

Logistic regression analysis: predictive variables of permanence in Peruvian public universities

Análisis de regresión logística: variables predictivas de la permanencia en universidades públicas peruanas

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Resumen

La educación universitaria es clave para el desarrollo económico y social del Perú. La permanencia de los estudiantes en universidades públicas es fundamental para garantizar su formación y optimizar la inversión estatal en su educación. Objetivo: Analizar las variables que predicen la intención de permanencia en estudiantes de universidades públicas peruanas, destacando factores sociodemográficos y psicológicos que influyen en la retención de los estudiantes. Metodología: Se utilizó un enfoque cuantitativo mediante un análisis de regresión logística con una muestra de 611 estudiantes de universidades públicas peruanas. Se consideraron variables como la motivación intrínseca, la perspectiva de tiempo futuro, el compromiso institucional y el sexo. Resultados: Los resultados muestran que la motivación intrínseca, el compromiso institucional y la perspectiva de tiempo futuro son factores clave en la permanencia estudiantil. Las mujeres tienen menor probabilidad de continuar sus estudios. Conclusiones: Es necesario que las universidades implementen estrategias para fortalecer la motivación, compromiso y apoyo a estudiantes, especialmente a las mujeres.

Palabras clave: Permanencia, Universidad, Motivación Intrínseca, Compromiso Institucional, Perspectiva de Tiempo Futuro.

Abstract

University education is key to Peru's economic and social development. The permanence of students in public universities is fundamental to guarantee their education and to optimize the state investment in their education. Objective: To analyze the variables that predict the intention of permanence in Peruvian public university students, highlighting sociodemographic and psychological factors that influence student retention. Methodology: A quantitative approach was used through a logistic regression analysis with a sample of 611 students from Peruvian public universities. Variables such as intrinsic motivation, future time perspective, institutional commitment and gender were considered. Results: The results show that intrinsic motivation, institutional commitment and future time perspective are key factors in student retention. Females are less likely to continue their studies. Conclusions: It is necessary for universities to implement strategies to strengthen motivation, commitment and support for students, especially women.

Keywords: permanence, university, intrinsic motivation, institutional commitment, future time perspective.

INTRODUCTION

University education plays a fundamental role in the economic and social development of a nation, and Peru is no exception. The permanence of students in public universities is crucial not only for their professional development, but also to maximize the state's investment in their education. According to Yamada and Castro (2013), continuity in university studies should be promoted, as it contributes to the education of future professionals who will generate development in their respective areas of specialization. However, when students fail to complete their university education, this state investment is lost, which represents a setback in terms of productivity and growth for the country.

In Peru, the public university system faces significant challenges in terms of student retention. Although state investment in higher education is considerable, a proportion of students fail to complete their education. This situation represents a loss for both the individual and the State, since the resources invested in the education of students who drop out do not produce the expected benefits. In 2020, the average university permanence per semester in public institutions was 82.8% (Ministry of Education, 2021), which indicates that 17.2% of students interrupt their education before obtaining a degree. This percentage underscores the importance of studying and understanding the variables that influence university permanence in order to develop effective strategies to improve it.

Despite the relevance of the topic, most research in Peru has focused on studying university dropout, rather than analyzing the factors that promote permanence (Castillo *et al.*, 2020; Del Savio *et al.*, 2022; Millones-Liza and García-Salirrosas, 2022; Viera *et al.*, 2020). These investigations have mainly used quantitative approaches to identify the causes of dropout, including economic, academic, and personal factors. However, there is a lack of studies that explore from a positive perspective the variables that contribute to continuity in studies, such as family support, academic motivation or institutional commitment. This gap in the literature is significant, since understanding the factors that favor permanence is essential for the development of educational policies that improve retention rates and, therefore, the efficiency of the higher education system.

In this study, we seek to address this research gap through an analysis of the predictive variables of university continuance in Peruvian public universities. Through a logistic regression model, we will examine how various sociodemographic and psychological factors influence student continuance. The sociodemographic variables to be analyzed include the age of the students, the academic cycle they are in, the family support they receive, the educational level of their parents, the type of school they come from, and the academic average of the first cycle. These variables have been identified in previous studies as relevant factors for retention in higher education (Spady, 1970; Tinto, 1975; Pascarella & Terenzini, 1980; Astin, 1984).

