

# Relationship between participation in a transition program and permanence in students at a private university of Lima

Héctor Viale-Tudela<sup>1</sup>; Enit Huaman-Cotrina<sup>2</sup>; Reyna Rojas<sup>3</sup>

<sup>1,2,3</sup>Universidad Peruana de Ciencias Aplicadas, Lima Perú <sup>1</sup><https://orcid.org/0000-0003-4086-499X> [hector.viale@upc.pe](mailto:hector.viale@upc.pe), <sup>2</sup><https://orcid.org/0000-0003-3659-0332>, [enit.huaman@upc.pe](mailto:enit.huaman@upc.pe), <sup>3</sup><https://orcid.org/0000-0002-7238-9604> [reyna.rojas@upc.pe](mailto:reyna.rojas@upc.pe)

**Cite as:** Viale-Tudela, H., Huaman-Cotrina, E., Rojas-Reyes, R. (2024). Relationship between participation in a transition program and permanence in students at a private university of Lima. *Revista Digital de Investigación en Docencia Universitaria*, 18(1), e1725. <https://doi.org/10.19083/ridu.2024.1725>

**Received:** 15/11/2022. **Revised:** 04/04/2023. **Published:** 30/01/2024.

## Abstract

**Introduction:** Will identify the relation generated by participation in a transition program carried out between the end of secondary school and the beginning of higher education with the permanence of first-year students in university. **Method.** This research is quantitative, longitudinal, non-experimental, with a descriptive and correlational scope. The study is based on a census and the analyzed population is made up of 15710 first-year students from a private Peruvian university. Statistics, such as Chi Square, were used to determine the association or independence of two quantitative variables with a 5% degree of significance. The effect was measured using the V-Cramer statistic. **Results.** In the seven-year period analyzed there is a statistically significant difference in the student permanence variable in favor of the group of students who attended the transition program. **Discussion.** These findings confirm that it can be stated that transition programs of academic nature contribute to the permanence of university students.

**Keywords:** Academic Persistence, Dropouts, Dropout Research, Educational Attainment, College Students

## Relación entre la participación en un programa de transición y permanencia en estudiantes de una universidad privada de Lima

### Resumen

**Introducción:** Se identificará la relación que existe entre la participación en un programa de transición que se lleva a cabo entre la educación secundaria y la educación superior con la permanencia de los alumnos de primer ingreso a la universidad. **Método.** La investigación es cuantitativa, longitudinal, no experimental, hipotético-deductivo con alcance descriptivo y correlacional. El estudio es censal y la población analizada está compuesta por 15710 alumnos de primer ingreso de una universidad particular de Lima (Perú). Se aplicaron estadísticos como Chi Cuadrado para determinar la asociación o independencia de dos variables cualitativas a un nivel de significación de 5%. Se midió el efecto a través del estadístico de V-Cramer. **Resultados.** En los siete años analizados existe una diferencia estadísticamente significativa en la variable de la permanencia estudiantil a favor del grupo de estudiantes que cursó el programa de transición. **Discusión.** Estos hallazgos confirman que un programa de transición de corte académico contribuye con la permanencia estudiantil universitaria.

**Palabras clave:** Persistencia Académica, Deserción, Investigación en Deserción, Logro Educativo, Estudiantes Universitarios

### \*Correspondence:

Héctor Viale-Tudela  
[hector.viale@upc.pe](mailto:hector.viale@upc.pe)



## Introduction

University student dropout affects practically all universities in the world. High dropout rates have a negative impact on both the budget of educational institutions and the future employment of their students (Tan & Shao, 2015), so it is very important for universities to work on programs that lead to lower dropout rates. However, before implementing any transition program to improve student retention in the university, it is necessary to recognize the causes of student dropout in order to understand them and address them proactively (Patiño & Cardona, 2012).

There are several authors who, in recent decades, have conducted research on university student dropout. In order to reduce its impact and address it correctly, this fact has been studied from different points of view (Da Costa et al., 2018). Among the main causes of dropout that these authors point out, we can mention low quality of teaching, economic difficulties, and low grades (Dapelo Pellerano & Matus Jara, 2013; Gairín et al., 2009; Villamizar & Romero, 2011), but also, causes referred to ethnicity (Hu & St. John, 2001), gender (Severiens & Dam, 2012), family background (Aina, 2013), academic history, and integration and adaptation to the university (Arias Ortiz & Dehon, 2013; Gairín et al., 2009; Patiño & Cardona, 2012), among other causes. On the other hand, it should be noted that, according to a study carried out by Da Costa et al. (2018), age, marital status, program of enrollment, and school of origin do not influence students' decision to leave the university.

