



# FROM THE WHITE PAPER ON THE QUALIFICATION OF THE DEGREE IN PSYCHOLOGY TO THE BUSINESS OF DESPERATION: A QUANTITATIVE ANALYSIS OF PSYCHOLOGY STUDIES IN SPAIN OVER THE DECADE OF 2005-2015

**Sergio Sánchez-Reales<sup>1</sup>, Javier Prado-Abril<sup>2</sup>, Felix Inchausti<sup>2</sup>, Xacobe Fernández-García<sup>3</sup>, Carlos J. Losada<sup>4</sup> and José Antonio Aldaz-Armendáriz<sup>5</sup>**

<sup>1</sup>Servicio Murciano de Salud. <sup>2</sup>Servicio Navarro de Salud. <sup>3</sup>Institut Municipal Serveis Personals de Badalona.

<sup>4</sup>Servicio Gallego de Salud. <sup>5</sup>Servicio Aragonés de Salud

*El proceso de convergencia con el Espacio Europeo de Educación Superior motivó la publicación del Libro Blanco del Título de Grado en Psicología (ANECA, 2005) donde se desglosa un análisis de la situación de los estudios de Psicología en España y se enumera una serie de recomendaciones para adecuar la titulación a los requisitos europeos. El presente trabajo pretende, diez años después, analizar el grado de implementación de las medidas y propuestas incluidas en el Libro Blanco, así como presentar modelos pronósticos en base a las tendencias observadas mediante análisis de series temporales. Los resultados muestran un incremento progresivo y constante de la oferta formativa, del número de nuevos centros donde se imparte el Grado de Psicología así como de otros indicadores estrechamente relacionados con dicho crecimiento. Por último, se discuten los posibles motivos y se reflexiona sobre el impacto en la precariedad laboral, las elevadas tasas de desempleo y las consecuencias nocivas para un modelo sostenible de la profesión.*

**Palabras Clave:** Grado en Psicología, Libro Blanco, Desempleo, Expectativa profesional, Identidad profesional.

*The process of convergence with the European Higher Education Area led to the publication of the White Paper of the title of the Degree in Psychology (ANECA, 2005) in which an extensive analysis was carried out of the situation of the university studies in psychology in Spain and guidelines were produced to adapt the degree to the European requirements. Ten years later, the present paper aims to analyze the implementation rate of the guidelines included in the White Paper, as well as to develop prognostic models based on the observed trends through time series analyses. The results show a constant and progressive increase of the training programs offered, the number of new faculties, and other closely associated indicators in relation to these growth indicators. Different explanations and reasons for these results are discussed. We also reflect on the impact on job insecurity amongst psychologists, high unemployment rates, and the negative consequences for a sustainable model of professional development.*

**Key Words:** Psychology degree, White paper, Unemployment, Professional expectation, Professional identity.

**T**he last decade, in terms of education, has been characterized by the process of convergence with the European Higher Education Area (EHEA), the establishment of which in our environment meant assuming major organizational changes with regards to university education. Prior to this convergence, the National Agency for the Evaluation of Quality and Accreditation (ANECA) promoted the II Call for Assistance for the Design of Curricula and Degree Qualifications which, in the field of Psychology, culminated in the publication of the White Paper on the Degree in Psychology (ANECA, 2005). The concept of a white paper

refers to the creation—usually at the government's request—of a document in which a particular situation is described together with the processes and procedures that aid the decision making (Stelzner, 2006). The white paper is not inconsequential, since it refers to documents that present proposals for future legislation, orienting the relevant changes and adjustments (e.g., British Parliament, 2016). However, in our particular case and as stated by ANECA (2005), the aim of the White Paper was to make a non-binding proposal, the value of which lies in serving as a tool for information and reflection for the university and ministerial bodies involved in the process of decisions.

Dr. Montserrat Freixa was responsible for the coordination of this work in which the 31 centers that were offering the psychology qualification at the time took part (Freixa, 2005). The result, in the author's own words, was: "an effort to reflect

Received: 26 marzo 2017 - Accepted: 8 junio 2017

Correspondence: Sergio Sánchez-Reales. CSM Jumilla, Servicio Murciano de Salud. Calle Infante Don Fadrique 1. 30528 Jumilla. Murcia. España. E-mail: [s\\_sanchez\\_reales@hotmail.com](mailto:s_sanchez_reales@hotmail.com)



on what psychology training represents, which had not taken place up to now" (ANECA, 2005; p.181). In summary, the document analyzed the differential characteristics of psychology training in Spain, designing a sequence to be followed by the different universities in the adaptation of the curricular content of the psychology degree to the EHEA. For this purpose, the analysis of the situation of psychology studies in Europe was established as a starting point, detailing the similarities and differences with the Spanish model that was already remarkably idiosyncratic with respect to the rest of the countries around us. For example, Spain was the only one of the countries studied in which the title of Degree in Psychology qualified graduates for professional practice; on the contrary, in Europe the tendency was towards 3-year study plans that did not qualify the graduates for professional practice nor, consequently, for joining the labor market. Secondly, the White Paper explores other key issues, such as the social demand for training and job placement for psychology graduates. At that time, psychology had the third largest demand for enrollment among all degrees, with an application acceptance rate of around 30%, indicating a slight downward trend in enrollment in public universities but a growing one in private universities, and a very notable imbalance between new enrollments and the final number of graduates (Hernández Gordillo, 2003; Gil Roales-Nieto, 2005). Regarding the level of labor market insertion, for example, the report shows an approximate rate of insertion of around 80% after three years of completing the studies, characterizing graduates in psychology as versatile professionals of whom around 50-60% practice with functions in the field of psychology. The document emphasizes, however, that only on 20-25% of occasions was the university degree of these psychology graduates required. Finally, at that time, the growth rate of the number of collegiate members was continuous, and labor precariousness, defined by the type of contract and the remuneration, was the main characteristic of the working conditions.

The White Paper lists the competencies necessary to obtain the Degree of Psychology, explicitly recognizing the confusion between competencies and academic knowledge in the foundation of psychology studies (ANECA, 2005). Thus, the relationship between academic competencies and other types of competencies, such as those of an applied and professional nature, is not made clear in any way. However, an attempt was made to agree on the necessary competences that should be acquired at the degree level, differentiating them from those that should be developed later during the postgraduate course. The final proposal establishes that the training for acquiring the competencies will take place at two levels (degree-postgraduate), emphasizing the sequential nature of the acquisition of professional competencies: "Full professional qualification should depend on the training received in the postgraduate course" (ANECA, 2005, p.185). Therefore, the White Paper already points to the need to expand beyond the undergraduate degree, through postgraduate training, in order to obtain full professional competencies.

