Journal of Business and Economics, ISSN 2155-7950, USA
February 2016, Volume 7, No. 2, pp. 314-324
DOI: 10.15341/jbe(2155-7950)/02.07.2016/015

http://www.academicstar.us

The Predictive Power of Certain Variables in University Persistence: A Discriminant Analysis

Vanesa Berlanga Silvente, Pilar Figuera Gazo, Ernest Pons Fanals
(Universidad de Barcelona, Spain)

Abstract: The social dimension of higher education is one of the key elements of university policies in the early 21st century. Among these are retention measures, scholarship policies and study aids that promote equity and guarantee income to families with fewer resources. In Spain, within the framework of the 2015 Strategy, the implementation of the *salary scholarship* is intended to ensure access to and persistence of university studies to those most economically disadvantaged social groups. This research produces an ex post facto study of descriptive-comparative nature, aimed at assessing the impact of the *salary scholarship*, as an economic factor, concerning equity, access and academic achievement in the first year of university. Presented are the results of a study aimed at identifying which factors associated with persistence have greater discrimination power in the permanence of students on scholarship. The study was conducted with a total of 642 undergraduate students awarded *salary scholarships* from the 2010-11 cohort of the University of Barcelona. Based on the results we can assert that the students who attend and pass less of the universities' core courses and achieve less academic success seem to make the decision not to persevere, abandoning the academic major in which they originally enrolled in their first year of university.

Key words: social dimension; equity; salary scholarship; discriminant analysis; efficiency
JEL code: I20

1. Introduction

The model of scholarships and aid is part of the university reforms in recent decades that aspire to consolidate more inclusive and open organizations while concurrently striving to implement and support two key principles: equity and excellence. In Spain this process runs parallel to the creation of the European Higher Education Area (EHEA) who has led the basic principles of the reform in the scope of the European Union. The social dimension of higher education is one of the fundamental elements of university policies today.

One report by the OECD, published in 2012 noted that persistence of situations of discrimination concerning

Vanesa Berlanga Silvente, Dr. in science education, Professor, Department of Research Methods and Diagnosis in Education at the University of Barcelona (UB); research areas/interests: academic and work transitions and analysis of economic factors in university persistence. E-mail: berlanga.silvente@ub.edu.

Maria Pilar Figuera Gazo, Dr. in science education, Professor, Department of Research Methods and Diagnosis in Education at the University of Barcelona (UB); research areas/interests: academic and employment transitions and career guidance. E-mail: pfiguera@ub.edu.

Ernest Pons Fanals, Dr. in Applied Economics, Professor, Department of Econometrics, Statistics and Spanish Economy at the University of Barcelona (UB); research areas/interests: economic forecasting, analysis of the economic situation, the living conditions of Students University and academic performance constraints. E-mail: epons@ub.edu.

access and production, in part, from the rigidity of the enrollment and admission systems could be perpetuating patterns of socio-economic exclusion by focusing exclusively on the results of secondary education or the results of entrance exams. The report also observes situations of inequity in retaining disadvantaged groups who clearly must often face more challenges in order to succeed in school than their peers (OECD, 2012).

In Spain we have witnessed in recent years significant changes in the model for financing Spanish universities (OECD, 2013). Specifically, after the approval of the Royal Decree 922/2009 of 29 May, a new scholarship structure was implemented, in response to an aid model inspired by the criteria of equity and efficiency. The most significant concretion was the introduction of a new aid under the formula for the *salary scholarship*, which represents an evolution and modernization of, thus far, compensatory scholarships of more fragmented nature. The *salary scholarship* implies commitment to full-time studies, by facilitating student revenues to offset university costs. This new scholarship scheme began to be progressively applied during the academic year of 2009-10, so that on the horizon of the year 2020, the established model would be operative as well as the current scholarship system repealed.