On the other hand, psychological variables such as intrinsic motivation, institutional commitment and future time perspective will also be explored. Intrinsic motivation, defined as the internal drive that leads students to perform activities for the pleasure of doing them (Deci & Ryan, 1985), has been widely studied in the educational field. Self-determination theory suggests that intrinsically motivated students are more likely to be committed to their studies and persist in the face of challenges (Vansteenkiste, Lens & Deci, 2006). In addition, institutional commitment, which refers to the degree to which students feel connected to and satisfied with their educational institution, is another key factor. According to Tinto (1975), students who develop a strong institutional commitment are more likely to continue their studies through graduation. This commitment may be influenced by the quality of teaching, satisfaction with the college experience, and identification with the institution (Astin, 1984; Pascarella & Terenzini, 1980).

Finally, future time perspective, understood as students' ability to plan and visualize their long-term goals, also plays a crucial role in university permanence (UP). Research such as that of Zimbardo and Boyd (1999), and Shell and Husman (2001), has shown that students with a strong time perspective tend to be more motivated to achieve their educational goals and, thus, are more persistent in their studies. This ability to project themselves into the future allows them to overcome obstacles and maintain their focus on obtaining a college degree.

Objective and Hypothesis

The objective of the study is to analyze the variables that predict UP intention in Peruvian public university students. The General Hypothesis is that sociodemographic variables such as gender and educational level of parents and psychological variables such as intrinsic motivation, future time perspective and institutional commitment predict significantly the intention to stay in Peruvian public universities.

THEORETICAL FRAMEWORK

University Permanence

UP is a phenomenon of great relevance, especially in Peruvian public universities (SUNEDU, 2022). The UP refers to the capacity of students to remain enrolled and complete their university studies. In the Peruvian context, the UP rate in 2020-1 was 81.7%, 2020-2 was 83.8%, and increased in 2021-1 reaching 88.5% (Ministry of Education, 2021), a figure that reveals the magnitude of the problem. The UP not only benefits students by providing them with greater job and career opportunities, but is also crucial for optimizing state investment in higher education. Previous research has pointed out that future orientation, academic well-being and institutional integration are factors that have a significant impact on permanence (Herrera Paredes, *et al.*, 2023).

Intrinsic Motivation

This is a central concept in educational psychology, described as the internal drive that leads students to perform an activity for the pleasure it generates, without the expectation of external rewards (Deci & Ryan, 1985). In the university context, intrinsic motivation (IM) is a significant predictor of UP, as those students who are internally motivated tend to show greater commitment to their learning and a greater ability to overcome academic challenges (Vansteenkiste, Lens & Deci, 2006). The self-determination theory postulates that students who feel autonomy, competence, and relatedness to others are more likely to be intrinsically motivated and, therefore, to continue their studies in the long run (Ryan & Deci, 2000).

In the context of the COVID-19 pandemic, IM became particularly relevant due to the difficulties students faced with virtual learning and social constraints. Herrera Paredes *et al.* (2023) noted that students who maintained high levels of IM during the pandemic, especially those who participated in tutoring programs, managed to preserve their academic and emotional well-being, which was key to their UP. Tutoring, understood as an institutional support system, plays an important role in the development of this motivation, as it facilitates the academic and personal integration of students (Álvarez & Álvarez, 2015).

Future Time Perspective

Future time perspective (FTP) is a motivational psychological construct that describes the ability of individuals to plan and project themselves into the future by setting clear goals and maintaining goal-oriented behavior (Zimbardo & Boyd, 1999). This perspective is an important predictor of UP, as students who have a clear vision of their academic and professional future tend to be more committed to their education and persist in their studies (Shell & Husman, 2001). TFP has also been related to academic well-being, as those students who view their future with optimism tend to report higher levels of satisfaction with their academic lives (Seginer, 2009).

During the COVID-19 pandemic, students' future orientation was a key factor in maintaining their academic performance and well-being, according to Herrera Paredes *et al.* (2023). In addition, previous studies in Peru have indicated that future orientation is positively associated with students' academic performance and life satisfaction (Herrera & Matos, 2016).

Institutional Commitment

This refers to the degree to which a student feels identified and committed to his or her educational institution (Tinto, 1975). This commitment is a key factor for UP, since students who develop a positive bond with their university tend to persist in their studies, even when they face difficulties (Astin, 1984; Pascarella & Terenzini, 1980). Research in the Peruvian context has shown that institutional commitment (IC) is one of the main

predictors of UP, especially in public universities where students tend to face greater economic and social challenges (Millones-Liza & García-Salirrosas, 2022).

Age

Age is a sociodemographic variable that has been widely studied in relation to UP. Several studies suggest that younger students tend to have higher rates of UP, while older students, who enter college later in life, face greater difficulties in completing their studies (Bean & Metzner, 1985). In Peru, Figallo et al. (2020) found that older students have a higher probability of dropping out of university due to the family and work responsibilities they face.

