



ORIGINAL ARTICLE

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Receipt: 01/14/2015 **Revised:** 01/23/2015
Acceptance: 01/28/2015 **Online:** 01/28/2015

Evolution of the application process to Dentistry in universities taking part in the Prueba de Selección Universitaria (PSU). Chile, 2012-2014.

Abstract: Objective: To describe the distribution of applicants and their scores on the PSU (*Prueba de Selección Universitaria*, University Selection Test) for admission to dental schools in Chilean universities using the PSU test for their application process from 2012 to 2014. Methodology: A descriptive study based on the records of applicants for dentistry programs in universities using the PSU test for their admissions from 2012 to 2014. Results: The analysis included 14 universities and 18 programs (campuses). Ten were private and 8 traditional. For all the programs, the number of applicants had decreased, but the higher proportion was concentrated in 3 universities in Santiago. The University of Talca was the only that showed an increase in the number of applicants per quota. There was a difference of more than 100 points in the average scores for selection between the universities. The traditional universities and those in the capital city presented higher scores. Conclusions: The decrease of postulants affects all dentistry programs; however, the rate of applicants per quota is variable. Centralization of the best entry scores is in the capital city.

Keywords: *Students, Dental, Chile, Career Choice, School Admission, ranking.*

DOI: 10.17126/joralres.2015.011

Cite as: Espinoza L. Evolution of the application process to Dentistry in universities taking part in the Prueba de Selección Universitaria (PSU). Chile, 2012-2014. *J Oral Res* 2015; 4(1):51-57.

INTRODUCTION.

Higher education enrollment has grown exponentially in the past three decades in Chile¹. This situation has not been different in the case of dentistry, specifically with increases in excess of 600% in the past 15 years². On the other hand, in the rest of Latin America, while the growth has been less than in the Chilean case, it has not ceased to present high rates and undesirable consequences that are in full swing³.

This seems to be a consequence of the commodification of university education^{4,5}, which lets the principles of supply and demand influence the planning of the labor force formation, in a field with significant as-

ymmetries of information that have caused undesirable consequences in the quality and costs of higher education⁵. Against this backdrop, it is common that a desirable commodity, such as dentistry career⁶, entails a high demand by young people and there is an offer in the education market to satisfy them.

However, the same professional saturation³ is creating unemployment and low salaries that have an impact on the desirability of the program. The analysis of the applications and scores on the PSU during 2012 - 2014⁷ showed that there is a marked decrease (greater than 40%) of applicants to dental schools in universities using the PSU for their admission process. Besides,

entry scores are lower, especially in private universities, which also accounts for the loss of interest in studying dentistry.

Despite the usefulness of the data previously reported⁷, the general and group trends (traditional versus private) could be masking the particular situation of various universities or even the same university with different campuses (capital city and regions). This situation prevents a detailed and comprehensive assessment of applications and entry to schools of dentistry in Chile.

The objective of this research is to describe the distribution of applicants and their scores on the PSU test for admission to study dentistry in Chilean universities using the PSU for their admission process during 2012 - 2014.

MATERIALS AND METHODS.

This corresponds to a secondary analysis of a previously published study⁷ at the national level. It is a descriptive study based on the records of applicants for dentistry programs in universities using the PSU for their admissions process during 2012, 2013 and 2014.

The records were obtained from the following web site: www.teampsu.com.

In this second part, the analysis per university was repeated at the national level in 2 stages⁷. In the first one, all postulants were included and the universities which did not have data for the entire period of analysis were excluded (Universidad Arturo Prat and Universidad de La Serena). The following variables were analyzed:

- Total applicants (TA): total number of applicants to all the programs.
- Quantity of quotas (QQ): offered vacancies for each program.
- First selection quotas called (S1): Number of successful applicants.
- First selection Offset (O1): quotient between S1 and QQ.
- Applicants per quota (AP): quotient between TA and QQ.
- University: Identification for each campus.
- Year: corresponding to the admission process, not for taking the PSU test.

Table 1. Universities offering dentistry and using the PSU for application, Chile. 2012-2014.

