OF SPAIN

Galán-Muros, V., Del Barrio-García, S., Luque-Martínez, T.

University of Granada (SPAIN)
vgm@ugr.es, dbarrio@ugr.es, tluque@ugr.es

Abstract

During the XXI century, the Bologna Process has aimed the creation of the European Higher Education Area. For that purpose, a series of reforms have been carried out to make European higher education more competitive, compatible and comparable. Those circumstances have commonly required comparisons among national indicators of higher education systems in order to choose the best applicable policies and to check their progress.

Spain is a country where education policies and competences are highly decentralized. This means that the governments of the seventeen community regions have a high influence in their own universities. The existence of very diverse education policies and programmes suggest that the indicators for the universities and their progress of each region could differ from the rest of them.

The purpose of this study is two-fold. On the one hand, to explore and try to explain the evolution over some years of certain relevant indicators related to human, material and financial resources in Spanish public HEIs in the different regions, using linear graphs for clearer and instant representations. On the other hand, to highlight the statistically significant differences among regions, making use of the Kruskal-Wallis test within the SPSS software package.

The main findings of this study suggest that the starting values of each region together with their rate of progress in these years have been very diverse due to miscellaneous regional policies. However, most regions in Spain follow the same general trend, which is specified in an increase in incomes, expenses and human resources per student. This trend is similar to the one generally in the European Union following the principles set by the Bologna Process.

Consequently, although certain degree of convergence can be deducted, there are still many significant differences regarding important indicators. This fact entails that, in the case of the higher education in Spain, the use of the national mean of each indicator as a measurement of all national universities is an unrepresentative figure and implies a notable loss in the information and biased comparisons.

Moreover, the uniqueness of this study involves important implications for managers in each university, for managers in the regional government and for European policy makers. For all of them, a cautious interpretation of statistics is suggested along with an understanding of regional differences. Finally, this study also set the question of the extent to which the current economic and financial crisis is going to affect both the resources and the management of the universities differently in each Spanish region.

Keywords: Higher Education, Spain, Indicators, Regions, Differences, Convergence.

1 INTRODUCTION

1.1 The European higher education area

In 1999, the Italian city of Bologna witnessed the signing of a declaration which would radically change the higher education arena in twenty-nine European countries. From that moment on, the Ministers of Educations have extended and specified this declaration in further biannual meetings; including new signatory countries. Currently, the Bologna Process involves 46 participating countries, the 27 countries in the European Union plus nineteen members of the UNESCO, forming the European Higher Education Area (EHEA) [1].

The general purposes of the Bologna Plan entail a standardisation of academic degrees and education systems, an increase in students and staff mobility, promotion of the European higher education attractiveness, the encouragement for partnerships and cooperation, research and

knowledge based activities together with lifelong learning, thus improving the quality and the academic results of higher education across the EHEA [2].

These objectives have been formalised into a number of concrete action lines in order to make academic degree standards and quality assurance standards more competitive, compatible and comparable throughout the forty-six countries. Consequently, several national indicators of higher education, such as those related to financial issues, academic matters and human resources are frequently compared to control their progress of in each country and the grade of convergence among all countries in the EHEA [3].

Specifically, some of the most evaluated indicators in higher education at the international level and that police makers and managers in HEIs need to monitor and work in are those related to the expenses per student. They are highly conditioned by the incomes and in the EHEA they tend to increase in order to provide students with better services and facilities [4]. Moreover, the Bologna Process also highlights the importance of an individualized education, involving a lower student/academic staff ratio. Finally, there is an emphasis in academic results, which are expected to improve with students achieving better education and qualifications [5].

1.2   The Spanish public higher education system

The fact is that in international comparisons each national higher education system is normally represented by a unique national indicator as a measure of the higher education outlook in that country. This statement takes for granted that the prioritization in the application of the Bologna Process' objectives, the speed of the convergence process and the effectiveness of the reforms are the same in the whole country [6]. However, not only countries differ in those cited aspects, but regions within each country may also count with diverse indicators. This reality is more probable in countries where higher education competences are highly decentralised.