To facilitate the study and analysis of the causes of university student dropout, Munizaga Mellado et al. (2018) indicated that the variables associated with dropout can be grouped into five major groups: *individual*, *economic*, *cultural*, *institutional*, and *academic*. It is in these last two that the university can intervene to assist new students. Taking the above as a reference, this research focuses on analyzing how academic intervention during the transition stage is favorably related to university student retention.

Due to the dropout phenomenon, in several countries around the world, meetings and

congresses are held in order to study and understand the causes of university student dropout (Gairín et al., 2009), which mainly occurs during the first year at university (Ameri et al., 2016; Gairín et al., 2009; Rodríguez et al., 2004) due to factors such as identification with the program of enrollment, low levels of dedication, lack of motivation, and lack of an adequate study strategy at the university. Thus, strategies are given to develop academic competency leveling plans, among others, aimed at reducing the academic gap between school and university in order to guarantee retention (Dapelo Pellerano & Matus Jara, 2013; Gairín et al., 2009). In Peru, the National Superintendence of University Education found that 27% of students who enter university drop out during their first year of studies, showing that there are no retention strategies, but a very high dropout rate (Duche et al., 2020).

On the other hand, improved access to Latin American universities and their massification have allowed the entry of students from new sectors (low and lower-middle socioeconomic sectors) and with diverse profiles (age, gender, school background, etc.) who were never represented in higher education institutions, and who now have the opportunity to enter them, becoming an important factor in the new university landscape (Ferreya et al., 2017; Guzmán Valenzuela, 2018). Unfortunately, the improvement in access to universities did not bring with it an improvement in student retention rates. This open-door policy was not accompanied by the creation of programs that facilitate the transition of students from school to university. Most of the research associated with this topic focuses on student dropout, analyzing their academic, psychological, financial profile, etc., but few studies focus on what higher education institutions can do to increase university student retention (Chen, 2012; Munizaga Mellado et al., 2018). According to Pineda and Pedraza (2009), student retention is defined as the strategies developed by an institution to keep its students engaged until graduation.

In contrast, persistence is the capacity of a student to achieve their goals (Hagedorn, 2005). In addition, implementing student retention

strategies gives prestige to the university, as well as economic stability. The main accrediting agencies consider retention indicators as a factor of university quality. Therefore, from a social and economic approach, retention rate indicators are quite useful (Chalmers, 2008). In addition to contributing to the timely graduation of students, these retention policies allow universities to maintain stable number of enrollees, thus guaranteeing the execution of their own budget (Rodríguez-Gómez et al., 2014).

On the other hand, it is important to point out that generating human capital is fundamental for the growth of societies and this is achieved through education. If we cannot control student dropout, the generation of human capital is diminished. This human capital, thanks to education, achieves, to a large extent, the economic development that societies need (United Nations Educational, Scientific, and Cultural Organization [UNESCO], 2008), higher education being the one that stands out the most due to its link with the productive sector. According to the Organization for Economic Co-operation and Development (OECD, 2010), university education serves as an indicator of the rate at which countries generate advanced knowledge. Countries with high graduation rates at the university level develop or maintain a significant skilled labor force (Rodríguez-Gómez et al., 2014). Currently, it is vitally important to increase the population's access to higher education in order to enhance the economic development of the future professional, society and the country (Valero & Van Reenen, 2019). For this reason, universities must expand their coverage to ensure that emerging sectors of the population are incorporated into the university, but without ceasing to do everything possible to reduce dropout rates by improving retention and academic performance of students (Espinoza et al., 2009; Munizaga Mellado et al., 2018; Patiño & Cardona, 2012). In Peru, according to Heredia et al. (2015), in a study conducted in 2014, university student dropout rates tend to grow year after year with an approximate cost of 200 million dollars (this approximate figure was determined in the two years prior to the study).

University student dropout is not exclusively the students' responsibility (Donoso and Cancino, 2007). We cannot blame students for falling behind in university and subsequently dropping out. This is also the responsibility of the universities, but can higher education institutions be held responsible for student dropout? In view of this, secondary education should strengthen the academic foundations of students so that they can successfully face university life and avoid failure (Patiño and Cardona, 2012). It is at this point that transition programs for the stage between secondary and higher education appear and ask what the main objective of a transition program is. These programs should consolidate and enhance the competencies (knowledge, skills, and attitudes) necessary to integrate students into the academic life at university.

The transitional stage between school and university poses a challenge for the latter. Students face a new world, and universities must be concerned with guiding and orienting them in the process of integration (García et al., 2014). The gap between school and university has always existed, and the open-door policy that many universities have implemented, allowing a wide variety of profiles to be represented at the university, makes it more complex (Gairín et al., 2009).