Following the logic of the project, the White Paper specifies the objectives of the degree and their relationship with the blocks of training content of the future curriculum, which describes a degree of a fundamentally generalist nature in which "the aim is that the student acquires the scientific fundamentals of the discipline and the specific and transversal competencies that facilitate their incorporation into the labor market" (ANECA, 2005; p.149). As we all know, "a four-year general degree (240 European credits) is proposed, in order to give the qualification a basic professional character, in accordance with what is stated in the Decree on the University Degree and in the current regulations of our country. In countries where the degree has been recommended for a period of three years (180 European credits), it is clear that this degree does not prepare students for independent professional practice as a psychologist, that is, without supervision" (ANECA, 2005; p.162).

Finally, the White Paper makes a series of recommendations that are derived from the situation analyzed. One of the most notable recommendations specifically addresses the issue of the size of the educational supply in psychology pointing to the "excessive and misaligned" nature of the volume of students and professionals in Spain (ANECA, 2005, p.65). For this reason it explicitly proposes a reduction in the number of students who enter the degree. Various data then justified the proposal; on the one hand, the number of students, 55,590 of them in the academic year 2004-05, and on the other, the high rate of academic failure, which was over 50%. These figures were seen as incompatible with the quality proposal that emerged from the convergence with the EHEA, which proposed a more personalized and individualized university education (ANECA, 2005). On the other hand, indicators of labor insertion showed that "the supply of graduates and the real demand of these professionals in society is not balanced" (ANECA, 2005; p.183). The document itself suggests a possible origin of this situation, relating it to the high social demand of the qualification which makes the degree in psychology "a politically, socially and economically profitable degree that has led to the proliferation of centers with psychology studies in Spanish universities. This has not generally happened in the rest of Europe" (ANECA, 2005, p.182). The authors, therefore, do not hesitate to emphasize the suitability and necessity of establishing "numerus clausus" (ANECA, 2005, p.65). Addressing the high rate of academic failure and restricting the number of students was pointed out as essential to achieving convergence with the criteria of training excellence outlined by the EHEA, as well as to improve the labor insertion rates of graduates. Consequently, 10 years later, the purpose of this paper is to analyze the degree of implementation of the measures and proposals of the White Paper up to 2015, and to present forecast models based on the trends. With these objectives, data similar to those included in the White Paper are collected and presented, analyzing the trend of the last 10 years in terms of students enrolled, those graduated, university professors and jobseekers in the field of psychology.



## METHOD

### Procedure

In order to assess the level of application of the measures proposed in the White Paper, we analyzed the evolution of the variables that gave rise to the proposals between the academic years 2005-06 and 2015-16. The following data are taken into account: a) the number of centers where the Degree of Psychology is taught in Spain; b) the number of students enrolled and graduated in psychology from these centers; c) the number of university lecturers and the teacher-student ratio in public universities; d) the ratio of students enrolled to those graduated; and (e) people seeking work as a psychologist according to official bodies.

The data collection was carried out in January 2016. The information related to university variables was extracted from the corresponding annual databases of the National Institute of Statistics (2012), the Ministry of Education, Culture and Sport (2016a) and previous studies on this subject (Hernández Gordillo, 2003; Sardiña, 2014). The data referring to jobseekers comes from the Spanish Public Employment Service (SEPE, 2017), attached to the Ministry of Employment of the Government of Spain. This institution officially began to produce the series from September 2009.

### Statistical analysis

The descriptive analysis of the time series is based on the rate of change of the different variables considered in the academic years from 2005-06 to 2015-16. The mean rate of change was calculated based on the geometric mean of the values of the time series. The trend analysis of the series was estimated using curvilinear regression procedures and the coefficient of determination,  $r^2$ , the latter was used to quantify the goodness of fit of the trend estimate. Prediction models for the time series were carried out for the variables "University Students Enrolled in Psychology", "Graduates in Psychology" and "Job Seekers as a Psychologist" from the Spanish Public Employment Service. In order to propose forecast models, the available data on enrollments from the academic year 1980-81 were used, whereas in the case of the graduates, data were used from the academic year 1987-88 up to the present, from the sources indicated above.

In order to carry out the time series forecasts, we used autoregressive integrated moving average (ARIMA) models, as well as exponential smoothing (Box, Jenkins, & Reinsel, 2008; Gardner, 1985). The ARIMA models used ( $p$ ,  $d$ , and  $q$ ) differ (1) in the number of autoregressive parameters used ( $p$ ), (2) in the number of differentiations used ( $d$ ), and (3) in the order of the moving averages in the process ( $q$ ). On the other hand, three models of exponential smoothing were considered, which weight recent observations exponentially higher than remote observations. Three general parameters characterize these models: (1)  $\alpha$ , which refers to the relative weight given to the most recent observations compared to the overall mean of the series, (2)  $\beta$ , which controls the relative weight due to recent observations in estimating the trend of the series at the present

time, and (3)  $\gamma$ , which controls the relative weight due to recent observations in the estimation of current seasonality. The smoothing models considered were the Brown model for non-stationary time series of linear trend and the Holt model. The Winters model was considered in cases where seasonal variations were observed (Gardner, 1985; Hyndman & Athanasopoulos, 2013). In all calculations, the selected forecast models correspond to those that optimize goodness of fit as the main criterion (Billah, King, Snyder & Koehler, 2006; Gardner & Dannenbring, 1980).

Preliminary analyses of the time series were carried out after calculating the prognostic models. When necessary, the study of the seasonality was based on correlograms, periodograms, autocorrelation function, partial autocorrelation and analysis of seasonal indices. The box-plot was considered in the study of the relationship between level and variability (formulation of an additive versus summative model). In all cases, the randomness and the independence of the errors were considered based on the Ljung-Box-Q statistic. As indicators of goodness of fit in the construction of the prediction model we used the stationary  $R^2$ , the root mean square error (RMSE), the mean absolute error (MAE), the mean absolute percentage error (MAPE), the maximum absolute error (MaxAE), and the maximum absolute percentage error (MaxAPE) (Box et al., 2008). Once the prediction model was selected, the prediction of the three-year evolution of the variables studied was carried out, showing a 95% confidence interval in the predicted values.

All of the calculations of the present study were carried out with the statistical program SPSS version 17 (SPSS Inc., 2008). In order to save space, in the representation of the data in graphs and tables, the academic years will be denominated by the year in which they begin.

## RESULTS

### *The number and nature of the centers where the Degree in Psychology was taught in Spain between 2005 and 2015*

Since 2005, the total number of centers where the Psychology Degree is taught in Spain has increased from 33 to 52, representing an increase of 57% over a decade (Figure 1). This increase is more accentuated for the centers attached to private universities, which increased from 10 to 23 centers, representing a growth of 130%. With regard to the centers attached to public universities, the increase was from 23 in the academic year 2005-06 to 29 in the academic year 2015-16, representing a growth of 26.08%.