Research developed over the past few decades is conclusive in this regard. Economic factors are one of the predictors of access to university and choice of studies. Numerous studies highlight the under-representation of university students from low-income families (see international review of Cabrera, Pérez, & López, 2014; Troiano & Elias, 2014). In our country, the increase in university tuition fees from the academic year of 2012-13 plus the reduction of aid, combined with the impoverishment of families due to the economic crisis, anticipates changes in the social composition of the university. Moreover, territorial differences in pricing policies generates, as noted Michavila (2013) or Ariño (2014), an important segmentation between autonomous communities. These data additionally call into question the outcome indicators, in that students from disadvantaged economic backgrounds have lower graduation rates and tend to complete their studies in more years than anticipated (Cabrera, Perez, & Lopez, 2014; Crawford & Harris, 2008; Gairín & others, 2014). The causes can respond to an interaction of personal and contextual factors. The influence of previous academic background, (i.e., acquired knowledge and study management competencies) explains the results of a portion of the students, especially those whose abandonment occurs for academic reasons (Cabrera, Burkum, NASA & Bibo, 2012; Figuera & Torrado, 2014). As a result of these data, there are many reports that have highlighted the need for an adequate system of funding and financial aid to ensure the principle of equity.

In the face of this debate, there are several authors who claim contrasting data allowing to adequately discuss the effect of the scholarship as a factor of access to university and permanence in the system and therefore, as a key instrument of equity. These lines of work are still emerging in our country, but its results allow advancement in certain working hypotheses. Some components of the study refer to post-compulsory education, such as the work of Mediavilla (2010), which concludes that the perception of the scholarship impacts positively on the educational level attained at age 19. Or the investigation by Río Ruiz and Jiménez Rodrigo (2014), with students who had been awarded scholarships subject to their academic achievement. The authors noted an increase of students exceeding academic requirements in order to attain the scholarship. In addition, the scholarship becomes, for some students, an incentive that affects key variables such as the degree of effort and commitment to education, with variable results depending on the trajectory and the level of prior performance.

The studies also call attention to the difficulties that entail an academic life conditioned to the overcoming of the requirements that will allow the conservation of the scholarship. The process of becoming a scholarship recipient influences the attitudes and strategies vital to the study of these young people. Thus, instrumental

strategies prevail in the selection of studies, in the sense that they choose career paths that will ensure their success. Therefore, the use of instrumental strategies is prevalent in the planning and coping of studies with the aim of ensuring those approved required to overcome the scholarship. In return, grades, as well as possibilities to delve into subjects not required, may be affected (Río Ruiz & Jiménez Rodrigo, 2014; Berlanga, Figuera & Pons, 2013).

Without a doubt, the current debate surrounding the support mechanisms that ensure equity objectives requires the development of longitudinal and contextualized studies which help to explain different realities. The objective of this report is to present the results of a broader study aimed at analyzing the transition process in the first two years of university for a cohort of students who have accepted a *salary scholarship*. More specifically, it is intended to give answer to 'Which variables reinforce persistence to university students awarded scholarships?', and 'How effective is the scholarship in the transition to the end of the first year?' It is aimed at measuring the relationship between studying on a *salary scholarship* and the proportion of cases that persist in university at the end of the first year.

2. Objectives

The purpose of this research is to analyze the impact of the *salary scholarship*, as an economic factor, on the persistence in the first year of university. In order to achieve this, we have sought to identify which factors associated with persistence have more discrimination power in the general population and in the population of awarded scholarship students at the University of Barcelona, by means of a discriminant analysis. The application of discriminant analysis will enable us to respond to the following inquiry: "what power of discrimination have the selected variables at the beginning of the course in predicting university persistence for students awarded scholarships and students not awarded scholarships?"

Available data on the set of students who were admitted to undergraduate studies at the University of Barcelona during 2010-11 has been used with the intent of analyzing the extent to which these objectives are met.

3. Methodology

3.1 Procedure

This research is part of a broader ex post facto study of descriptive-comparative nature where data has been analyzed from an institutional database (analysis tool) that integrates information from first year students belonging to a total of 68 different majors from the 2010-11 academic year at the University of Barcelona, including majors from all fields of study.