Currently, there is great concern about the transition stage between school and university, but it may happen that students do not feel comfortable during this stage and drop out (Rodríguez et al., 2004). Transitioning demands important changes in the students so that they can assume their future role as university students in order to adapt to the new scenario. These changes fall into the cognitive, affective, and behavioral areas (Cabrera, 2006). Therefore, transition programs should be well designed to meet the needs of students and cover these three areas.

In addition, transition programs should be of interest to university authorities in order to offer students robust support to reduce dropout rates and improve retention (Gairín et al., 2009; Mamunur Rashid et al., 2015).

The support programs offered at this stage should be designed to facilitate student retention

in the university and generate a successful academic transition (Cabrera, 2006; Rodríguez et al., 2004; Terraza-Beleño, 2019). Some universities propose certain retention strategies that offer leveling programs (Perin, 2007). Others have created retention models and even their own transition centers to accompany students as they transition into university in order to ensure their retention. In the United States, for example, there is the National Resource Center for the First Year Experience and Students in Transition at the University of South Carolina (Gairín et al., 2009).

The purpose of transition programs is to integrate the student into the new world that is about to begin at the university (García et al., 2014). For this, a transition model must be designed in which academic performance is one of the most important indicators, but which also means a good academic transition and great possibilities of not dropping out for the student (Rodríguez et al., 2004). Students who feel academically integrated are more likely to complete their university studies. This academic integration implies that students perceive that they have the competencies to persist and not drop out (Clark, 2005). Academic performance is the main factor that determines the students' goal to graduate (Donoso & Schiefelbein, 2007). It should be noted that we can provide students with academic support programs as long as we know their needs (Patiño & Cardona, 2012). The initiatives that can be proposed in the teaching learning system to improve retention are a very important issue for academic authorities since student grades are the main source of information for predicting university student dropout (Abu-Oda & El-Halees, 2015).

Finally, in a study carried out by Ramírez and Grandón (2018), using the Decision Tree based binary Classification, they pointed out that dropout is largely due to the low average scores obtained.

University student dropout affects students, their families, society as a whole, and the university itself. While it is good that universities expand student coverage, it is desirable that dropout rates decrease, and, to this end, universities should be concerned with implementing strategies to

strengthen the academic foundations of students who have recently entered university.

Likewise, the implementation of academic programs such as the University Advancement Cycle (*Ciclo de Avance Universitario, CAU*) have demonstrated their relationship with university student retention (Rodríguez et al., 2004; Donoso & Schiefelbein, 2007; Patiño & Cardona, 2012; Ramírez & Grandón, 2018).

In view of the above, this study aims to answer the following question: How is participation in a transition program between secondary and higher education related to the retention of freshmen university students? The main purpose of this study is to evaluate and quantify the relationship between a transition program of a private university in Lima (Peru) with student retention in the first academic semester in order to reduce early dropout. This study's hypothesis was that participation in a university transition program such as the CAU and student retention in the Business and Engineering schools of a private university are related.

## Method

### Design

This study responds to a quantitative research approach and non-experimental design. The research method is hypothetical deductive (Del Cid et al., 2011) since the evidence collected in the sample is used to verify possible associations between variables (Sánchez & Reyes, 2015). Its scope is correlational, since the goal is to analyze the relationship between the participation of freshmen students in the CAU and their retention by the end of the first semester of the program (Hernández-Sampieri & Mendoza, 2018). Likewise, it is longitudinal in nature because it obeys the correlation analysis of variables of the same population with the same characteristics, but with different participants over seven years of study. On the other hand, it is descriptive in the sense that it will allow us to know the relevant characteristics of the academic and sociodemographic profile of the students.

### Participants

The total population of students involved in this study is divided into those who participated in the CAU program and those who did not.

The analysis included only those students admitted in the first academic semester during the years 2013 to 2019 through the General Admission modality to the Business and Engineering schools who completed the first academic semester and whose admission grades were published in the Academic Records Office of the university.

Table 1 shows the sociodemographic characteristics of the participants in the CAU program, and Table 2 shows those who did not participate in this program. The percentage composition of CAU and non-CAU participants in terms of program and gender is practically the same throughout the seven years of analysis. However, in terms of age, between 70% and 84% of the CAU participants are 18 years or younger, while in the non-CAU group, this same age group varies between 53% and 67%.

### Instruments

In this research there was no direct intervention with students, so no psychometric testing was required. All data were obtained from digital files available at the university's Academic Records

Office, where the information is stored in a structured, organized, and encrypted database.

This information must comply with all internal data management protocols, thus ensuring the veracity and reliability of the information collected. For the purposes of this research, student information was requested, including enrollment period, school, program, admission modality (General, Preferential, or other), age, participation in the CAU program, and final situation at the end of the first academic semester (retention or dropout).