Sex/Gender

Gender is also an important variable in UP studies. Previous research has found that women tend to have higher UP rates compared to men, which could be related to higher academic motivation and greater commitment to studies (Cabrera et al., 1993). In the Peruvian context, Viera et al. (2020) noted that, although women tend to have higher retention rates, they also face additional barriers, especially in careers related to science and engineering.

Educational Level of Parents

This refers to the degree attained by one of the parents at the level of studies, for this case it was considered without education, with basic education studies, and with higher education studies. Research indicates that students whose parents have a higher level of education tend to have greater academic and motivational support, which increases their probabilities of continuing their studies (Tinto, 1975). In Peru, studies such as that of Millones-Liza and García-Salirrosas (2022) have shown that students from families with a higher educational level tend to have lower dropout rates.

Academic Cycle

The academic cycle is a formal period of time within universities, in which students take a set of subjects that are part of the curriculum, generally, for Peruvian universities a cycle corresponds to one semester. Several studies have pointed out that the first academic cycles are the most critical, since it is at this stage that students

face the greatest difficulties in adapting and, therefore, are more likely to drop out of university (Tinto, 1975). In Peru, Del Savio et al. (2022) noted that students who manage to overcome the first cycles have higher UP rates, which underlines the importance of tutoring and accompaniment programs in the first years of study.

Logistic Regression Studies

At the international level, studies in countries such as the United States and Spain have also used logistic regression to analyze UP. For example, Tinto (1975) developed a theoretical model of academic and social integration, which has been applied in numerous studies to identify factors that influence UP. Likewise, research abroad has used logistic regression to analyze the impact of variables such as academic performance and family support on UP (Davidson et al., 2015). In Peru, no logistic regression studies have been conducted on the subject, with more than one public university.

METHOD

Type of study

This study is based on a quantitative approach, using logistic regression analysis to identify predictor variables of UP in Peruvian public universities. Logistic regression was selected due to the dichotomous nature of the dependent variable, which in this case is the intention of UP in the following semester (Yes or No). The analysis was oriented to identify how different psychological and sociodemographic variables influence the probability that students remain in college (Pallant, 2016).

Population and Sample

The target population of the study was undergraduate students enrolled in public universities in Peru. The sample was composed of 611 students from various faculties and academic cycles, selected in a non-probabilistic manner and based on the availability to participate in the study. Table 1 shows that the sample included 365 females (59.7%) and 246 males (40.3%), with a wide representation of different academic years and disciplines.

Table 1*Sex of participants*

Sex	Frequency	Percentage (%)
0 - Female	365	59.7
1 - Male	246	40.3
Total	611	100

Variables**Dependent variable:**

UP intention, measured as a dichotomous variable (1 = Yes, 0 = No), indicating whether students planned to continue at the university in the following semester.

Independent variables:

Intrinsic motivation: Assessed through a scale that measures enjoyment and interest in academic activities for intrinsic reasons (Deci & Ryan, 1985).

Future time perspective (FTP): Measured as students' ability to plan and visualize their long-term goals related to their studies (Zimbardo & Boyd, 1999).

Institutional commitment: Degree to which students feel connected and committed to their college or university (Tinto, 1975).

Sex: Categorical variable (0 = Female, 1 = Male).

Other variables: Age, parents' educational level and academic cycle were also considered in the initial analysis, but were not significant in the final model.

Instruments

The instruments used included: a sociodemographic questionnaire, intrinsic motivation questionnaire (Vansteenkiste et al., 2009), future time perspective questionnaire (Park, Han, & Ryu, 2021), institutional commitment questionnaire (Davidson et al., 2009). The following sociodemographic data: gender, age, parents' educational level, and academic cycle were explored as part of the questionnaire (Field, 2018).

Procedure

The data were collected virtually in the year 2023, during the regular academic period in Peruvian public universities that granted permission to participate in the study. An online survey was used that was applied through virtual educational platforms, where students responded anonymously.

Data Analysis

A logistic regression analysis was conducted using R Studio statistical software to identify predictor variables of UP. The final model included the variables intrinsic motivation, future time perspective, institutional commitment, and gender. The initial model included other variables such as age, parental education and academic cycle. Inferential analysis to assess the impact of key variables such as intrinsic motivation, institutional commitment, future time perspective and gender was determined with β coefficients, Wald tests and p-values determined the significance and direction of the effects upon permanence.