### *The number of students enrolled between the academic year 2005-06 and 2015-16*

The shaded space in Figure 2 shows the data referring to the series of students enrolled in the centers where the Degree of Psychology was taught between the year 2005-06 and 2015-16, distinguishing between enrollments in public centers, those in private centers and total enrollment. The variable Total Enrollment is a non-stationary time series, lacking in seasonal effects, with a linear and increasing trend, with the straight line



$TM(t)=51,829.06+270.35t$  ( $F_{(1,9)}= 47.25$ ;  $p<0.01$ ) presenting the best fit ( $R^2=0.84$ ) to the data in the series. The mean of the whole series considered is 62,977.81 ( $SD=6,724.10$ ). The variable ranges from 55,979 enrollments for the academic year 2005-06 to 70,077 for the year 2015-16, a variation of 25.18% between the extremes of the series. The average rate of change of Total Enrollment over the decade stood at 2.06% per year.

Public University Enrollment had an average of 53,565.45 ( $SD = 5,528.18$ ) students per academic year. The rate of change of enrollment between the extremes of the series indicates an increase of 18.95%, from 49,046 enrollments to 58,340. It is a non-stationary time series, with no seasonal effects and with an increasing trend. The trend of the series is optimized ( $R^2=0.74$ .) on the line  $MPu(t)=4,4952.51+1,435.49t$  ( $F_{(1,9)}= 25.84$ ;  $p=0.01$ ). The average annual rate of change of the variable over the decade showed an increase of 1.45%.

Enrollment in Private University had an average of 9,412.36 ( $SD = 1,435.57$ ) students per year during the decade under study. During this time, enrollments evolved from 6,933 to

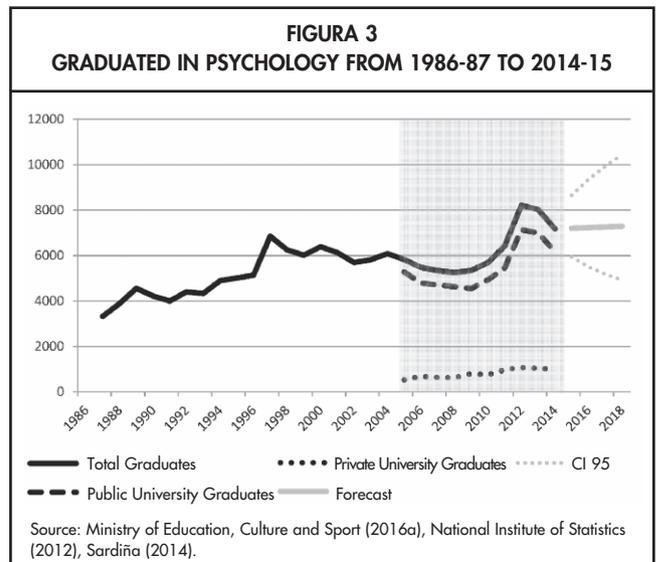
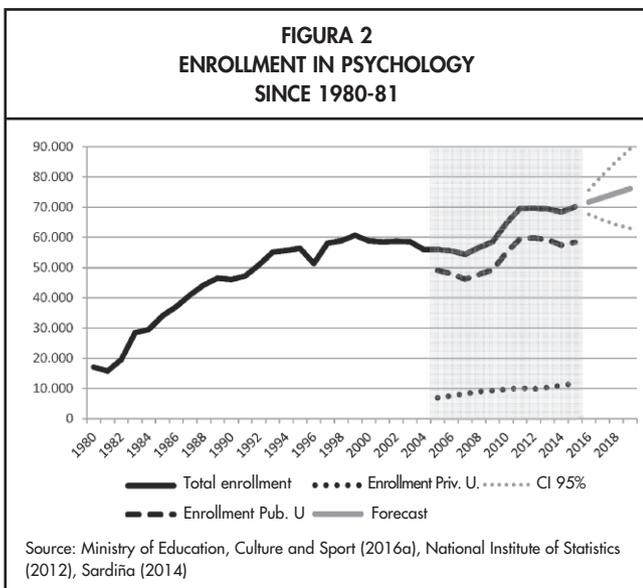
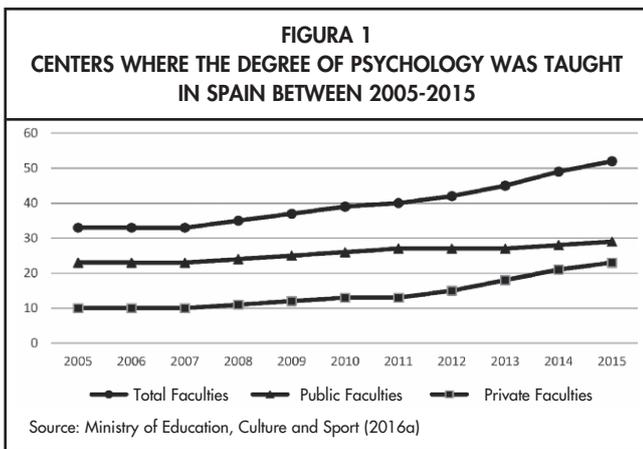
11,737, representing a rate of change of 69.29%. It is a non-stationary time series, lacking seasonal effects, with an increasing tendency, optimized ( $R^2=0.95$ ) using the function  $MPr(t)=6,876.54+422.63t$  ( $F_{(1,9)}= 184.11$ ;  $p<0.01$ ). The average annual rate of change of private university enrollment showed an increase of 6.02%.

Among the prediction models of the time series considered in the method, the one with the best fit was an ARIMA model (1,1,0). The goodness of fit with stationary  $R^2$  is 0.54, with a MAPE of 3.53% and a MAxAPE of 19.48%. The forecast for three academic years exceeds 70,000 students per year, approaching 75,000 centers in the academic year 2018-19. Table 1 summarizes the statistical characteristics of the model, the forecast and 95% confidence intervals (95% CI), shown in Figure 2.

**Students that graduated between the academic years 2005-06 and 2014-15**

The time series of graduates at the moment of collection includes data between the academic years 2005-06 and 2014-15 (Figure 3, shaded space). In relation to the total number of graduates, during the decade analyzed the annual average was 6,297.70, with a standard deviation of 1,126.57. The extreme years of the series show a difference of 1,353 graduates, evolving from the initial 5,815 graduates to 7,168 in the academic year 2014-15, which indicates a rate of change of 23.26% between the two dates. The representation of the data shows a series of non-stationary behavior, with two changes of trend, in general of an increasing nature. The adjustment to the optimum trend model ( $R^2=0.61$ ) responded to the line  $ET(t)=4,657.13+293.07t$  ( $F_{(1,8)}=12.50$ ;  $p<0.01$ ). The average annual rate of change over the decade analyzed showed an increase of 2.12%.