The transition program analyzed in this study was created and developed by a particular university in Lima (Peru). Applicants can access this university through one of the modalities offered. The channels or types of admission with the highest demand are the General Modality and the Preferential Modality. Once students enter the university, a multiple-choice placement test called the Level Definition Test (*Prueba de Definición de Niveles, PDN*) is administered, the results of which determine whether students begin their studies with the level 1 courses of their degree or whether they must take the leveling courses; in this way, the university knows the students' needs. The PDN additionally helps to determine students' academic level in the different areas of knowledge

**Table 1**  
*Sociodemographic Characteristics of the Students Who Participated in the CAU*

	2013	2014	2015	2016	2017	2018	2019
<b>N</b>	<b>321 (100%)</b>	<b>408 (100%)</b>	<b>512 (100%)</b>	<b>554 (100%)</b>	<b>338 (100%)</b>	<b>419 (100%)</b>	<b>507 (100%)</b>
Program							
Engineering	148 (46,1%)	148 (36,3%)	207 (40,4%)	243 (43,9%)	161 (47,6%)	202 (48,2%)	233 (46%)
Business	173 (53,9%)	260 (63,7%)	305 (59,6%)	311 (56,1%)	177 (52,4%)	217 (51,8%)	274 (54%)
Gender							
Female	91 (28,3%)	115 (28,2%)	138 (27%)	172 (31%)	87 (25,7%)	100 (23,9%)	138 (27,2%)
Male	230 (71,7%)	293 (71,8%)	374 (73%)	382 (69%)	251 (74,3%)	319 (76,1%)	369 (72,8%)
Age							
18 and younger	237 (73,8%)	284 (69,6%)	408 (79,7%)	427 (77,1%)	278 (82,2%)	306 (73%)	424 (83,6%)
19- 20	42 (13,1%)	77 (18,9%)	75 (14,6%)	90 (16,2%)	40 (11,8%)	70 (16,7%)	61 (12%)
21 – 24	20 (6,2%)	27 (6,6%)	24 (4,7%)	33 (6%)	17 (5%)	35 (8,4%)	18 (3,6%)
25 and older	3 (0,9%)	7 (1,7%)	3 (0,6%)	3 (0,5%)	2 (0,6%)	6 (1,4%)	4 (0,8%)
No data	19 (5,9%)	13 (3,2%)	2 (0,4%)	1 (0,2%)	1 (0,3%)	2 (0,5%)	0 (0%)

**Table 2**

*Sociodemographic Characteristics of Students Who Did Not Participate in the CAU*

	2013	2014	2015	2016	2017	2018	2019
<b>N</b>	<b>1487 (100%)</b>	<b>1798 (100%)</b>	<b>1741 (100%)</b>	<b>2268 (100%)</b>	<b>2117 (100%)</b>	<b>1774 (100%)</b>	<b>1466 (100%)</b>
Program							
Engineering	685 (46,1%)	868 (48,3%)	813 (46,7%)	1159 (51,1%)	1087 (51,3%)	869 (49%)	683 (46,6%)
Business	802 (53,9%)	930 (51,7%)	928 (53,3%)	1109 (48,9%)	1030 (48,7%)	905 (51%)	783 (53,4%)
Gender							
Female	433 (29,1%)	543 (30,2%)	518 (29,8%)	668 (29,5%)	643 (30,4%)	504 (28,4%)	390 (26,6%)
Male	1054 (70,9%)	1255 (69,8%)	1223 (70,2%)	1600 (70,5%)	1474 (69,6%)	1270 (71,6%)	1076 (73,4%)
Age							
18 and younger	787 (52,9%)	949 (52,8%)	941 (54%)	1185 (52,2%)	1231 (58,1%)	968 (54,6%)	980 (66,8%)
19- 20	404 (27,2%)	492 (27,4%)	501 (28,8%)	636 (28%)	511 (24,1%)	407 (22,9%)	257 (17,5%)
21 – 24	188 (12,6%)	253 (14,1%)	252 (14,5%)	367 (16,2%)	325 (15,4%)	319 (18%)	178 (12,1%)
24 and older	29 (2%)	54 (3%)	36 (2,1%)	70 (3,1%)	43 (2%)	70 (3,9%)	49 (3,3%)
No data	79 (5,3%)	50 (2,8%)	11 (0,6%)	10 (0,4%)	7 (0,3%)	10 (0,6%)	2 (0,1%)

necessary for their program (mathematics, writing, physics, etc.). Depending on the results from the PDN, students decide whether or not to take the CAU before enrolling in the university to take the leveling courses.