In this investigation, a discriminant analysis was conducted, in search of the factors that best discriminate the persistence of students awarded scholarships at the University of Barcelona. In many investigations, regardless of field of study, it is common to have the need to identify which characteristics differentiate a certain group of subjects or objects with respect to others, in order to make future predictions. Discriminant analysis is statistical evidence appropriate to select which independent or predictor variables make it possible to differentiate between groups and how many of these variables are needed to achieve the best possible classification. Additionally it enables quantification of discrimination power in the belonging relationship of a subject or object to one group or another. Therefore, this technique is considered, in addition to a classification test, proof of dependency. In fact, its purpose is similar to logistic regression analysis; the difference lies in the fact that it only allows quantitative

variables (Torrado & Berlanga, 2013). Therefore, two discriminant functions will be obtained, one for each group of students (students awarded scholarships and students not awarded scholarships). From a methodological perspective, whether to persist or not has been selected as the dependent variable, i.e., "persistence" is considered to a student who returns to enroll in the same major in the second year after having agreed to the studies. Presented in Table 1 are the independent variables collected in the survey, which correspond to those variables for which information is available.

Table 1 Independent Variables

VARIABLES	ACRONYM
Student gender	SG
Student entry age	SEA
Student residence	SR
Student employment status	SES
Occupational status of father	OCOF
Occupational status of mother	OSOM
Educational level of father	ELOF
Educational level of mother	ELOM
Year of acceptance at university	YOAAU
Path taken to university	PTTU
Order of choice of studies	OOCOS
PAU grades	PG
Type of high school	TOHS
Type of CFSG	TOC
Choice of study orientation	COSO
Choice of study aspects	COSA
Academic major	AM
Courses enrolled in the first year	CEITFY
Courses attended in the first year	CAITFY
Courses completed in the first year	CCITFY
First year filing fee	FYFF
First year return rate	FYRR
First year success rate	FYSR
First year average grade	FYAG

3.2 Population

The population of this study was conducted with 642 first year undergraduate students awarded *salary scholarships* from the 2010-11 cohort (total of 10,394 first year students) of the University of Barcelona. The cohort of the 2010-11 academic year has been used as a reference because it coincides with the same academic year in which the new scholarship program was consolidated.

3.3 Data Analysis

For the treatment and analysis of the data, PASW Statistics software, version 20.0, has been used. There have been descriptive univariate of all variables involved, descriptive bivariate to explore the relationship between variables, normality tests, non-parametric contrast tests to determine the significance of the differences found and there have been two discriminant functions for university persistence for awarded scholarship students and the general population. Since we have nominal, ordinal and scale variables, a classification of these same variables has been made before applying discriminant analysis thus determining which variables are significant.

4. Results

4.1 Reality of the Salary Scholarship

To properly situate our analysis, it seems appropriate to first define some features of the context in which these *salary scholarships* were applied. During the academic year of 2009-2010 333 *salary scholarships* were awarded to graduate students at the University of Barcelona, while in the academic year of 2010-11 642 were awarded, which is almost double. This is because, until the academic year of 2010-2011, we could not yet consider the scholarship to be established due to the general lack of knowledge of this figure. Regarding the impact of these scholarships, it should be noted that these 642 students represent 6.2% of total first year students (10,394). This is a relevant percentage taking into account the economic conditions that students must meet in order to apply for this scholarship are legitimately demanding (for the granting of this aid it is essential that family income does not exceed the threshold income 1 established among a total of 3,962 euros for one member families) and it must be taken into account that it is a 'new' type of scholarship.

The academic following of scholarship students in the 2010-11 cohort during their first two years of an academic major may help outline differential situations between peers not awarded scholarships in relation to the different specific disciplinary scopes in which they are enrolled. The analysis of the academic records of those 10,394 students have made it possible and we have analyzed types of transition within the cohort and by fields of study.

On the other hand, the definition of the *persistence rate* that occurs in the quality indicators of higher education has as reference the formalization, or not, of the registration the following year. Drawing on this indicator, the persistence rate of awarded scholarship students in the first year from the study cohort of the University of Barcelona is of the 79.4%, 510 awarded scholarship students from a total of 642 returned to enroll in the same course of study in the second year (Table 2). The rate is slightly higher than that of the general population and, therefore, launches the hypothesis that the scholarship is fulfilling its mission to help the awarded scholarship students to have a greater commitment to education and thus to extend the scholarship to the subsequent course of study.