The Spanish public higher education system follows a highly decentralized pattern. Most educational competences are controlled by the governments of the seventeen autonomous regions, which are responsible for the administration its region, creation and authorization of institutions, staff management, development of academic programming, guidance for students, grants and subsidiaries [7]. Although all universities must comply with the exigencies of the Bologna plan, the fact is that each regional government count with diverse resources and set different priorities and strategies designing its own education policies and programmes. This fact suggests that the indicators for the universities and their progress in each region could differ from each other.

Traditionally, the Spanish higher education system, as well as the rest of the public sector, has lacked from an established management culture, which is still in an early stage of development. However, there is a current trend in public policy called *new public management*, which calls for efficacy and an efficiency in public management, measuring outputs in the public activity through a series of comparable indicators [8]. Nowadays, higher education institutions (HEIs) must carry out imperative reforms in order to achieve the objectives suggested by the Bologna Plan; what truly highlights the importance of management in public HEIs [9]. The question is whether such decentralization in higher education affects the values of the indicators for the different regions.

2   OBJECTIVE

The purpose of this study is two-fold. On the one hand, it aims to explore the progress over several years of certain relevant indicators related to financial resources, human resources and academic results in Spanish public HEIs in the main regions, using linear graphs for clearer and instant representations. They show if the direction of the progress is compatible with the guidelines proposed by the Bologna Process and they also illustrate the grade of convergence or divergence among those regions. On the other hand, this study tests if the region of origin constitutes a significant variable for differentiating the indicators studied in each period of time.

3   DATA AND RESEARCH METHODOLOGY

This study makes use of secondary data from the biannual publication *La Universidad Española en Cifras* (The Spanish University Statistics) published by The Conference of Spanish Universities' Chancellors (CRUE). It includes a wide range of financial, human resources and academic data, both inputs and outputs and several representative indicators have been chosen to be analysed. These data are available for the forty-seven Spanish public HEIs*,* located in the existent seventeen regions;

however, only the eight regions that have at least two public HEIs within its territory have been considered for this study.

This article consists of two differentiated studies which are applied over the same indicators of higher education. One of them works with the regional mean values of each indicator and makes use of linear graphs in order to represent its development over several periods of certain pertinent indicators related to financial, human resources and academic results in Spanish public HEIs. Showing the starting value, the development and the end value for each region, the main trends and the grade of convergence or divergence can be evaluated.

The other part includes the evaluation and comparison of the mean values of all regions in each period in order to check if their differences are significant. This is achieved adding a new variable to the secondary data called *region* to identify the origin of each HEI and making use of the Kruskal-Wallis test within the SPSS, the most used statistical software package in the area of the social sciences. Specifically, the Kruskal-Wallis tests the null hypothesis of equality of population medians among groups. This is a non-parametric test, performing on ranked data, assuming identically-shaped and scaled distribution for each group although it does not have any normality assumptions [10].

4 RESULTS

4.1 Financial results

4.1.1. Incomes

Current transfers made by regional governments represent the main source of incomes, while tuition fees are a secondary source but whose value is fixed by regional governments. Fig. 1 and Fig. 2 show a rising general trend in both incomes variables, although the rate of increase of current transfers is more homogeneous. Both patterns are coherent with the Bologna plan, which calls for a higher investment in education and the need of more resources [11]. However, their development is divergent in both cases, which means that each regional government applies different strategies or put a diverse emphasis in these aspects. Finally, it must be underlined that regional differences in governmental transfers are higher and significant for all periods, while regional differences in tuition fees are lower and only significant in the last three periods (see Table 1), implying that the null hypothesis stating that all medians are equal cannot be accepted in those periods.