This transition program takes place before the start of regular undergraduate classes and lasts seven weeks. In addition to the classic courses, the transition program includes a course called Strategies for University Learning, which, in addition to study techniques, incorporates soft skills for students, as well as socioemotional accompaniment through an advisor.

In this transition program, each section has an advisor who establishes an important bond with the students and manages to integrate them. This advisor is one of the professors of the section and, in addition, a permanent point of contact for the students. Among other responsibilities, the advisor promotes personalized communication between students and the academic community; accompanies students during the transition program; assists with all the students' questions, doubts, and concerns; and is a liaison between the institution and students' parents. Depending on the students' concern, the advisor is trained

to assist or, failing that, to refer students to the appropriate department in the university. For example, when students have vocational doubts and are thinking of changing programs, the advisor requests a vocational orientation test or talk. In addition, the program advisors in a weekly meeting led by a specialist psychologist share their experiences and discuss the cases that arise, generating new knowledge. Finally, the advisor establishes links among the members of their section, facilitating the identification and prompt attention to critical situations that could potentially influence academic performance or university student dropout. One of the purposes of this transition program is to make students live the university experience. To this end, students must choose the courses they wish to take and even prepare their schedule, making sure that there is no overlap between the subjects chosen. In addition, the professors are the same university professors. In this sense, the transition program strengthens students' academic competencies by anticipating their university experience in order to make the transition from school to university successful, which will be useful for student retention at the university.

### Procedure

For the purposes of this research, the Systems Department was asked to extract the necessary data, and special care was taken when working with it to preserve their privacy. Once the information was received, the data matrix was prepared, and the respective analysis was carried out, always guaranteeing the protection of student data and research ethics. For each year, from the total number of records, only freshmen students of the schools of Business or Engineering who had entered the program through the General Modality were selected.

The operationalization of the *participation in the CAU* variable was obtained directly from the records received, recoding the YES category with 1 and the NO category with 0. On the other hand, the *student retention* variable was operationalized based on the records of the final situation at the end of the academic semester, visualized at enrollment in the following semester, with the following recoding of its response categories: *Retention* (1), *Dropout* (0), and *Missing Data* (99).

In view of the qualitative nature of the research variables (*participation in the CAU and student retention*), both measured on a nominal scale, the chi-squared test for independence of factors was used (significance level = 0.05) to evaluate the hypothesis of association between these variables. The criterion established to accept the hypothesis of association was that the p-value resulting from the chi-squared test be less than the significance level. On the other hand, the effect size of the association of the variables was calculated with the measurement Cramer's V (also referred to as Cramer's phi), and Cohen's Rule of thumb was used to interpret the value obtained,

as shown in Table 3, where the size is classified as *small, medium*, or large according to the smallest side of the contingency table (Aron & Aron, 2001).

### Results

The results of the analysis of the association between the variables *participation in the CAU* and *student retention* by the end of the first semester of studies are shown below.

Table 4 shows the results of the Chi-square test of independence applied to the total number of students admitted during the years 2013 to 2019 who met the criteria for inclusion. The analysis included 98% of this population, and the remaining percentage corresponds to missing data. Throughout the years, it is clearly seen that the percentage of people who remain in the program, that is, who enroll immediately in the second semester, is higher between 4.8% to 94% in the case of engineering students who took the CAU compared to those who did not. Similar behavior is seen in students from the School of Business, where the difference between one group and the other varies from 5.5% to 14.1%. With the Chi-square test of independence, at a 5% level of significance, it is concluded that the variables *participation in the CAU* and student retention by the end of the enrollment period of the following semester are statistically related in all years. On the other hand, using the V-Cramer measurement and interpreting the values obtained with Cohen's rule for Cramer's phi (see Table 3), low effect sizes of less than 0.10 are obtained in all the periods studied for the students at the School of Engineering. For Business, the effects are also low

**Table 3.**  
Cohen's Rule for Cramer's Phi

Smaller size of the contingency table	Effect size		
	Small	Medium	Large
2 (dfSmaller =1)	0,10	0,30	0,50
3 (dfSmaller =2)	0,07	0,21	0,35
4 (dfSmaller =3)	0,06	0,17	0,29

Note. Source: Statistics for Psychology. Aron & Aron (2001)