Table 2 Data on Continuation or Abandonment after the First Course (Accepted First Year Students in the 10-11 Course)

	No scholarship	Scholarship	Total
Continue	7,637 (78.3%)	510 (79.4%)	8,147
Leave	2,115 (21.7%)	132 (20.6%)	2,247
Total	9,752	642	10,394

Analysis of data distinguishing according to the major area of studies suggests that, although there is no significant difference between the two groups, the higher persistence rate of awarded scholarship students occurs in the academic majors in health sciences and social and legal sciences. The field of science majors shows a percentage less than the rest of peers not awarded scholarships (Table 3).

4.2 Discriminant Analysis

Discriminant functions, obtained as linear combinations of the explanatory variables in discriminant analysis, allow classification of individuals from the sample into groups defined by the dependent variable, through the establishment of a cut-off point for scores calculated from the corresponding function (Torrado & Berlanga, 2013). In this case, it is a response variable with two modalities (to persist or not in their registered major), by which you obtain a single discriminant function. In the program used in the empirical study (PASW Statistics), there are

several criteria that can be considered in the selection of the variables included in the discriminant functions: Wilks' lambda, variance not explained or residual, distance from Mahalanobis, Rao V and minor reason F (Ferrán, 2002). The criterion of minimizing Wilks' lambda for the presentation of the results have been applied to this study.

Table 3 Data on Continuation or Abandonment after the First Course Distinguishing According to Academic Major

Subject Areas	Total number of new students	Total Cohort N = 10.394				Contrast
		Scholarship N = 642		No scholarship N = 9.752		
		Enrolled 1st year	Continue 2 year	Enrolled 1st year	Continue 2 year	
Arts and Humanities	2,227	121	89 (73.6%)	2,106	1,539 (73.1%)	χ^2 = 0.013 (sig. 0.908)
Sciences	1,241	68	43 (63.2%)	1,173	790 (67.3%)	χ^2=0.493 (sig. 0.483)
Engineering and Architecture	210	10	6 (60.0%)	200	114 (57.0%)	χ^2=0.035 (sig. 0.852)
Health Sciences	1,324	76	72 (94.7%)	1,248	1,110 (88.9%)	χ^2=2.512 (sig. 0.113)
Social and Legal Sciences	5,392	367	300 (81.7%)	5,025	4,084 (81.3%)	χ^2=0.050 (sig. 0.823)
Total UB	*10,394*	*642*	*510 (79.4%)*	*9,752*	*7,637 (78.3%)*	

By means of the statistical software PASW Statistics, we were able to obtain parametric assumptions by the M. Test Box showing, on the one hand, the value of the test and its transformation in an F statistical as well as its significance. The obtained result of the test confirms that the variance-covariance matrices are different. Bear in mind that non-compliance with the parametric case is especially sensitive in large samples and deviations of the multivariate normality of a variable.

Table 4 M. Test Box from the Discriminant Analysis of Students Awarded Scholarship versus students Not Awarded Scholarship

Test results			
		Scholarship	No scholarship
M de Box		74.791	1,301.332
F	Approx.	23.400	128.896
	gl1	3	10
	gl2	5,321.831	321,697.402
	Sig.	0.000	0.000

Note: The null hypothesis that the population covariance matrices are equal.

From the first values obtained from the analysis for the assessment of the significance of the discriminant function (awarded scholarship: 0.525 self-worth, 0.587 canonical correlation, not awarded scholarship: 0.446 self-worth, 0.555 canonical correlation) a first conclusion is drawn: there is a single discriminant function that allows significantly (sig. 000) the classification of the subjects in the two groups of persistence and abandonment (Tables 4 and 5) in both the general population and students awarded scholarships. Wilks' λ value (awarded scholarship, 0.656; not awarded scholarship, 0.691) poses a second conclusion: although discriminant function will serve to predict group permanence, surely not all variables are discriminatory (Table 5). Its value denotes certain similarities between the groups and, therefore, it is necessary to study the influence of each of the variables in the discriminant function obtained. Consequently, the recommended process is to perform the test with all of

the variables by means of the option "use inclusion method for steps," and subsequently remove those of which are non-significant in the function.