Figure 1: Current transfers from the regional government per student (in euros)
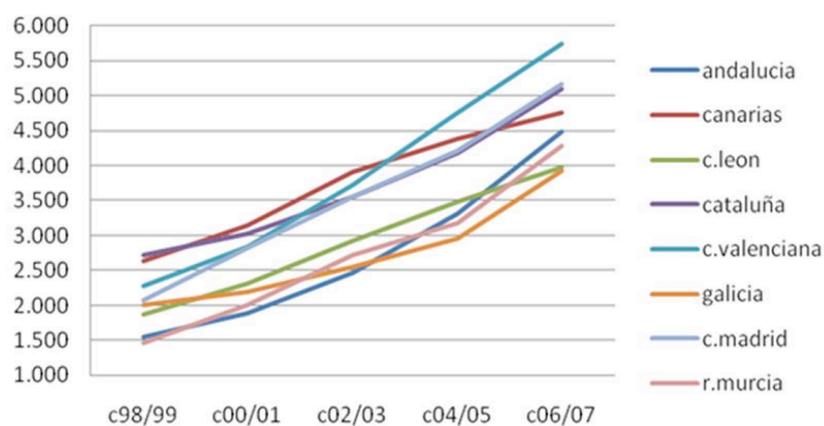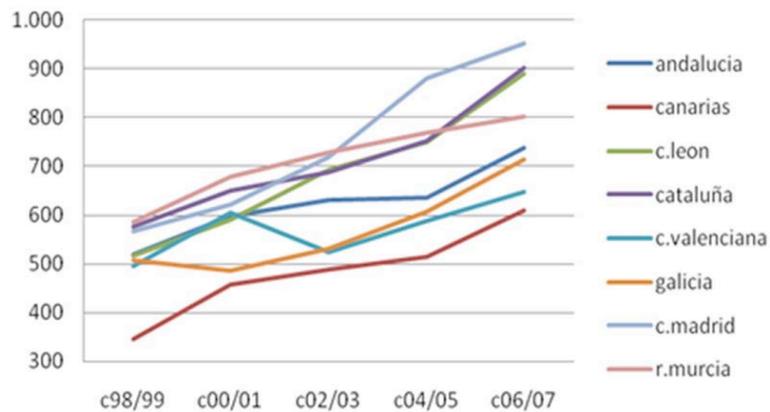
Figure 2: Tuition fees per student (in euros)

4.1.2. Expenses

The two elected indicators which represent expenses in HEIs are staff expenses per student, counting for an average of 52% of the total expenses [12] and current expenses in goods and services per student; both having a similar path. Those variables are increasing for all regions in all periods with a similar rate of growth. These progresses are consistent with the principles of the Bologna process, which bank on attracting the best staff and improve the number and the features of facilities and resources in order to provide students with a higher-quality service [13].

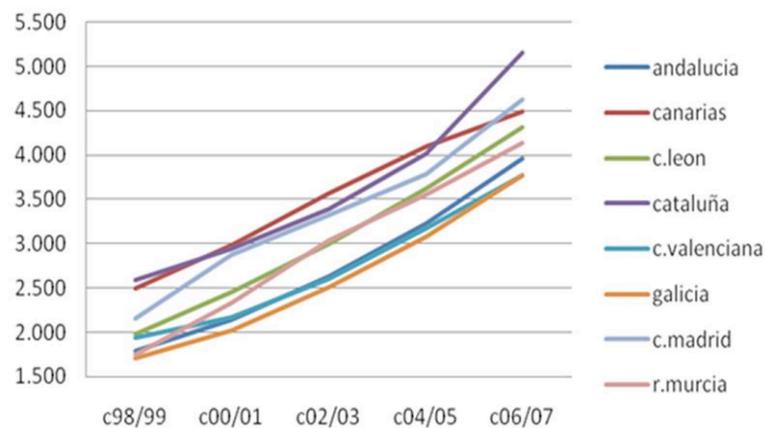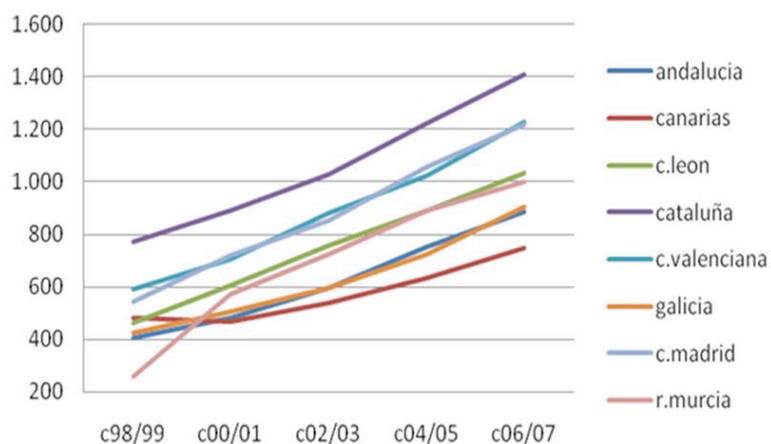Figure 3: Staff expenses per student (in euros)