**Table 4**  
*Analysis of the Relationship between Participation in the CAU Program and Student Retention*

School	Year	n	CAU		Retention		Chi-square	V-Cramer
			Taken	Not taken	Yes	No		
Engineering	2013	822	146 (17.8%)	676 (82.2%)	690 (83.9%)	132 (16.1%)	3.43	0.06
	2014	1002	144 (14.4%)	858 (85.6%)	832 (83.0%)	170 (17.0%)	3.18	0.06
	2015	1007	203 (20.2%)	804 (79.8%)	810 (80.4%)	197 (19.6%)	6.34*	0.08
	2016	1389	239 (17.2%)	1150 (82.8%)	1116 (80.3%)	273 (19.7%)	7.18*	0.07
	2017	1233	157 (12.7%)	1076 (87.3%)	993 (80.5%)	240 (19.5%)	2.00	0.04
	2018	1065	200 (18.8%)	865 (81.2%)	824 (77.4%)	241 (22.6%)	8.19*	0.09
	2019	915	232 (25.4%)	683 (74.6%)	720 (78.7%)	195 (21.3%)	3.07	0.06
Business	2013	965	169 (17.5%)	796 (82.5%)	813 (84.2%)	152 (15.8%)	3.14	0.06
	2014	1177	258 (21.9%)	919 (78.1%)	991 (84.2%)	186 (15.8%)	13.15*	0.11
	2015	1205	291 (24.1%)	914 (75.9%)	981 (81.4%)	224 (18.6%)	15.97*	0.12
	2016	1408	310 (22.0%)	1098 (78.0%)	1135 (80.6%)	273 (19.4%)	30.79*	0.15
	2017	1187	172 (14.5%)	1015 (85.5%)	970 (81.7%)	217 (18.3%)	1.89	0.04
	2018	1116	216 (19.4%)	900 (80.6%)	827 (74.1%)	289 (25.9%)	5.01*	0.07
	2019	1055	273 (25.9%)	782 (74.1%)	785 (74.4%)	270 (25.6%)	7.38*	0.08

Note. The Chi-square test corresponds to Pearson's independence test.

\* The independence test is significant at the 5% level.

except for the years 2014 to 2016, where the degree of association is interpreted as medium to small. It should be noted that the effects of the association between the variables are small because the sample sizes practically correspond to the totals of each population under study.

## Discussion

The purpose of this study was to analyze the relationship between the variables *participation in the CAU* and *student retention*. In this sense, the findings corroborate the existence of a direct and statistically significant association. However, the effects of this association are partially adequate.

At the same time, these findings are comparable with studies in which the relationship between different intervention programs implemented by a university has also been demonstrated ([Ramírez](#)

[& Grandón, 2018](#)).

In Peru, there is no consensus on an efficient student retention strategy that could serve as a model for other universities in the country. It is for this reason that this study seeks to show a model of a transition program between secondary and higher education that can be replicated not only in all higher education institutions in the country, but also in the international university community to contribute to student retention. Since higher education institutions do not have any influence on certain variables that influence student dropout—such as personal and family variables, they have not been considered in this study. This research has been based solely on academic variables.

The results of this research show that the hypothesis is positively tested. It is possible to affirm that a transition program between secondary and higher education that adequately manages the

academic variables will reduce the dropout rate in the first academic semester at the university, which has a favorable effect, among other aspects, on the execution of the university's budget.

Based on results of this study, our understanding of the phenomenon of student retention increased, since, in line with the evidence previously provided, this study shows how the experience of entering university, particularly the transition stage, requires special attention to students, considering that they are about to begin a new stage in their life in a world that is unknown to them. This transitional stage must include an important academic component for the successful start of university life.

The fact that personal and family variables were not included in this research could be considered a limitation of the study, although, from the beginning, the objective was to analyze retention considering only academic variables.

At this stage of the research, it is important to discuss future studies that may include other variables such as academic performance, percentage of passing students, grade point average, retention throughout the program of study, etc., with students taking a transition program similar to the University Advancement Cycle.