Table 5 Wilks' Lambda and Self-worth from the Discriminant Analysis of Students Awarded Scholarship versus Students Not Awarded Scholarship

	Eigenvalues				
	Function	Eigenvalue	% de variance	% accumulated	canonical correlation
Scholarship	1	0.525[a]	100.0	100.0	0.587
No Scholarship	1	0.446[a]	100.0	100.0	0.555

Note: a. They have used the one first canonical discriminant functions in the analysis.

	Wilks' lambda				
	Contrast functions	Wilks' lambda	Chi-square	gl	Sig.
Scholarship	1	0.656	51.049	2	0.000
No Scholarship	1	0.691	449.007	4	0.000

Below are two tables exhibiting all steps followed for the construction of the discriminant function and consequently which considered independent variables are initially significant for the model. In the case of students awarded scholarships only two variables are included: courses passed and filing fee. While the variables for the population of students not awarded scholarships include: attendance rate, success rate, courses enrolled and courses passed. The footnotes on the tables indicate that Wilks' global value of λ, the statistical F to incorporate variables (input criteria) and a statistician have been used to exclude variables (exit criteria), and that the level of F has been insufficient to continue the calculations; that is to say, not all variables defined for the analysis have been included (Tables 6 and 7).

The contrast of Wilks' lambda is a test for the contrast of the means of discriminant functions in all groups. In such a way that if the p-value is less than 0.05, it is consequently accepted that there are differences in behavior between the means of the groups (Torrado & Berlanga, 2013). Therefore, the process carries out the test with all functions in order to then go distributing into two tables the selected variables of those that are not.

Table 6 Variable Selection from the Discriminant Analysis of Students Awarded Scholarship

Variables included/excluded [a,b,c,d]									
Pas	Introduce	Wilks' lambda							
		Statistical	gl1	gl2	gl3	F exacta			
						Statistical	gl1	gl2	Sig.
1	Courses completed in the first year	0.712	1	1	122.000	49.353	1	122.000	0.000
2	First year filing fee	0.656	2	1	122.000	31.753	2	121.000	0.000

At each step, the variable that minimizes the overall Wilks' lambda is entered.
a. The maximum number of steps is 48.
b. The minimum partial F to enter is 3.84.
c. The maximum partial F is 2.71 to exit
d. The level of F, tolerance or VIN are insufficient to continue the calculations.

Variables in the analysis				
Pas		Tolerance	F to exit	Wilks' lambda
1	Courses completed in the first year	1.000	49.353	
2	Courses completed in the first year	0.736	11.776	0.720
	First year filing fee	0.736	10.364	0.712

Table 7 Variable Selection from the Discriminant Analysis of Students Not Awarded Scholarship

Variables included / excluded [a,b,c,d]									
Pas	Introduced	Wilks' lambda							
		Statistical	gl1	gl2	gl3	F exacta			
						Statistical	gl1	gl2	Sig.
1	First year filing fee	0.769	1	1	1,219.000	366.845	1	1,219.000	0.000
2	First year success rate	0.729	2	1	1,219.000	225.896	2	1,218.000	0.000
3	Courses enrolled in the first year	0.711	3	1	1,219.000	164.834	3	1,217.000	0.000
4	Courses completed in the first year	0.691	4	1	1,219.000	135.648	4	1,216.000	0.000

At each step, the variable that minimizes the overall Wilks' lambda is entered.
a. The maximum number of steps is 48.
b. The minimum partial F to enter is 3.84.
c. The maximum partial F is 2.71 to exit
d. The level of F, tolerance or VIN are insufficient to continue the calculations.