RESULTS

Table 2 shows that, in the UP intention, 6.4% of the students were identified as being in the category of intention not to remain in the institution, while 93.6% were identified as being in the category of intention to remain in the institution.

Table 2*Table of frequencies*

Student permanence	Frequency	Percentage (%)
0 - Do not stay	39	6.4
1 - Stay	572	93.6

Table 3 evaluated an initial model having as independent variables Intrinsic Motivation, Future Time Perspective, Institutional Commitment, Gender, Age, Father's Education, Mother's Education and Cycle. However, only the first four had statistically significant associations. As can be seen, the only values with a significant p-value were: IM, FTP, IC and SX. These will be considered for the final model.

Table 3*Linear Regression Coefficients of the initial model*

University permanence	Non-standardized coefficients		Wald	p
	Beta	Sd		
Intrinsic Motivation (IM)	.14	.04	11.65	0.001***
Future Time Perspective (FTP)	.10	.04	4.59	0.032**
Institutional Commitment (IC)	.35	.08	16.05	0.000***
Age	-.07	.04	2.23	0.135
Sex (SX)	-.77	.43	3.16	0.075*
Father's education			4.78	0.091
Father's education (1)	.05	1.25	.00	0.968
Father's education (2)	-1.04	.48	4.38	0.036
Mother's education			2.19	0.334
Mother's education (1)	1.29	.90	2.04	0.152
Mother's education (2)	.43	.50	.73	0.392
Cycle			9.62	0.292
Cycle (1)	.84	.76	1.19	0.275
Cycle (2)	1.20	1.82	.43	0.509
Cycle (3)	.06	.68	.00	0.930
Cycle (4)	.22	.92	.05	0.808
Cycle (5)	-.37	.85	.19	0.660
Cycle (6)	-1.66	.85	3.80	0.051*
Cycle (7)	.715	.65	1.20	0.273
Cycle (8)	18.58	6837.43	.00	0.998
Constant	-8.03	1.99	16.17	0.000***

Note: *** $p \leq .01$, ** $p \leq .05$, * $p \leq .1$ = Statistically significant; Sd = Standard deviation

In the end, logistic regression considered the dependent variable UP and the independent variables Intrinsic Motivation, Future Time Perspective, Institutional Commitment, and gender.

Table 4 reports the descriptive statistics of the variables that will be part of the model:

Intrinsic Motivation, Future Time Perspective and Institutional Commitment. It was identified that for IM, there was an average of 33 with a standard deviation of 5.74, for PTF there was an average of 33.2 and a standard deviation of 4.58, and for IC there was an average of 16.4 and a standard deviation of 2.3.

Table 4*Descriptive analyses*

	N	X	Md	De	S2	Minimum	Maximum
Intrinsic motivation	611	33	34	5.74	33	0	40
Future time perspective	611	33.2	33	4.58	21	9	45
Institutional Commitment	611	16.4	16	2.3	5.28	7	20

Note: X = Mean; Md = Median; Sd = Standard deviation; S2 = Variance.

Table 5 shows a McFadde's Pseudo R2 value of 0.264, which indicates that the logistic regression coefficient of determination explains 26% of the variance of UP.

Table 5
Coefficient of Determination

Pseudo R ² de McFadde
0.264

Table 6 and Figure 1 present the independent variables of the final model (Intrinsic Motivation, Future Time Perspective, Institutional Commitment and Sex) that present statistically significant associations with UP ($p \leq .05$). The final regression equation is interpreted as follows: $Y = -8.190 + 0.098X_1 + 0.110X_2 + 0.316X_3 - 0.873X_4$. In this equation, Y is UP, X1 is Intrinsic Motivation,

X2 is Future Time Perspective, X3 is Institutional Commitment, and X4 is Sex. Specifically on intrinsic motivation ($\beta=0.098$, $p=0.001$) it is understood that there is a positive relationship between intrinsic motivation and university permanence. This indicates that students with higher intrinsic motivation tend to stay longer in college. As for future time perspective ($=0.11$, $p=0.006$), students with a clearer future perspective are more likely to stay in college. At the same time for institutional commitment ($=0.316$, $p=0.000$), this variable has the highest positive weight in the model, reinforcing the importance of institutions in fostering an environment that promotes academic continuity. Finally, sex ($=-0.873$, $p=0.022$), the negative coefficient indicates that there is a difference by gender in the probability of permanence, unfavorable for a particular group.