Figure 4: Current expenses in goods and services per student (in euros)

For the variable staff expenses per student, regional differences are significant in all but the first period, which is associated with a slightly divergent model (see Table 1) causing a more heterogeneous current scenario. Contrary, for the variable expenses in goods and services per student, regional differentiation is significant for all periods (see Table 1) and the data convergence or divergence is not clear. These data is partially conditioned by the amount of money that each region invests in higher education [14].

4.2 Human Resources' results

Human Resources indicators are essential in HEIs. The Bologna plan emphasizes the need of more personalized education together with high-quality service; both facilitated through a reduced students-staff ratio [3]. Therefore, the two indicators, students per academic staff and students per non-academic staff, follow a general decreasing trend consistent with the principle of the Bologna plan. Moreover, they show a slightly convergent pattern, resulting in a more homogeneous scenario for the whole country.

Nevertheless, the Kruskall-Wallis test shows that the most important indicator, students per academic staff, significantly differs from some regions to others during all evaluated periods (see Table 1), not accepting the null hypothesis which states that all regions have the same distribution. Additionally, the analysis for the indicator students per non-academic staff points out that only in two of the four periods differences are significant (see Table 1).

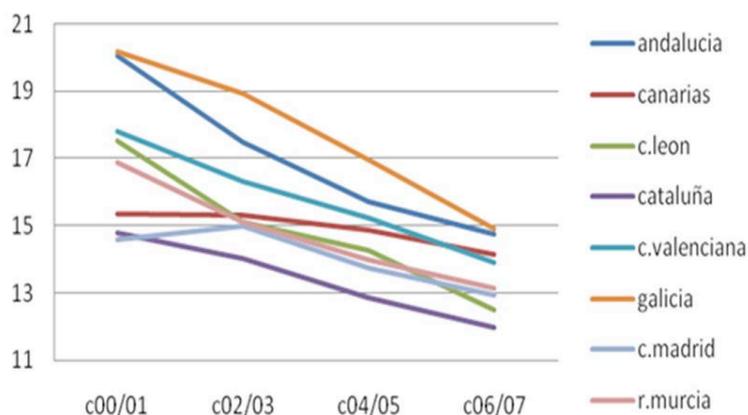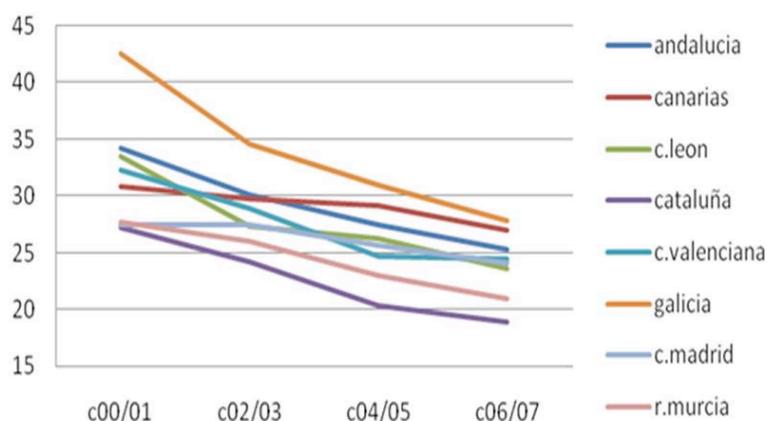Fig 5: Number of students per academic staff