Variables in the analysis				
Pas		Tolerance	F to exit	Wilks' lambda
1	First year filing fee	1.000	366.845	
2	First year filing fee	0.986	289.183	0.903
	First year success rate	0.986	65.529	0.769
3	First year filing fee	0.985	273.714	0.871
	First year success rate	0.974	73.705	0.754
	Courses enrolled in the first year	0.988	31.425	0.729
4	First year filing fee	0.284	189.156	0.799
	First year success rate	0.110	71.472	0.732
	Courses enrolled in the first year	0.181	60.104	0.726
	Courses completed in the first year	0.063	34.482	0.711

Focusing on the discriminant function, the table presenting standardized coefficients of the discriminant functions identifies those variables with greater weight in the prediction model and makes it possible to identify the resulting discriminant function. The estimated discriminant function for students awarded scholarships contains two independent variables and four variables for the general population, who's weights, without typifying and standardized, as well as the statisticians who value its individual significance, are collected in Table 8 and Figures 1 and 2.

Table 8 Discriminant Function Coefficients from the Discriminant Analysis of Students Awarded Scholarship versus Students Not Awarded Scholarship

Coefficients of canonical discriminant functions			
	Scholarship Function 1		No scholarship Function 1
Courses completed in the first year	0.893	Courses enrolled in the first year	1.022
First year filing fee	1.136	Courses completed in the first year	-1.449
(Constant)	-0.328	First year filing fee	1.894
		First year success rate	1.381
		(Constant)	-0.265

$D_1 = -0.328 + 0.893$ Courses completed in the first year + 1.136 First year filing fee

Figure 1 Discriminant Function for Students Awarded Scholarship

D_1 = -0.265 + 1.022 Courses enrolled in the first year – 1.449 Courses completed in the first year + 1.894 First year filing fee + 1.381 First year success rate

Figure 2 Discriminant Function for Students Not Awarded Scholarship

The predictive ability of discriminant function is evaluated based on the classification matrix which reflects the values observed for the dependent variable and those estimated by the model. The final step in the analysis is the summary table of the classification subjects from the implementation of the discriminant function obtained. In the case of the population of students awarded scholarships, it seems to have correctly classified 89.6% from the courses passed and the filing fee. And in the case of the general population it seems to have correctly classified 88.7% from the courses enrolled, courses passed, filing fees and success rate (Tables 9 and 10).

Table 9 Final Classification Results from the Discriminant Analysis of Students Awarded Scholarship

Classification results[a]					
			Predicted group membership		Total
			There persists the 1st academic year	Persists the 1st academic year	
Original	Count	There persists the 1st academic year	50	47	97
		Persists the 1st academic year	16	493	509
	%	There persists the 1st academic year	51.5	48.5	100.0
		Persists the 1st academic year	3.1	96.9	100.0

Note: a. Correctly classified 89.6% of original grouped cases.

Table 10 Final Classification Results from the Discriminant Analysis of Students Not Awarded Scholarship

Classification results[a]					
			Predicted group membership		Total
			There persists the 1st academic year	Persists the 1st academic year	
Original	Count	There persists the 1st academic year	606	735	1,341
		Persists the 1st academic year	273	7,332	7,605
	%	There persists the 1st academic year	45.2	54.8	100.0
		Persists the 1st academic year	3.6	96.4	100.0

Note: a. Correctly classified 88.7% of original grouped cases.

Therefore, in the case of students not awarded scholarships, it does not only influence the courses passed and the attendance rate, but that there are two more variables predictive of the phenomenon which are courses enrolled and success rate.

5. Discussion and Conclusions

The results of this research have allowed to observe, firstly, that the persistence rate of students awarded scholarships is similar to those of the student body. This then indicates, considering that these students' economic conditions are worse than the rest, that the *salary scholarship* allows compensation for the difficulties of those students from low-income families, constituting a powerful tool for ensuring social equity. The argument used to justify this conclusion lies in the fact that, without these scholarships, and if faced with poor economic conditions, lower persistence rates are expected, in line with what the majority of international level studies indicate. For this reason, some reports highlight the need for an adequate funding system in order to ensure the principle of equity in the university system (Egido Gálvez, Fernández Díaz & Galán, 2014, Ariño, 2014).