With regards to the graduates of public universities, the average number over the analyzed decade was 5,459.80 ( $DT = 974.10$ ). The extremes of the series indicate a difference of 728 graduates,





evolving from the initial 5,447 graduates to 6,175 per year in 2014-15, which reflects a rate of change of 17.15%. Similar to the general series, it is a non-stationary time series, with anomalous behavior, and two changes of trend during the last decade. The adjustment to the optimum trend model ( $R^2=0.52$ ) corresponds to the straight line  $EPu(t)=4,174.86+233.62t$  ( $F_{(1,8)}=8.92$ ;  $p=0.02$ ). The average annual rate of change over the decade in relation to the total number of graduates from public universities was 1.45%.

The average annual number of students graduated from private universities was 809.20 ( $SD = 194.71$ ). The extremes of the series indicate a difference of 496 graduates, evolving from the initial 524 to 993 graduates per year, reflecting a rate of change of 89.50%. At the descriptive level, it is a non-stationary time series, with no seasonal effects, of increasing linear tendency, with the straight line  $EPr(t)=482.27+59.44t$  ( $F_{(1,8)}=49.92$ ;  $p<0.01$ ) presenting the best fit ( $R^2=0.85$ ) to the data of the series. The average annual rate of change over the

decade in relation to the total number of graduates showed an increase of 7.92%.

Of the prediction models of the time series considered in the method, the one with the best fit was an ARIMA model (0,1,0). The goodness of fit with stationary  $R^2$  was 0.19, with a MAPE of 6.90% and a MaxAPE of 21.52%. The forecasts up to the academic year 2018-19 exceed 7,200 graduates, showing a series that is quite stabilized, although the range of values of the confidence interval is quite broad. Table 1 lists the characteristics of the model, together with the predictions and confidence intervals, shown in Figure 2.

**Resources in the public centers where the Degree of Psychology is taught in Spain: Number of teachers hired and student-to-teacher ratio between the academic years 2005-06 and 2014-15**

As Figure 4 reflects, over the decade under review, the total number of teaching staff in psychology rose from 3,308 to

**TABLE 1  
 FORECAST MODELS OF THE ANALYZED VARIABLES**

Year	Registered <sup>a</sup> (Δ)	Registered CI95%	Graduated <sup>a</sup> (Δ)	Graduated CI95%	Employment (I) seekers <sup>b**</sup> (Δ)	Employment seekers <sup>**</sup> CI95%
2005	55979 (0)	51219.02-59305.80	5815 (0)	5040.41-7338.83	—	—
2005	55979 (0)	51219.02-59305.80	5815 (0)	5040.41-7338.83	—	—
2006	55523 (-0.81)	52612.87-60699.65	5476 (-5.83)	4819.14-7016.65	—	—
2007	54391 (-2.04)	51902.66-59989.45	5337 (-2.54)	4538.20-6607.60	—	—
2008	56561 (3.99)	50408.89-58495.67	5249 (-1.65)	4423.00-6439.87	—	—
2009	58492 (3.41)	54346.02-62432.80	5342 (1.77)	4350.07-6333.69	16017.00	15575.15-16489.51
2010	64665 (10.55)	56149.11-64235.89	5682 (6.36)	4427.14-6445.91	16818.25 (5.00)	16353.45-17.267.81
2011	69571 (7.59)	64592.30-72679.08	6413 (12.87)	4708.92-6856.17	19175.50 (14.01)	18679.26-19593.62
2012	69650 (0.11)	68820.24-76907.02	8206 (27.96)	5314.73-7738.23	22083.83 (15.16)	21595.83-22510.18
2013	69476 (-0.25)	66315.98-74402.76	8022 (-2.24)	6800.66-9901.74	23262.25 (5.33)	22939.45-23853.80
2014	68371 (-1.59)	66006.58-74093.36	7168 (-10.65)	6648.17-9679.72	22362.58 (-3.87)	21946.48-22860.83
2015	70077 (2.5)	64403.34-72490.12	7197.99*	5940.43-8649.25*	21657.92 (-3.16)	21143.12-22057.47
2016	71657.09*	67613.70-75700.48*	7228.11*	5495.74-9349.10*	21275.00 (-1.77)	20797.13-21711.48
2017	73169.80*	65761.73-80577.86*	7258.36*	5177.22-9924.28*	21499.46*	19895.91-23103.01*
2018	74646.44*	64200.03-85092.86*	—	—	21641.75*	17186.02-26097.47*
2019	—	—	—	—	21514.57*	14475.25-28553.30*
Seas. R <sup>2</sup>	0.540		0.190		0.189	
R <sup>2</sup>	0.981		0.798		0.991	
RMSE	1999.593		535.268		229.937	
MAE	1472.830		399.822		186.813	
MAPE	3.533		6.907		0.908	
MaxAE	4472.497		1766.166		601.442	
MaxAPE	19.484		21.523		11.028	

Note: \* Forecast value  
 \*\* The employment demand data, of a monthly nature, are summarized as an annual mean.  
 Δ Rate of variation with respect to the previous year  
 CI95% 95% Confidence Interval  
 Source: <sup>a</sup>Ministry of Education, Culture and Sport <sup>b</sup>SEPE (2017)



3,826 in the year of 2014-15. This is an increase of 520 teachers which means an increase of 15.65% between the extreme values of the series. During this period, the average number of teachers stood at 3,745.70 ( $SD = 279.59$ ). The series is non-stationary over time, with no seasonal effects and a growing tendency, with two changes of trend. The regression equation that presented the best goodness of fit ( $R^2=0.70$ ) to the trend was  $PPU(t)=3,264.21+318.77 \ln(t)$  ( $F_{(1,8)}= 18.53; p<0.01$ ).

The student-to-teacher ratio in the public university ranges from 13 to 16 students per teacher, with the average being 14.17

( $SD = 1.00$ ). The average annual rate of change during the decade in relation to the number of university professors in the public university was 1.68%.

**Indicators of academic failure: Ratio students graduated/enrolled between the academic years 2005-06 and 2014-15**

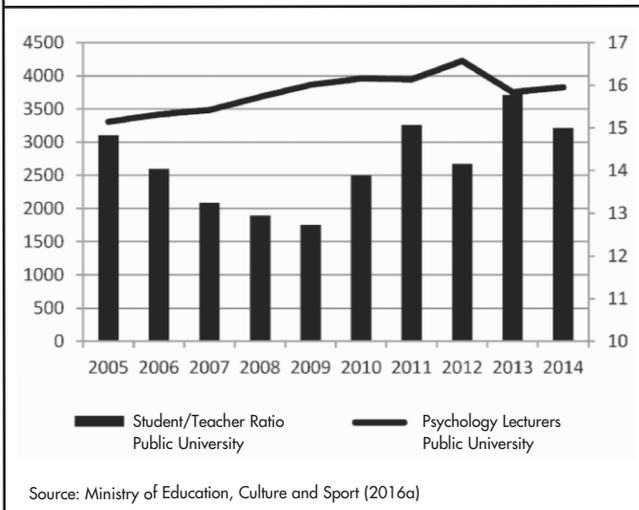
Until the academic year 2014-15, for the total universities, the difference in the ratio of students graduated/enrolled in the extreme years of the series was 0.12, which represents a negative rate of change of -1.24%. The average annual rate of change was -0.83%. In the case of public universities, the ratio was 9.3, exactly the same in both extreme values of the series, with an average annual rate of change of -0.01%. With regards to private universities, the ratio of students graduated/enrolled decreases from 13.23 to 11.05, a rate of change of 16.45% between the extremes of the series; that is, an average annual rate of change of 1.85%. The evolution of the variable in the analyzed decade is shown in Figure 5.