Figure 6: Number of students per non-academic staff

4.3 Academic results

Finally, the outputs in HEIs, academic results, are examined considering the most representative academic outputs, the rate of withdrawal and the rate of performance. According to the Bologna Process, these academic results must improve as a result of inputs improvements [2]; however, this study shows that the path they follow differs from the expected one.

Generally, the rate of withdrawal is an increasing variable, although it decreases in the middle period to sharply rise in the last one. The only period in which regional differences are considered significant is the middle one, according to the Kruskal-Wallis test (see Table 1), suggesting an irregular although slightly convergent pattern. Regarding the rate of performance, it presents a very different path with a non-defined trend and significant regional differences for all of the three academic years (see Table 1). This entails that the null hypothesis declaring that all medians are equal cannot be accepted.

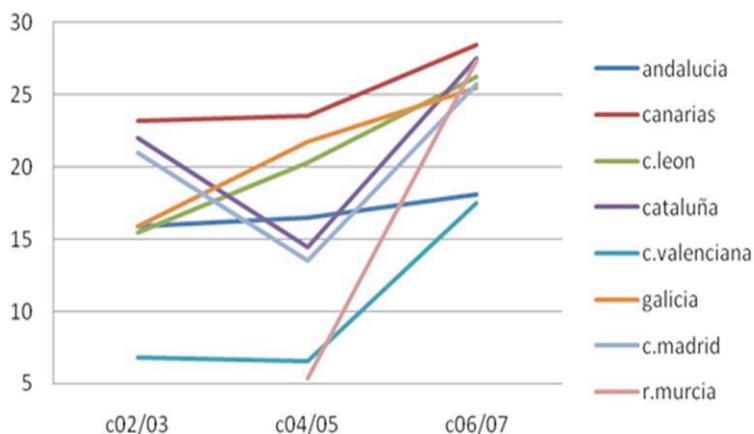Fig 7: Rate of withdrawal (percentage)
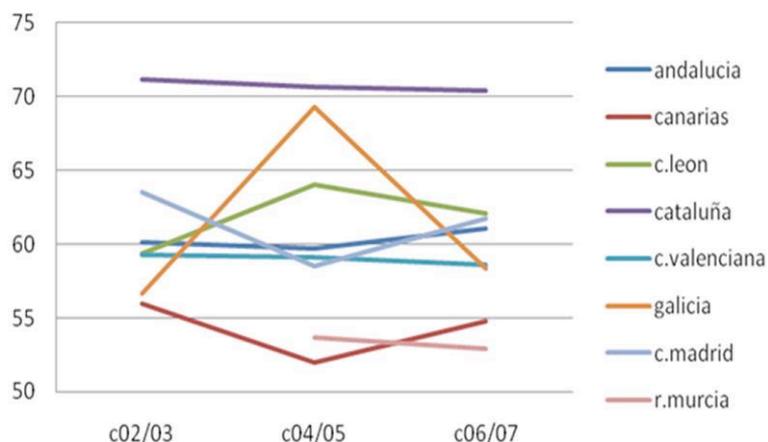

Fig 8: Rate of performance (percentage)