University	Program Code	Region	Type
U. de Chile (UCH)	11095	13	Traditional
Pontificia U. Catolica de Chile (PUC)	12056	13	Traditional
U. de Concepcion (UDECC)	13091	8	Traditional
U. Universidad Austral de Chile (UACH)	17089	14	Traditional
U. de Valparaiso (UVAL)	19050	5	Traditional
U. de Antofagasta (UANT)	24048	2	Traditional
U. de La Frontera (UFRO)	30033	9	Traditional
U. de Talca (UTAL)	34023	7	Traditional
U. Diego Portales (UDP)	38171	13	Private
U. Mayor (Santiago) (UMAY)	39122	13	Private
U. Mayor (Temuco) (UAMY9)	39415	9	Private
U. Finis Terrae (UFT)	40080	13	Private
U. Andrés Bello (Santiago) (UNAB)	41060	13	Private
U. Andrés Bello (Viña del Mar) (UNAB5)	41099	5	Private
U. Andrés Bello (Concepcion) (UNAB8)	41127	8	Private
U. de Los Andes (UAND)	43018	13	Private
U. del Desarrollo (Santiago) (UDD)	44021	13	Private
U. del Desarrollo (Concepcion) (UDD8)	44036	8	Private

The second stage included only to the postulants C1, analyzing the following variables:

- University: Identification for each of the campuses.
- Year: corresponding to the admission process, not for taking the PSU test.
- Entry scores (ES): The weighted score of each application.

Data were tabulated in a form of MS Excel 2003 (Microsoft Corp., Redmond, USA) and analyzed using STATA 13/SE (STATA Corp., Texas, USA). Descriptive statistical analysis was carried out including frequencies, ranges (minimum and maximum) and percentiles (p25, p50 and p75) per university.

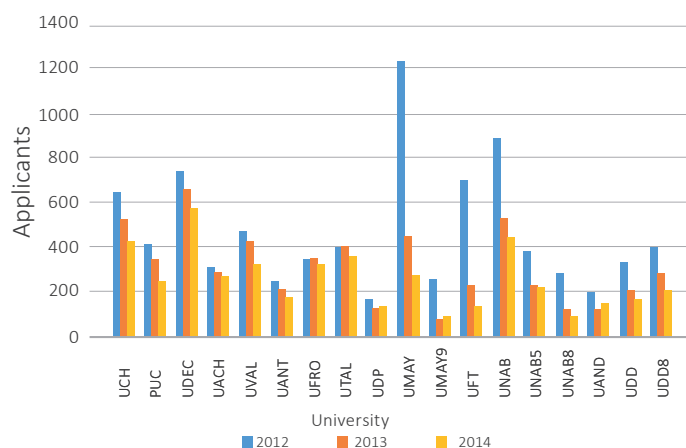
RESULTS.

A total of 14 universities and 18 programs (campuses) were included (Table 1). From them, 10 were private and 8 traditional. Traditional universities are those founded before 1981 and private universities were founded later².

Figure 1 shows the evolution of candidates for various universities in the period analyzed. Figure 2 shows the amount of first selected applicants. In Figure 3 the offset of applicants can be seen and in Figure 4, the amount of applicants for each available quota.

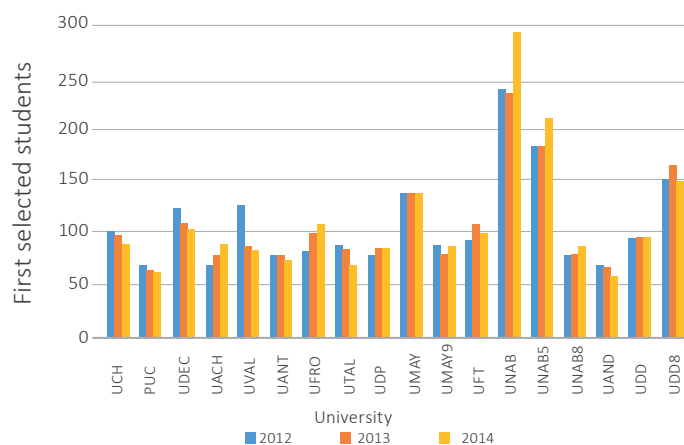
Figure 5 shows the distribution (extreme values and quartiles) of the PSU scores sorted from highest to lowest according to the average numbers of the 3 years analyzed.

Figure 1. Evolution of applicants to dentistry at universities using the PSU, Chile. 2012-2014.