**Labor market: Demand for employment as a psychologist in the State Public Employment Service**

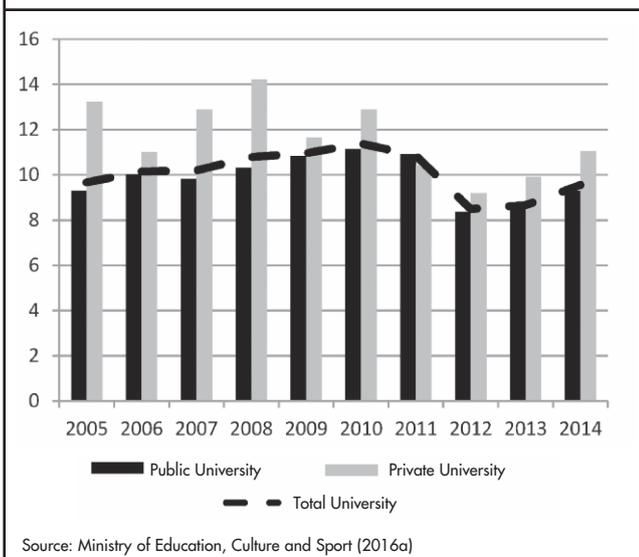
Figure 6 shows the number of people seeking work as a psychologist from September 2009 until the end of 2016, a total of 88 monthly registrations. During this period, the average number of applicants was 20,718.83 ( $SD = 2,372.31$ ). The series starts with 16,534 jobseekers and ends with 21,411 in November 2016, representing a rate of change of 29.49% between the extremes of the series, and an average monthly rate of change of 0.27%. The range of the series has its minimum value in December 2009, with 15,572 jobseekers compared to its maximum of 24,090 jobseekers in September 2013.

As confirmed by the comparison of means using ANOVA and box-plot, the behavior of the series is complex, with a positive trend and greater instability until the end of 2013, a turning point where a downward trend begins which stabilizes around

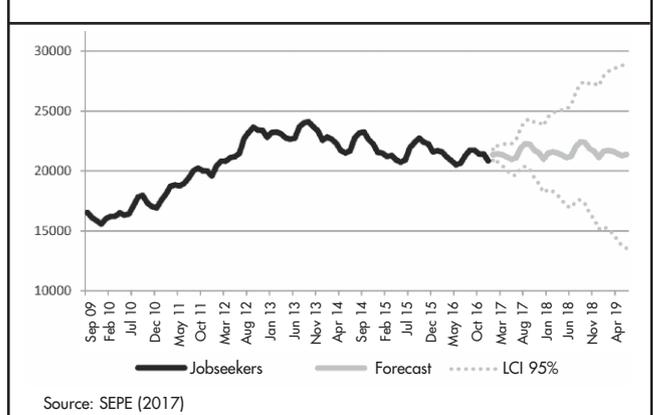
**FIGURA 4**  
**UNIVERSITY TEACHERS AND STUDENT/TEACHER RATIO AT PUBLIC UNIVERSITY**



**FIGURA 5**  
**RATIO STUDENTS GRADUATED / ENROLLED BETWEEN 2005-06 AND 2014-15**



**FIGURA 6**  
**JOBSEEKER PSYCHOLOGISTS FROM SEPTEMBER 2009 TO DECEMBER 2017**





the level of 21,000 job applicants in 2015 and 2016. Compared to the rest of the annual comparisons of the average number of applicants, there were no significant differences in the number of applicants between 2015 and 2016 (Tukey's HSD  $p=0.22$ ). The analysis of seasonality showed a noticeable increase in demand during the summer months (July, August and September). The regression equation that had the best goodness of fit ( $R^2=0.87$ ) with the trend of the series was  $DEP(t)=14,414.76+295.46t-2.61t^2$ .

The prediction model that optimizes the goodness of fit to the time series is the seasonal smoothing of Winters ( $\alpha 0.97$ ;  $\beta 0.06$ ;  $\gamma 0.97$ ). Table 1 describes the proposed forecast model limited, for reasons of space, to the annual means. The model presents a stationary  $R^2$  of 0.19, with a MAPE of 0.91% and a MAxAPE of 3.21%. This model assumes a linear trend and a summative seasonal variation. The forecast, limited to the sixth month of 2019 (when the academic year 2018-19 is due to end), shows a series stabilized around 21,000 job seekers. Figure 6 represents the proposed forecast.

## DISCUSSION

The present study has sought to explore quantitatively the implementation of the set of measures derived from the conclusions listed in the White Paper (ANECA, 2005), as well as to present forecast models based on the trends. In the light of the results, there is a clear discrepancy between what was recommended in the aforementioned document and the measures taken in terms of teaching supply and growth in the number of graduates. In the last decade, marked in economic terms by one of the greatest economic crises in the history of Spain, there has been an increase of more than 26% in the total number of centers where the Degree of Psychology is taught, 130% in those of a private nature, which makes the decade of 2005-15 one of the most fruitful in this regard. Similarly, the number of students enrolled evolved with an annual increase rate of over 2%, over 6% in the case of enrollment in private universities.

Despite the demands of the EHEA, the increase in the teaching staff of the last decade has not improved the indicators of quality in teaching (at least in the public university) nor has it improved those of academic failure. In fact, recent studies confirm that the transition from the old degree (the "Licenciatura" in Spanish) to the new one (the "Grado" in Spanish) neither improves nor worsens the training received (Ramiro-Sánchez, Paz Bermúdez & Buena-Casal, 2016), aspects that question the effectiveness of the change to the EHEA. The behavior of the graduate figures, with a decreasing trend at the beginning of the series, ends the decade with growth rates of over 2%, and close to 8% in private universities, caused by the effect of the elimination of the old degree around the academic year 2011-12. The success of this growth has been such that, in 2014-15, more than 1 in 4 (27.72%) of the students enrolled in any degree attached to the health field were from psychology (Ministry of Education, Culture and Sport, 2016b), a figure that reveals limitations in generalization to the labor market. Currently, the psychologist

jobseekers represent more than three complete generations of graduates. The proposed forecast models anticipate the maintaining of the aforementioned trend: at the end of the current decade, there will be over 75,000 enrollments registered annually, with a series of graduates stabilized around 7,500 annually and jobseekers stabilized around 21,000. This proposal is conservative if we take into account obviated data such as the future incorporation of two new private centers where the Degree of Psychology is taught (Catholic University Santa Teresa de Jesús de Ávila and Universidad Europea Miguel de Cervantes) or the acceleration of the rate of change from the year of the first enrollment on the degree course in 2015-16, which showed an increase of 6.74% (Ministry of Education, Culture and Sport, 2016a). The models improved the fit regarding predictions made based on average measures, however, the behavior of the variables modeled does not allow large numbers in the prediction fit parameters.