## REFERENCIAS

- Abu-Oda, G., & El-Halees, A. (2015). Data mining in Higher Education: University student dropout case study. *International Journal of Data Mining & Knowledge Management Process*, 5(1), 15-27. <http://dx.doi.org/10.5121/ijdkp.2015.5102>
- Aina, C. (2013). Parental background and university dropout in Italy. *Higher Education*, 65, 437-456. <http://dx.doi.org/10.1007/s10734-012-9554-z>
- Ameri, S., Fard, M., Chinnam, R., & Reddy, C. (2016, October). Survival analysis based framework for early prediction of student dropouts. In *Proceedings of the 25th ACM International Conference on Information and Knowledge Management*, 903-912. <https://doi.org/10.1145/2983323.2983351>
- Arias Ortiz, E., & Dehon, C. (2013). Roads to success in the Belgian French community's higher education system: Predictors of dropout and degree completion at The Université Libre de Bruxelles. *Research in Higher Education*, 54, 693-723. <https://doi.org/10.1007/s11162-013-9290-y>
- Aron, A., & Aron, E. (2001). *Estadística para la psicología*. Prentice Hall.
- Cabrera, G. (2006). *La transición preclínico-clínico en la carrera de Medicina. Una aproximación a su estudio como transición intra curricular*. [Tesis doctoral, Universidad de Barcelona]. <http://hdl.handle.net/2445/42477>
- Chalmers, D. (2008). Teaching and learning quality indicators in Australian universities. Outcomes of higher education: Quality relevance and impact, *Programme on Institutional Management in Higher Education*, Australia, 8-10 de setiembre (2008). <https://pdf4pro.com/cdn/teaching-and-learning-quality-indicators-in-55ae7.pdf>
- Chen, R. (2012). Institutional Characteristics and College Student Dropout Risks: a multilevel event history analysis. *Research in Higher Education*, 53, 487-505. <https://doi.org/10.1007/s11162-011-9241-4>
- Clark, M. R. (2005). Negotiating the freshman year: challenges and strategies among first-year college students. *Journal of College Student Development*, 46(3), 296-316. <https://doi.org/10.1353/csd.2005.0022>
- Da Costa, F., de Souza, M., & de Cássia, R. (2018). Dropout and retention of undergraduate students in management: a study at a Brazilian Federal University. *RAUSP Management Journal*. 53(1), 74-85. <http://dx.doi.org/10.1016/j.rauspm.2017.12.007>
- Dapelo Pellerano, B., & Matus Jara, M. (2013). Necesidades de fortalecimiento cognitivo-motivacional en estudiantes universitarios de primer año: implicaciones para una nivelación efectiva de competencias. *Revista de Orientación Educativa*, 27(52), 15-33. <http://200.14.213.175/roe/index.php/roe/article/view/76/89>
- Del Cid, A., Méndez, R. & Sandoval, F. (2011). *Investigación Fundamentos y metodología*. Pearson.
- Donoso, S., & Cancino, V. (2007). Caracterización socioeconómica de los estudiantes de educación superior. *Revista Calidad en la Educación*, 26, 205-244. <http://dx.doi.org/10.31619/caledu.n26.240>
- Donoso, S., & Schiefelbein, E. (2007). Análisis de los modelos explicativos de retención de estudiantes en la universidad: una visión desde la desigualdad social. *Estudios Pedagógicos*, 33(1), 7-27. <http://dx.doi.org/10.4067/S0718-07052007000100001>