Furthermore, this research has focused on the search for those factors that best allow us to distinguish students awarded scholarships of whom are going to persist from those who are not; in order to better understand the relationship that exists between the individual and academic characteristics of students awarded scholarships with the likelihood of persistence in their first year of university. Factors identified as relevant are: attendance rate and courses passed. Therefore, we can assert that the probability of a student awarded scholarship persisting in their studies increases with the increment of attendance rate and a high percentage of courses passed. Students who attend and pass less of the universities' core courses and achieve less academic success seem to make the decision not to persevere, abandoning the academic major in which they originally enrolled in their first year of university. In this sense, our results confirm the thesis of Cabrera, Pérez and López (2014) that obtaining a scholarship becomes an incentive that affects the key aspects of persistence, such as the degree of effort and commitment to education with positive results on the level of performance.

Thus far there are few reports that have focused on testing if students' financial aid helps to increase the likelihood that students with fewer economic resources remain at university. The literature on this subject has been limited in order to determine the role of financial aid on the admission to university and to analyze the role played by the credit restrictions on the decisions of whether or not to attend higher education. In this sense, scholarships and aid should be a key instrument to save the economic barriers, and increase the chances of access to higher education and continuity of academic studies in social groups with greater economic difficulties.

But given the current deterioration of economic conditions in our country, plus the increase in price of university tuition, the question of, 'How can the change in scholarship policies affect student performance?' has been raised. Given this research, we can assert that the granting of a *salary scholarship* does not in itself guarantee a stronger commitment to studies which entail high performance. This seems to imply that, although this issue is still pending for further research, the high academic pressure derived from economic problems and the necessity to conserve the scholarship, causes less incentive to achieve better grades in favor of ensuring a greater number of courses passed. Bearing in mind that the EHEA leads students to take a more decisive role in the achievement of their academic performance (Martin et al., 2010), the incidence that orientation actions carried out during the first year may have remains clear.

References:

Ariño A. (2014). "La dimensión social de la Educación Superior", *RASE*, Vol. 7, No. 1, pp. 17-41.

Ariño A. and Llopis R. (Dirs.) (2011). *Universidad sin clases? Condiciones de vida de los estudiantes universitarios en España (Eurostudent IV)*, Madrid: Ministerio de Educación.

Berlanga V, Figuera P. and Pons E. (2013). "Incidencia de la beca salario: impacto, perfil y rendimiento de los estudiantes", *RELIEVE-Revista Electrónica de Investigación y Evaluación Educativa*, Vol. 19, No. 2.

Cabrera A. F., Nora, A. and Castañeda M. B. (1992). "The role of finances in the persistence process: A structural model", *Research in Higher Education*, Vol. 33, No. 5, pp. 571-593.

Cabrera A. F., Burkum K. R., La Nasa S. M. and Bibo E. (2012). "Pathways to a four-year degree: Determinants of degree completion among socio-economically disadvantaged students", in: A. Seidman (Ed., *College Student Retention: A Formula for Student Success*, Westport, CT: Praeger Publishers, pp. 155-209.

Cabrera A. F., Pérez P. and López L. (2014). "Evolución de las perspectivas de estudio de la retención universitaria en los EEUU: Bases conceptuales y puntos de inflexion", in: P. Figuera (Ed.), *Persistir con éxito en la universidad: de la investigación a la acción*, Barcelona: Laertes, pp. 15-40.

Crawford K. and Harris M. (2008). "Differential predictors of persistence between community college adult and traditional aged students", *Community College Journal of Research and Practice*, Vol. 32, pp. 75-100.

Egido Gálvez I., Fernández Díaz M. J. and Galán A. (2014). "La dimensión social del proceso de Bolonia: Apoyos y servicios para

grupos de estudiantes poco representados en las universidades españolas", *Educación XX1*, Vol. 17, No. 2, pp. 57-81.

Elías M. and Daza L. (2014). "Sistema de becas y equidad participativa en la universidad", Rase. *Revista de la Asociación de Sociología de la Educación*, Vol. 27, No. 1, pp. 233-251.