This scenario coincides with all of the previous studies carried out, both academic proposals (ANECA, 2005; Gil Roales-Nieto, 2005) and professional ones (Hernández Gordillo, 2003; González-Blanch, 2015). In other words, despite the fact that all sectors are aware of the diagnosis and the proposals for intervention, that is, the reduction of the number of students in order to balance the access to the labor market in the short and medium term, the complicit passivity from the decision makers is moving the situation towards more serious stages. It is worrying that no signs of corrective measures can be seen at present. The proliferation of centers will continue in the short term. The solution proposed by the sectors with greater visibility and ability to exert political pressure, mainly the academic and student sectors, as well as the professional association itself (Psychology Forum Communiqué, 2017; Deans of Psychology Conference of Spanish Universities, 2016, CEP-PIE, 2016, Vera, 2017), requires specific regulations and master's studies for each of the branches of the discipline. We believe that this solution will maintain and even increase the problem in the short, medium and long term.

The last decade shows a commitment to university politics due to the growth of psychology studies. The White Paper links this growth to the demand for study itself, the scarce investment required and the political and social returns in its development. For example, during the recent I Conference of the Division of Clinical and Health Psychology: *Current Situation and Challenges*, organized by the General Council of Psychology, Dr. Núñez Partido, representing the Board of Directors of the Conference of Deans of Psychology of the Spanish Universities, exposed this profitability clearly with the following words: "as students bring in money [...] logically to stop that [the number of students] right now, with this level of demand, would be like trying to close a candy store that is enjoying great success" (see Consejo General de la Psicología [Spanish Psychological Association], 2016, 1:12:41, Núñez Partido, 2016). These words describe a system of university training centered on the consolidation of the power of the psychology faculty itself in the access to resources against internal threats (different faculties



within the same university) and external threats (competition against other faculties of psychology) through increasing the study places available. While the aspiration of any organization to survive in a competitive environment is understandable, the aspiration of growth for growth's sake outside the social responsibility of the university is not. It generates confusion that the university itself understands the problem as alien to the professional dynamic; Dr. Núñez Partido himself adds the following, alluding to the reduction in the number of students using *clausus* numbers: "...it is not reasonable, it is not practical and it does not make sense. This may not benefit the professional groups, but I do not think it would be plausible to stop it..." (Consejo General de la Psicología [Spanish Psychological Association], 2016, 1:13:00).

Recently, Terry Eagleton (2017) describes the process of global decadence of universities as one of the momentous events of our time. This author points to the transition of universities from centers of human criticism to mere market bodies valued according to the economic impact their activity generates (pp.168-169). These conditions impose a basic function of economic support to the role of the students themselves. Growth such as that analyzed, describes a commercialized university system that runs the risk of moving away from the pursuit of knowledge, excellence, and research, ultimately distorting the professional development that justifies its existence. This hypertrophy needs to incorporate progressively more students in order to maintain the economic dynamic, crystallizing in a decadent functioning that jeopardizes the real professional demand that is not proportionate and puts the discipline itself at risk of collapse.

The university, therefore, seems to assume a split vision between the formative and professional aspects that compromises the development of the discipline as a whole, acting as a "generator of conflicts" (Carrobles, 2015; González-Blanch, 2015; Prado-Abril, Sánchez-Reales, & Aldaz-Armendáriz, 2014; Sánchez-Reales, Prado-Abril, & Aldaz-Armendáriz, 2013). This is also fueled by a frequent discourse in university and collegiate forums that conveys distorted expectations about the labor market and the possibilities of insertion into it, along with the devaluation of the qualification of Specialist in Clinical Psychology – a qualification which, we must remember, is obtained outside the university context, through the system of residence in the Spanish National Healthcare System, with an employment contract and financial remuneration– at the same time masking the limitations of the degree listed in the White Paper itself (ANECA, 2005; Almendros et al., 2017; Molins, 2017; Infocop, 2017). From our point of view, we understand it is a priority to manage the students' expectations in accordance with the reality, the development of competencies and their fitting into the labor market as basic and relevant variables in the composition of a university educational supply of quality, that is moral and ethical for the society in which the graduate will be inserted.

However, we must recognize the intrinsic value of the degree

itself, independent of variables such as the real demand in the labor market or with respect to the economic compensation of practice in comparison with professions that require the same or even a lower level of training (Instituto Nacional de Estadística [National Institute of Statistics], 2015). Proof of this is that the decade under review has intensified the growth of the private university sector in psychology to more than double its size. Currently, the demand for the psychology degree continues to exceed the educational supply, generating the conditions for a broad market that guarantees to cover the places offered, a fundamental motivation that attracts the participation of private initiatives. Rather than self-interest, we understand that any decision of a part of the profession that affects other areas of the discipline, must be considered and agreed with all of the agents participating in it. Any alternative to this solution generates imbalances that jeopardize the general health of psychology.

At present, these imbalances are represented in the asymmetric growth of the different branches of the profession. For example, between academic years 2005-06 and 2014-15, the teaching staff in public universities increased by 520 teachers, to a total of 3,826, while the Spanish National Health System, which serves the global population of Spain, only trained 1,213 residents in clinical psychology, of whom only a little over 50% will have served in public healthcare 3 years after completing the specialty (Ministry of Health, Social Services and Equality, 2014). The academic prosperity described, in a scenario of constant regulations of the professional practice has given rise to confrontations between sectors of psychology over competencies and fields of activity in which a complementary investment in training is necessary in order to aspire to labor insertion. Beyond the specific weight of the teaching sector in political and decision-making bodies (a high percentage of the members of the Spanish Psychological Association Board have links with university institutions), this situation reinforces the training and academic arena as one of the main sources of job opportunities. The excess of professionals and the incipient intrusiveness with regards to the professional regulations complete a professional panorama that is frankly decomposing, in which the immediate consequences are precarious work and the denigration of the meaning of what it is to be a psychologist. These data are not tolerable at all for a discipline that aspires to attain social recognition. It should be noted, however, that the establishment of "numerus clausus" in psychology studies to regulate the educational supply, as is already happening for example in the field of medicine, would clash with the view of a part of society that believes that closing these accesses goes against the citizens' right to training and that university policies should not be governed by the design of the labor market. This question undoubtedly underscores the need to initiate a thorough debate in the profession that brings together both positions; in other words, both the right to the training for citizens and the right to decent work for psychology professionals.