- Duche, A., Paredes, F., Gutiérrez, O., & Carcausto, L. (2020). Transición secundaria-universidad y la adaptación a la vida Universitaria. *Revista de Ciencias Sociales* 26(3), 244-258. DOI: <https://doi.org/10.31876/rcs.v26i3.33245> <https://produccioncientificaluz.org/index.php/rcs/article/view/33245/34917>
- Espinoza, O., González, L., & Latorre, C. (2009). Un modelo de equidad para la educación superior: Análisis de aplicación al caso chileno. *Revista de la Educación Superior*, 38(150), 97-111.
- Ferreira, M., Avitabile, C., Álvarez, J., Haimovich, F., & Urzúa, S. (2017). *At a Crossroads, Higher Education in Latin America and the Caribbean*. World Bank Group. <https://doi.org/10.1596/978-1-4648-1014-5>
- Gairín, J., Muñoz, J.L., Feixas, M., & Guillamón, C. (2009). Impacto de un programa de transición en la permanencia estudiantil universitaria. *Revista Española de Pedagogía*. 67(242), 27-44.
- García Félix, E., Conejero Casares, J. A. y Díez Ruano, J. L. (2014). La entrada en la Universidad: un reto para la orientación. *Revista de Docencia Universitaria*, 12(2), 255-280. <https://doi.org/10.4995/redu.2014.5650>
- Guzmán-Valenzuela, C. (2018). Tendencias globales en educación superior y su impacto en América Latina: desafíos pendientes. *Lenguas Modernas*, (50), 15 - 32. <https://lenguasmodernas.uchile.cl/index.php/LM/article/view/49248/53098>
- Hagedorn, L.S. (2006). *How to define retention: A new look at an old problem. College student retention: Formula for student success*. American Council on Education and Praeger Publishers. <https://files.eric.ed.gov/fulltext/ED493674.pdf>
- Heredia Alarcón, M., Andía Ticona, M., OcampoGuabloche, H., Ramos-Castillo, J., Rodríguez Caldas, A., Tenorio, C., & Pardo Ruiz, K. (2015). Deserción estudiantil en las carreras de ciencias de la salud en el Perú. In *Anales de la Facultad de Medicina* (Vol. 76, No. spe, pp. 57-61). (Vol. 76, No. spe, pp. 57-61). <http://dx.doi.org/10.15381/anales.v76i1.10972>.
- Hernández-Sampieri, R., & Mendoza, C. (2018). Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta. Mc Graw Hill Education.
- Hu, S., & St. John, E. P. (2001). Student persistence in a public higher education system: Understanding racial ethnic differences. *The Journal of Higher Education*, 72(3), 265–286. <https://doi.org/10.2307/2649332>
- Mamunur Rashid, M., Jahan, M., Islam, A., & Munjarin Ratna, M. (2015). Student Enrollment and Dropout: An Evaluation Study of Diploma in Computer Science and Application Program at Bangladesh Open University. *The International Review of Research in Open and Distributed Learning*. 16(4), 18-32. <https://doi.org/10.19173/irrodl.v16i4.2157>
- Munizaga Mellado, F. R. (2018). Retención y abandono estudiantil en la educación superior universitaria en América Latina. <http://dx.doi.org/10.14507/epaa.26.3348>
- Oficina Internacional de Educación de la UNESCO (2008). *La Educación Inclusiva: El Camino hacia el futuro* [Conferencia]. [https://unesdoc.unesco.org/ark:/48223/pf0000162787\\_spa](https://unesdoc.unesco.org/ark:/48223/pf0000162787_spa)
- OCDE (2010), Education Today 2010: The OECD Perspective, OECD Publishing, Paris, <https://doi.org/10.1787/edu-today-2010-en>
- Patiño Garzón, L., & Cardona Pérez, A. (2012). Revisión de algunos estudios sobre la deserción estudiantil universitaria en Colombia y Latinoamérica. *Theoria*, 21(1), 9-20. <https://www.redalyc.org/articulo.oa?id=29931769002>
- Perin, D. (2007). Can Community Colleges Protect both Access and Standards? The Problem of Remediation. *Teachers College Record*, 108(3) 339-373. <https://doi.org/10.1177/016146810610800301>
- Pineda, C., & Pedraza, A. (2009). Programas exitosos de retención estudiantil universitaria: las vivencias de los estudiantes. *Revista Virtual Universidad Católica del Norte*, (28), 1-30. <https://www.redalyc.org/articulo.oa?id=194214468010&idp=1&cid=651231>
- Ramírez, P., & Grandón, E. (2018). Predicción de la Deserción Académica en una Universidad Pública Chilena a través de la Clasificación basada en Árboles de Decisión con Parámetros Optimizados. *Formación Universitaria*, 11(3), 3-10. <http://dx.doi.org/10.4067/S0718-50062018000300003>
- Rodríguez, S., Fita, E., & Torrado, M. (2004). El rendimiento académico en la transición secundaria – universidad. *Revista de Educación*, 334, 391-414. <https://www.educacionyfp.gob.es/dam/jcr:f64ea840-76aa-4cb9-bf1f-78ebb79f8fce/re33422-pdf.pdf>
- Rodríguez-Gómez, D., Feixas, M., Gairín, J., & Muñoz, J. L. (2015). Understanding Catalan university dropout from a cross-national approach. *Studies in Higher Education*, 40(4), 690-703. <http://dx.doi.org/10.1080/O3075079.2013.842966>
- Sánchez, H. & Reyes, C. (2015). *Metodología y diseños en la*

- investigación científica*. Business Support Aneth.
- Sánchez Carlessi, H. H. & Reyes Meza, C. (2021). *Metodología y diseños en la investigación científica* (Sexta edición). H. Hugo Sánchez Carlessi
- Severiens, S., & Dam, G. (2012). Leaving college: A gender comparison in male and female-dominated programs. *Research Higher Education*, 53(4), 453–470. <http://dx.doi.org/10.1007/s11162-011-9237-0>
- Tan, M., & Shao, P. (2015). Prediction of student dropout in e-learning program through the use of Machine Learning Method. *International Journal of Emerging Technologies in Learning*, 10(1), 11-17. <http://dx.doi.org/10.3991/ijet.v10i1.4189>
- Terraza-Beleño, W. (2019). Estrategias de retención estudiantil en educación superior y su relación con la deserción. *Revista Electrónica en Educación y Pedagogía*, 3(4), 39-56. <http://dx.doi.org/10.15658/rev.electron.educ.pedagog19.03030403>
- Valero, A., & Van Reenen, J. (2019). The economic impact of universities: Evidence from across the globe. *Economics of Education Review*, 68, 53-67. <https://doi.org/10.1016/j.econedurev.2018.09.001>
- Villamizar, G., & Romero, L. (2011). Relación entre variables psicosociales y rendimiento académico en estudiantes de primer semestre de Psicología. *Revista Educación y Desarrollo Social*, 5(1), 41-54.