Eurydice (2011). *La modernización de la educación superior en Europa 2011: financiación y dimensión social*, Bruselas: Eurydice.

Ferrán Aranaz M. (2002). *Curso de SPSS para Windows*, Madrid: McGraw-Hill.

Figuera P. and Torrado M. (2013). "El contexto académico como factor diferenciador en la transición a la Universidad", *Revista Contrapontos*, Vol. 13, No. 1, pp. 33-41.

Figuera P. and Torrado M. (2014). "El proceso de adaptación y los resultados en el primer año", in: P. Figuera (Ed.), *Persistir con éxito en la universidad: de la investigación a la acción*, Barcelona: Laertes, pp. 113-138.

Figuera P., Torrado M., Freixa M. and Dorio I. (en prensa). Trayectorias de persistencia abandono en estudiantes universitarios no convencionales: implicaciones para la orientación, *Revista Electrónica Interuniversitaria de Formación del Profesorado.*

Gairín J., Triado X., Feixas M., Figuera P., Aparicio P. and Torrado M. (2014). "Student drop-out rates in Catalan universities: Profile and motives for disengagement", *Quality in Higher Education*, Vol. 20, No. 2, pp. 165-182.

Hernández Armenteros J. and Pérez García J. A. (2014). *Les desigualtats educatives a Espanya: beques i ajudes a l'estudi en l'educació universitària espanyola*, Conferencia Claustre Obert. Universitat de València.

Martín E., González M., Rodríguez J., Pérez C., Álvarez P., Cabrera L., Bethencourt J., Páez C. and Palenzuela A. (2010). *El rendimiento académico del alumnado de nuevo ingreso en la Universidad de La Laguna*, La Laguna: Servicio de Publicaciones de la Universidad de La Laguna.

Mediavilla M. (2010). "Las becas y ayudas al estudio como elemento determinante de la continuidad escolar en el nivel secundario post-obligatorio: Un análisis de sensibilidad a partir de la aplicación del Propensity Score Matching", *Investigaciones de Economía de la Educación*, Vol. 5, pp. 561-582.

Michavila F. (dir.) (2013). "La universidad española en cifras 2012", in: *Conferencia de Rectores de las Universidades Españolas (CRUE).*

Ministerio de Educación, Real Decreto 922/2009, de 29 de mayo, por el que se establecen los umbrales de renta y patrimonio familiar y las cuantías de las becas y ayudas al estudio del Ministerio de Educación para el curso 2009-2010. (BOE número 131, de 30 de mayo de 2009).

OCDE (2012). *Education at a Glance 2012. OECD Indicators.* París: OECD.

OCDE (2013). *Panorama de la Educación. Indicadores de la OCDE 2013. Informe Español.* Madrid: Ministerio de Educación.

Real Decreto 922/2009, de 29 de mayo, por el que se establecen los umbrales de renta y patrimonio familiar y las cuantías de las becas y ayudas al estudio del Ministerio de Educación para el curso 2009-2010, *BOE,* 131, de 30 de mayo de 2009. Madrid: Ministerio de Educación.

Río Ruiz M. Á. and Jiménez Rodrigo M. L. (2014). "Las becas 6000 a examen. Resultados, prácticas, expectativas y oportunidades escolares de familias y estudiantes incluidos en el programa", *Revista Internacional De Sociología*, Vol. 72, No. 3, pp. 609-632.

Tinto V. (2012). *Completing College: Rethinking Institutional Action*, Illinois, Chicago: The University of Chicago Press.

Torrado M. and Berlanga V. (2013). "Análisis Discriminante mediante SPSS", [En línea] REIRE, *Revista d'Innovació i Recerca en Educació*, Vol. 6, No. 2, pp. 150-166, available online at: http://www.ub.edu/ice/reire.htm.

Troiano H. and Elias M. (2014). "University access and after: Explaining the social composition of degree programmes and the contrasting expectations of students", *Higher Education*, Vol. 67, No. 5, pp. 637-654.