Among the limitations of the present study is the quality of the



data used in the variable people seeking employment as a psychologist. We are aware that it is not an exhaustive variable, in the sense that not all the people who attain their professional qualification seek to work in official institutions. We have collected accessible data offered by the public institutions, so the calculation of the predictions must be understood as an approximation to the real picture rather than a reflection of the situation. On the other hand, it should be noted that the behavior of the variables analyzed here may be influenced by various external political, administrative or social factors that have not been taken into account. For example, this work has not examined the evolution of other university degrees as a consequence of the process of decentralization of the educational competences to the autonomous communities, nor of the process of adaptation to the EHEA.

### CONCLUSIONS

The analysis of the White Paper, in spite of the passage of time, offers contemporary conclusions and proposals in the face of the repetition of a situation that, far from having improved, has worsened. Faced with this dynamic, we ask ourselves why some of the proposals in the text have been followed strictly while others have been systematically ignored. Exploring in greater depth the beneficiaries of the situation may help to clarify where the responsibilities lie.

As exposed in another study (Fernández-García, Sánchez-Reales, Prado-Abril, Carreras, Gimeno-Peón & Bermúdez-Míguez, 2017), the wealth management and multi-functionality of psychology reveal themselves as controversial issues that are difficult to handle. One of the greatest riches of the discipline lies in the interest of our culture in behavior, which makes the degree in psychology a very common personal and professional aspiration. If we take into account the low cost of the investment needed, training in psychology yields political, financial and social return, proof of this is the scarcity of universities that lack a faculty of psychology. On the other hand, the labor market presents radically opposite indicators regarding its functioning, a total number of job seekers that is more than three full years of graduates make an initially attractive choice a source of frustration and desperation, for many, chronic in nature. We wish to debate the scope of the numbers, not forgetting that there are people behind the figures. It is not possible to create a solution to the situation that does not contemplate the commitment of all of the sectors of the discipline towards a sustainable proposal for the profession. The synergies arising from the excessive growth of the training sector now give rise to pressure lobbies that jeopardize this sustainable development and the internal balance. An educational bubble is being built up that devalues the qualification itself, where the alternative is to obtain more qualifications to differentiate oneself from the other aspirants, sketching a lucrative business of despair.

### CONFLICT OF INTERESTS

There is no conflict of interest

### REFERENCES

- Agencia Nacional de Evaluación de la Calidad y Acreditación [National Agency for Quality Assessment and Accreditation] (2005). *Libro Blanco del Título del Grado en Psicología*. [White Paper of the Degree in Psychology] Retrieved on 15 December 2016, from [http://www.aneca.es/var/media/150356/libroblanco\\_psi\\_cologia\\_def.pdf](http://www.aneca.es/var/media/150356/libroblanco_psi_cologia_def.pdf)
- Almendros, C., Carrobes, J.A., Costa, M. Godoy, J.F., López, E., Olivares, J... Vallejo, M.A. (November 2016). *Consideraciones sobre la propuesta de Itinerario secuenciado: Grado en Psicología + Master PGS + PIR* [Considerations on the proposal of sequenced Itinerary: Degree in Psychology + Master PGS + PIR.]. Seminario Interuniversitario para el Progreso de la Psicología y la Calidad de la Atención Psicológica. Facultad de Psicología de la Universidad Autónoma de Madrid. [Interuniversity Seminar for the Progression of Psychology and the Quality of Psychological Care. Faculty of Psychology of the Autonomous University of Madrid.] Retrieved on 11 March 2017, from <http://www.infocop.es/pdf/ConsideracionesitinerarioSIPPC-AP2017.pdf>
- Billah, B., King, M.L., Snyder, R.D., & Koehler, A.B. (2006). Exponential smoothing model selection for forecasting. *International Journal of Forecasting*, 22(2), 239–247.
- Box, G.E.P., Jenkins, G.M., & Reinsel, G.C. (2008). *Time series analysis: forecasting and control*, (4<sup>th</sup> Ed.). New Jersey: Wiley.
- Carrobes, J. A. (2015). Presente y futuro de la Psicología Clínica y Sanitaria en España: Una visión alternativa [The Present and Future of Clinical and Health Psychology in Spain: An Alternative View]. *Papeles del Psicólogo*, 36, 19–32.
- CEP-PIE (2016). *Comunicado del colectivo de estudiantes de psicología sobre defensa del itinerario Grado-PIR* [Communication of the psychology students' collective on the defense of the psychology degree-PIR residents' training route]. Retrieved on November 14, 2016 from: <http://www.cep-pie.org/wp-content/uploads/2012/07/Ratificaci%C3%B3n-del-Comunicado-del-CEP-PIE-sobre-defensa-Grado-PIR.pdf>
- Comunicado del Foro de la Psicología [Communication from the Forum of Psychology] (January 26, 2017). *Infocop*. Retrieved on February 20, 2017 from: [http://www.infocop.es/view\\_article.asp?id=6626&cat=9](http://www.infocop.es/view_article.asp?id=6626&cat=9)
- Conferencia de Decanos de Psicología de las Universidades Españolas [Conference of Deans of Psychology of the Spanish Universities], (2016). Conclusiones/Acuerdos. Reunión Ordinaria de la Conferencia de Decanos de Psicología [Conclusions/Agreements. Ordinary Meeting of the Conference of Deans of Psychology]. Madrid, 17 and 18 November 2016. Retrieved on November 27, 2016 from: [http://www.cdpue.es/wp-content/uploads/2016/03/16-11-17\\_18-Madrid-Acuerdos-CDPUE.pdf](http://www.cdpue.es/wp-content/uploads/2016/03/16-11-17_18-Madrid-Acuerdos-CDPUE.pdf)
- Consejo General de la Psicología [General Council of Psychology],