Table 1: Significance of the variables for all periods

Variable/P-value	98/99	00/01	02/03	04/05	06/07
Current transfers	0.004**	0.000**	0.000**	0.001**	0.001**
Tuition Fees	0.086	0.070	0.003**	0.001**	0.001**
Expenses in goods and services	0.009**	0.005**	0.017*	0.029*	0.021*
Staff expenses	0.081	0.007**	0.014*	0.027*	0.011*
Students per academic staff	---	0.004**	0.023*	0.007**	0.017*
Students per non-academic staff	---	0.039*	0.218	0.025*	0.103
Rate of withdrawal	---	---	0.178	0.017*	0.193
Rate of performance	---	---	0.015*	0.010**	0.003**

*means significant variable at 5% level of significance and ** means significant variable at 1% level of significance.

5 CONCLUSIONS

Concerning the general trend, it must be highlight that all input indicators, consisting in incomes, expenses and human resources, are coherent with the guidelines proposed by the Bologna plan. Nonetheless, the two indicators for the output do not go in the suggested direction. That means that generally, regional governments and HEIs are applying the appropriate strategies and programmes, however, they are not achieving the expected results, suggestive of certain inefficiencies in processes. Moreover, there can be other factors not considered in this study affecting those outputs.

Regarding the convergence or divergence and the significance of regional differences each type of indicator follows a different path. Firstly, the regional starting values of financial input variables were quite dissimilar but their divergent progress has resulted in even more unlikely values. The Kruskal-Wallis test indicates that regional differences are significant in almost all periods, especially in the last ones. This fact indicates that regional programmes and strategies, although pointing in the same direction, are applied with diverse economic emphasis and results. To avoid divergent progress, it is advisable higher degree of coordination between education departments in regional governments and the ministry of education in the central government.

Secondly, both human resources input variables present a slightly convergent pattern, with a current regional student-staff ratio more similar than years ago, although large differentiation is still appreciated. According to the Kruskal-Willis test, differences are significant for all periods in students per academic staff and in the variable students per non-academic staff, regional values are significantly different for two out of the four periods. This result points out that regions with higher ratios have partially catch up with the best regions although they need more time or more aggressive policies to draw alongside.

Thirdly, regional values for both output variables display very dissimilar rates of progress in these periods. On the one hand, the regional rate of withdrawal is generally increasing presenting a convergent path; regions with lower starting values are sharply increasing to pull alongside those with higher percentage. On the other hand, the regional rate of performance shows a very dissimilar progress with a slightly divergent path. These results demonstrate how the application of similar strategies, programmes and policies lead to very diverse outcomes in each region; specifically, how policies towards a decrease in the rate of withdrawal have resulted in totally the opposite.

To sum up, it can be concluded that most regions in Spain follow the same general trend, coherent with the guidelines suggested by the Bologna Plan. Nevertheless, decentralisation and delegation of educational competences in regional governments cause the coexistence of miscellaneous education policies and programmes with dissimilar efforts, efficiency and results. These often made regional indicators and their progress differ from each other, being these differences significant in most cases. This fact entails that, in the case of the higher education in Spain, the use of the national mean of each indicator as a measurement of public universities in all regions is an unrepresentative figure and would imply a notable loss in the information and biased comparisons.

6 LIMITATIONS, IMPLICATIONS AND FURTHER RESEARCH

The main limitation of the study is the sample size since there are only forty-seven public universities in Spain and not all of them are used in this study. However, they are considered representative of the whole Spanish higher education sector. Moreover, using a non-parametric test implies having weaker results than using parametric ones when the sample size is small.

The uniqueness of this study involves important implications for managers in each university, for managers in the regional government and for European policy makers. For all of them, a cautious interpretation of statistics is suggested along with an understanding of regional differences. Firstly, there are important managerial implications. Managers in HEIs would have valuable information about the position and progress of their region in comparison with the others and use these data to make better decisions and carry out improved strategies. This study shows European policy makers that the Spanish national value is no representative of the reality of each region. This means that statistics must be carefully interpreted and that regional differences must be taken into account when designing educational policies.