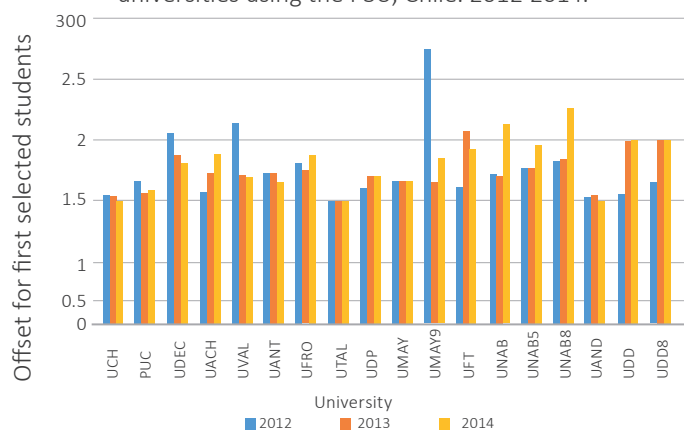
* University codes include number only for regional campuses.

Figure 2. Evolution of first selected students for dentistry at universities using the PSU, Chile. 2012-2014.



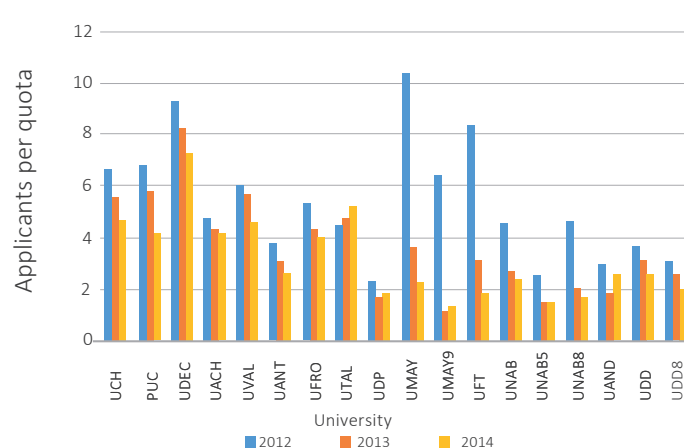
* University codes include number only for regional campuses.

Figure 3. Offset for first selected for Dentistry in universities using the PSU, Chile. 2012-2014.