- (November 8, 2016), (*Roundtable: The health training of psychology professionals* [video archive]. Retrieved from <https://www.youtube.com/watch?v=sB9pWCvS3YY&t=1s>
- Eagleton, T. (2017). *Cultura* [Culture]. Barcelona: Taurus.
- Fernández-García, X., Sánchez-Reales, S., Prado-Abril, J., Carreras, B., Gimeno-Peón, A., & Bermúdez-Míguez, S. (2017). Nuevas controversias en Psicología Sanitaria: Un análisis libre de ruido [New controversies in Healthcare Psychology: An analysis that is noise-free]. *Behavioral Psychology/Psicología Conductual*, *25*, 189-200.
- Freixa, M. (2005). El espacio europeo de Educación Superior en Psicología: Memoria de los inicios de un proceso [The European space of Higher Education in Psychology: A report on the beginnings of a process], *Anuario de Psicología*, *36*, 225-229.
- Gardner, E.S. (1985). Exponential smoothing: the state of the art. *Journal of Forecasting*, *4*(1), 1-28.
- Gardner, E.S., & Dannenbring, D.G. (1980). Forecasting with exponential smoothing: some guidelines for model selection. *Decision Sciences* *11*(2), 370-383.
- Gil Roales-Nieto J. (2005). Los estudios universitarios de Psicología en España. Análisis de su distribución geográfica, de la relación oferta-demanda y de la movilidad del alumnado [The university studies of Psychology in Spain. An analysis of their geographical distribution, the supply-demand ratio and student mobility]. *International Journal of Psychology and Psychological Therapy*, *5*, 265-308.
- González-Blanch, C. (2015). La Psicología Clínica después de la Psicología General Sanitaria en España: Una propuesta razonada [Clinical Psychology after the PGS (General Healthcare Psychology) in Spain: A Reasoned Proposal]. *Papeles del Psicólogo*, *36*(1), 9-18.
- Hernández Gordillo, A. (2003). Los estudios universitarios de psicología en España. Evolución de centros, alumnos y relación oferta-demanda [The university studies of psychology in Spain. The evolution of centers, students and the supply-demand relationship]. *Papeles del Psicólogo*, *86*, 13-24.
- Hyndman, R.J., & Athanasopoulos, G. (2013). *Forecasting: principles and practice* (2013). <https://www.otexts.org/book/fpp>. Accessed 19 Nov 2014
- Infocop (10 March 2017). Aclaraciones del decano del COP Cataluña al artículo "El psicólogo en el diván" [Clarifications from the Dean of the Catalan Psychological Association to the article "The psychologist on the couch"]. Retrieved on March 11, 2017 from [http://www.infocop.es/view\\_article.asp?id=6694](http://www.infocop.es/view_article.asp?id=6694)
- Instituto Nacional de Estadística [National Institute of Statistics] (2012). *Estadística de enseñanza universitaria* [University teaching statistics] [Database]. Retrieved on February 2, 2017, from [http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736176744&menu=resultados&idp=1254735573113](http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176744&menu=resultados&idp=1254735573113)
- Instituto Nacional de Estadística [National Institute of Statistics] (2015). *Encuesta de inserción laboral de titulados universitarios* [Labor insertion survey of university graduates] [Database]. Retrieved 20 February 2017 from [http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736176991&menu=ultiDatos&idp=1254735976597](http://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176991&menu=ultiDatos&idp=1254735976597)
- Ministerio de Educación, Cultura y Deporte [Ministry of Education, Culture and Sport] (2016a). *University statistics* [Database]. Retrieved on February 2, 2017, from <http://www.mecd.gob.es/educacion-mecd/areas-educacion/universidades/estadisticas-informes/estadisticas.html>
- Ministerio de Educación, Cultura y Deporte [Ministry of Education, Culture and Sport] (2016b). *Serie de estudiantes. Evolución de los estudiantes matriculados y egresados por titulación. Cursos 2008 a 2015* [Students' series. Evolution of students enrolled and graduated by degree. Courses 2008 to 2015] [Database]. Retrieved on February 2, 2017, from <http://www.mecd.gob.es/servicios-al-ciudadano-mecd/estadisticas/educacion/universitaria/estadisticas/alumnado/Series.htm>
- Ministerio de Sanidad, Servicios Sociales e Igualdad [Ministry of Health, Social Services and Equality], (2014). *Estudio sobre la evolución laboral de los especialistas egresados de la Formación Sanitaria Especializada entre 2009 y 2012* [Study on the labor evolution of the specialists graduated from the Specialized Healthcare Training between 2009 and 2012]. Retrieved on February 20, 2017 from: <http://www.mecd.gob.es/servicios-al-ciudadano-mecd/estadisticas/educacion/universitaria/estadisticas/alumnado/Series.htm>
- Molins, A. (21 February 2017). El psicólogo en el diván [The psychologist on the couch]. *La Vanguardia*. Retrieved on 11 March 2017 from <http://www.lavanguardia.com/edicion-impresa/20170221/42187330955/el-psicologo-en-el-divan.html>
- Núñez Partido, P. (October, 2016). In Santolaya Ochando, F. (Presidency). *La formación sanitaria de los profesionales de la Psicología* [The training of psychology healthcare professionals]. Mesa redonda llevada a cabo en la I Jornada de la División de Psicología Clínica y de la Salud: Actualidad y retos [Round table held at the 1st Conference of the Division of Clinical and Health Psychology: Current Events and Challenges]. Madrid, Spain.
- Prado-Abril, J., Sánchez-Reales, S., & Aldaz-Armendáriz, J. A. (2014). Psicología sanitaria: En busca de identidad [Health psychology: In search of an identity]. *Behavioral Psychology/Psicología Conductual*, *22*, 153-160.
- Ramiro-Sánchez, T., Paz Bermudez, M. P., & Buela Casal G. (2016). Titulación de Psicología en el EEES: comparación entre licenciados y graduados españoles [The degree of Psychology in the EHEA: A comparison between Spanish graduates of the old and new degrees]. *Revista de Psicodidáctica*, *21*, 175-189.
- Sánchez-Reales, S., Prado-Abril, J., & Aldaz-Armendáriz, J. A.



- (2013). Psicología Clínica y Psicología General Sanitaria: Una aproximación constructiva [Clinical Psychology and General Healthcare Psychology: A Constructive Approach]. *Behavioral Psychology/Psicología Conductual*, 21, 189–200.
- Sardiña, J. (November 2014). Series de datos de Psicología. Poster presentado en las XIX Xornadas da sección de Psicoloxía e Saúde do Colexio Oficial de Psicoloxía de Galicia: "Xénero e identidade: olladas desde a clínica". Colexio Oficial de Psicoloxía de Galicia. [Psychology data series. Poster presented at the XIX Conference of the Psychology and Health section of the Psychological Association of Galicia: "Gender and identity: A look view the clinical field". Official College of Psychology of Galicia.] Pontevedra.
- SEPE (2017). *Información mensual de mercado de trabajo de titulados universitarios [Monthly information on labor market of university graduates]* [Database]. Retrieved on 2<sup>nd</sup> February, 2017, from <http://www.sepe.es/indiceTitulaciones/indiceTitulaciones.do?ti-po=titulados&idioma=es>
- SPSS Inc. (2008). *SPSS Statistics for Windows, Version 17.0*. Chicago: SPSS Inc.
- Stelzner, M. (2007). *Writing White Papers: How to capture readers and keep them engaged*. Poway, California: WhitePaperSource Publishing.
- UK Parliament, (2016). White Papers - Glossary page. Retrieved on 15 December 2016 from <http://www.parliament.uk/site-information/glossary/white-paper/>
- Vera Martínez, M.M. (10 March 2017). In Quintana, M. (Presidency). *Acreditación en Neuropsicología Clínica y Ejercicio Profesional [Accreditation in Clinical Neuropsychology and Professional Practice]*. Mesa llevada a cabo en el IX Congreso Nacional de Neuropsicología: Red de Redes [Panel held at the IX National Congress of Neuropsychology: Network of Networks]. Barcelona, Spain.