Secondly, this study gives policy makers an overview about the particular situation and the progress of each indicator in each region in comparison with the remaining ones. At a regional level, policy makers can guess its strength and weaknesses, while getting to know the degree of emphasis they must have

in each of the indicators in order to converge with the remaining regions. At a national level, policy makers could establish general guidelines to achieve regional convergence, which would be ease through coordination and collaboration between regional governments and the central government.

Taking into account the exploratory nature of this study, it opens several lines of further research. One of these lines could be to look for the causes why a priori appropriate actions lead to unexpected results such as higher rate of withdrawal and unchanging rate of performance. Generally, the kind of programmes or strategies that each region has carried out could be compared with the results obtained to check if there are some strategies more efficient than others. However, other factors may be taken into account.

Specifically, it would be interested to test whether regions with better inputs, such as higher expenses or lower student-staff ratio, achieve significantly better outputs, such as lower rate of withdrawal or higher rate of performance. Moreover, if this study is repeated in a few years time, it would show the extent to which the current economic and financial crisis is going to affect both the resources and the management of the universities in each Spanish region.

Additionally, this regional study could be carried out in the remaining countries of the EHEA. This would show until what extent regions in each country follow the principles of Bologna process and the degree of convergence or divergence among those regions. Remarkable conclusions could be reached making both intra and inter county comparisons. Finally, it could be test whether countries with more decentralised competences in higher education have more diverse values in each of the educational indicators; this means whether decentralisation and national convergence are compatible.

REFERENCES

[1] King, R., & Verbik, L. (2007). Special report: European higher education in an era of change and reform. European Policy Analyst, 40-47

[2] Comisión Europea (2003) El papel de las universidades en la Europa del conocimiento. Bruselas: Comunicación de la Comisión de las Comunidades Europeas.

[3] Comisión Europea (2005) Movilizar el capital intelectual en Europa. Bruselas: Comunicación de la Comisión de las Comunidades Europeas.

[4] Orphanides, A. (2005). Quality Assurance in the European Higher Education Area. Journal of Business & Society, March, pp. 3-6.

[5] Jacobs, B., & van der Ploeg, F. (2006). Guide to reform of higher education: a European perspective. Economic Policy, 21 (47), 535-592.

[6] Obbins, M. & Knill, C. (2009). Higher Education Policies in Central and Eastern Europe: Convergence toward a Common Model?. Governance, 22 (3), 397-430.

[7] Pérez-Diaz, V., Rodriguez, J.C., (2001). Educación Superior y futuro de España. Madrid: Fundación Santillana

[8] López-Casasovas, G., Puig-Junoy, J., Ganuza, J.J., and Planas-Miret, I. (2003) Los nuevos instrumentos de la gestión pública. Colección Estudios Económicos de la Caixa. Barcelona: La Caixa.

[9] Grözinger, G., & Rodríguez-Gómez, R. (2007). Managing Higher Education: Introduction. Management Revue, 18 (2), 95-101

[10] Anderson, D.R., Sweeney, D.J., Williams, T.A. (2004) Statistics for Business and Economics. 9th Edition. Ohio: South-Western College Publishing

[11] Hernández Armenteros,J. (2008) La Universidad Española en cifras: Información Académica, Productiva y Financiera de las Universidades Españolas. Madrid: Conferencia de Rectores de las Universidades Españolas

[12] Pérez García, J.A. (2008) Análisis de la evolución del comportamiento económico-financiero de las universidades públicas españolas, en Hernández Armenteros,J. (2008) La Universidad Española en cifras: Información Académica, Productiva y Financiera de las Universidades Españolas. Madrid: Conferencia de Rectores de las Universidades Españolas

[13] OECD (2008) OECD Tertiary Review of Higher Education. Country Background Report for Spain.

[14] Parelleda, M. (2008) Informe CYD de la Universidad en España. Madrid: Fundación Conocimiento y Desarrollo