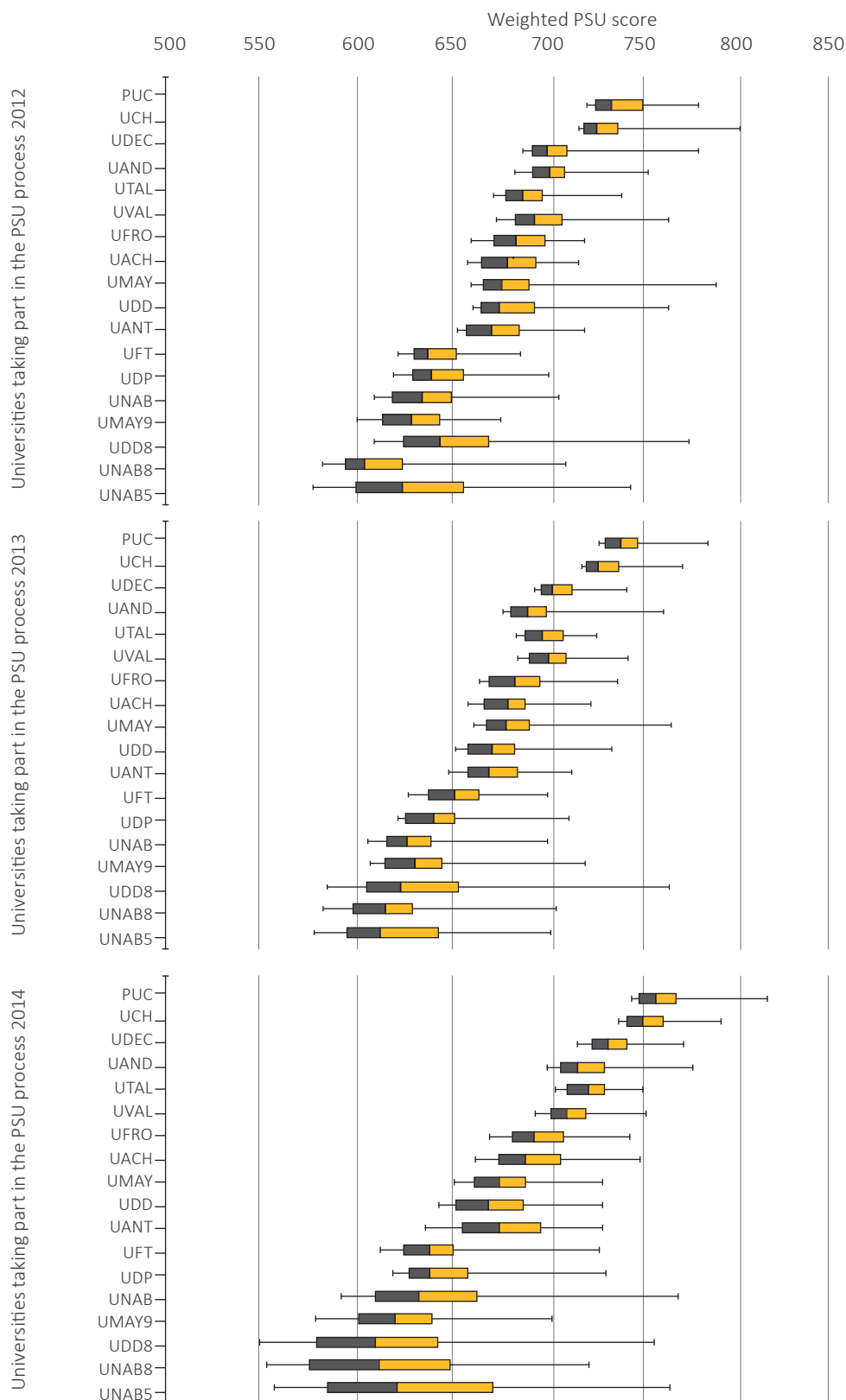
* University codes include number only for regional campuses.

Figure 4. Applicants per quota for Dentistry in universities using the PSU, Chile. 2012-2014.



* University codes include number only for regional campuses.

Figure 5. Distribution of PSU scores of the first selected students for Dentistry in universities using the PSU, Chile. 2012-2014.



* University codes include number only for regional campuses.

DISCUSSION.

The results of the second part of this research partially corroborate the overall results already published⁷. It is possible to see that some parameters follow the general trend but to a different extent, while it is the opposite for others. In particular, the number of applicants was reduced in all the programs, but the rest of the application parameters are variable. Regarding entry scores, there is not an absolute superiority of the traditional universities, but there is a centralization phenomenon.

In the case of the number of applicants, while the reduction affects all universities, not all of them are affected in the same proportion. The more notorious decreases, which explain much of the decline of applicants for the entire group of universities, are given by U. Mayor U. Finis Terrae and U. Andrés Bello; all of them at their campuses in Santiago. Explaining this situation exceeds the objectives of this research; but, considering how the university market works⁵, it could be hypothesized that these universities have lost brand positioning compared to the traditional options (P. U. and Católica and Universidad de Chile) and the selective private by PSU score (U. de los Andes) in the capital city. It is important to continue assessing variation in the number of applicants, because if it keeps decreasing, many universities would not have students to fill their available quotas.

In regards to first selected applicants, variations are mixed. These numbers have decreased or kept being the same in most of the universities, but there are exceptions, such as the U. Austral and the U. de la Frontera, that have a clear tendency to increase the number of first selected applicants. However, to better understand this variable, it is necessary to consider the offset.

This study considers the offset variable to give account of the attractiveness of careers for those first selected applicants. In other words, if the career is highly desirable, the selected students will not reject their seat and therefore the university will select a quantity similar to their available quotas (low offset). But in the case that the career is not very attractive, many selected students

will not take the seat and therefore the university will need to call a much higher number than the available quotas with the aim of filling them (high offset).

Taking this into account, 2 groups of universities and an exception can be identified. Starting with the latter, it is possible to see that U. Mayor presented a marked decrease in Temuco between 2012 and 2013, then, and increase in 2014. This does not seem to be representative of any other university analyzed. The rest of the careers can be divided into a first group of universities that increase their offset in a relatively consistent manner in the period under analysis (they probably become less attractive) and a second group that consistently decreases its offset (acquire desirability).

These “desirable” universities represent the more selective ones in terms of scores (P. U. Católica, U. de Chile, U. de Concepción, U. de Los Andes and U. de Valparaíso). Considering the concept of attractiveness or desirability mentioned here, the conditions of the university market⁸ and the motivations for studying dentistry⁶, it would be expected to confirm the desirability of certain universities equals salary distribution among Chilean professionals⁹.

Notwithstanding, it should not be ignored that a single indicator is insufficient for a complete description of the situation. This takes particular importance in the case of U. de Talca, since, although its total number of postulants has decreased and the offset has been kept, it has consistently increased the number of candidates per quota and their scores. Thus, it can be considered this university has gained desirability in dentistry.

An analysis of the distribution of PSU scores corroborates the above in relation to the positioning of various Chilean universities and the career of dentistry. Also, in the local literature, there is evidence that helps to understand this situation, specifically concerning the university market segmentation¹⁰ based on tuition and entry scores. However, dentistry presents certain nuances since there are universities with high fees both in the selective as non-selective extremes. This situation is in-

fluenced by several factors that go beyond the objectives of this research.

Ignoring tuition fees, score analysis allows us to observe a segmentation of various universities, but the limits are diffuse and division is arbitrary. However, considering related literature^{9,10}, it is possible to provisionally propose 3 groups of universities in the career of dentistry:

- Highly selective, with cutoff scores over 680 points and the average exceeding 700 points. This group would be formed by P. U. Católica, U. de Chile, U. de Concepción and U. de Los Andes.
- Moderately selective, with scores that, in general, have an interquartile range between 600 and 700 points.
- Non-selective, with scores that, in general, have an interquartile range under 600 points.

There is also another phenomenon: centralization of the best scores. Three of the 4 more selective programs are in Santiago, but also universities with campuses in Santiago and regions have the best scores in the capital city without exception. This situation would also be

expected considering the concentration of schools with better performance in the capital¹¹.

The results of this research allow to better understand dental education in Chile, but it only provides information for the beginning of the process. There are a number of factors that affect during the 6 years of university training that must be investigated. One of these factors is the guidance and scientific productivity of the dental programs. In this respect, Uribe *et al.*¹² shows that the new dentistry programs offered recently have not contributed to scientific productivity of the Chilean dentistry and hence the education of future dentists at all. When comparing the results of this study with those of Uribe *et al.*¹², the relationship between selectivity and academic scientific productivity is not surprising, but there are concerns about the situation of the non-selective dentistry programs.

Dentists' training is and will continue going through major changes in Chile, so further investigation on the factors influencing at the beginning and during university training, as well as future Chilean dentists' quality is required as it is done in other countries¹³.

Evolución del proceso de postulación a Odontología en Universidades adscritas a la Prueba de Selección Universitaria (PSU). Chile, 2012-2014.

Resumen: Objetivo: Describir la distribución de los postulantes y sus puntajes en la Prueba de Selección Universitaria (PSU) de ingreso a odontología entre las universidades chilenas adscritas al proceso PSU durante los años 2012 a 2014. Metodología: Estudio descriptivo a partir de los registros de postulantes a las carreras de odontología entre las universidades adscritas al proceso PSU en las admisiones 2012 a 2014. Resultados: El análisis incluyó a 14 universidades con 18 carreras (sedes), 10 privadas y 8 tradicionales. Todas las carreras presentaron

disminución de los postulantes, pero la mayor proporción se concentra en 3 universidades de Santiago. Solo la U. de Talca presentó un aumento en la tasa de postulantes por cupo. Existe una diferencia superior a 100 puntos entre la media de puntajes de selección entre las universidades, siendo las tradicionales y de la capital quienes presentan los puntajes más elevados. Conclusiones: La disminución de postulantes afecta a todas las carreras de odontología, sin embargo la tasa de postulantes por cupo es variable. Se observa una centralización de los mejores puntajes de ingreso en la capital.

Palabras clave: *Estudiantes de odontología, Chile, elección de carrera, admisión universitaria, ranking.*

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