Table 6
Regression coefficients of the final model

University permanence	Non-standardized coefficients		Wald	p
	B	De		
Intrinsic Motivation	.098	.028	11.868	.001
Future Time Perspective	.110	.041	7.413	.006
Institutional Commitment	.316	.079	15.831	.000
Sex	-.873	.382	5.231	.022
Constant	-8.190	1.616	25.702	.000

Note: *** $p \leq .01$, ** $p \leq .05$, * $p \leq .1$ = Statistically significant; Sd = Standard deviation.

Figure 1
Final regression

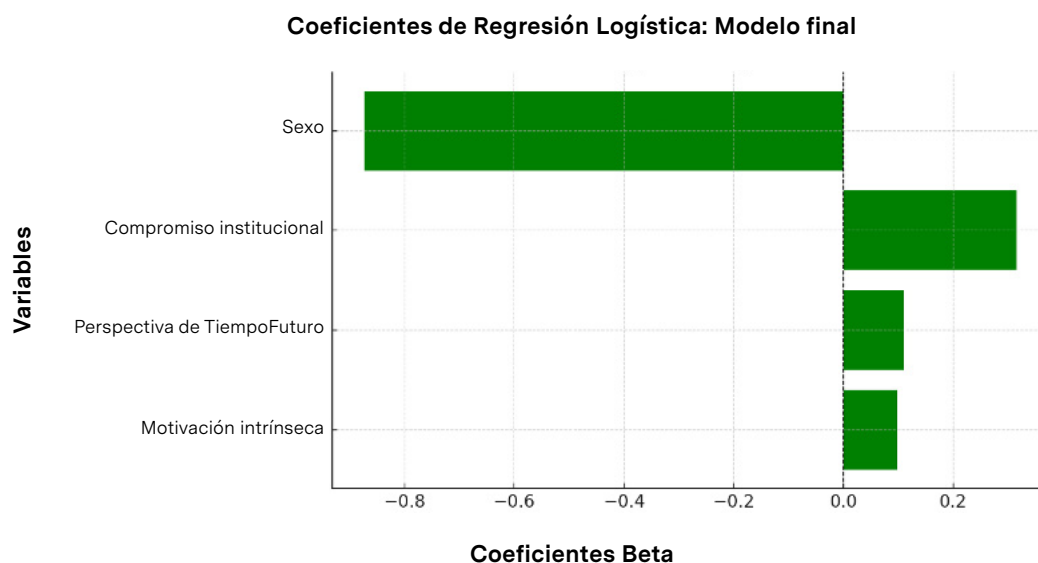


Table 7 identified that in relation to IM, it is observed that for every one unit increase in this variable, the probability of a student remaining in his or her studies increases by 10% (OR = 1.10). This finding suggests that a greater internal motivation for learning is associated with a greater student retention.

TFP also shows a positive relationship with UP. An increase in students' perception of their educational and professional future is linked to a 12% increase in the probability of continuing to study (OR = 1.12). This indicates that students with a clearer and more optimistic view of their academic future have a greater tendency to remain enrolled.

Institutional Commitment (IC) presents the strongest effect among the continuous variables. An increase in the level of students' commitment to the academic institution increases the probability of remaining by 37% (OR = 1.37). This suggests that the sense of belonging and alignment with the institution's values are key factors for students to continue in their academic process.

Regarding the categorical variable sex/gender, the results indicate that women are 59% less likely to continue their studies compared to men (OR = 0.41). This difference in the odds of UP between sexes could be related to a series of social, economic or personal factors that could be affecting women in the academic environment.

Table 7
Estimation for university permanence

	OR (95% IC)
Intrinsic motivation	1.10 (1.04 - 1.16)
Future time perspective	1.12 (1.03 - 1.20)
Institutional Commitment	1.37 (1.17 - 1.60)
Sex	0.41 (0.19 - 0.88)

Table 8 shows the Area Under the Curve (AUC) value of 0.811, which indicates a good predictive capacity of the logistic regression model. The AUC measures the ability of the model to correctly distinguish between cases belonging to class 1 (permanence) and class 0 (non-permanence). In this case, it was identified that the model has an 81.1% probability of correctly classifying a student who remains versus one who does not, which is a positive indication of performance.

Table 8
Area Under the Curve

AUC
0.811

DISCUSSION

The results obtained in this study provide a deep and nuanced understanding of the factors that influence the UP in Peruvian public universities. The variables that proved to be statistically significant, such as IM, TFP, IC and sex, stand out as key elements in UP. These findings are consistent with the existing literature and offer new perspectives in the Latin American context and, specifically, in Peru, where university dropout rates continue to be a critical challenge (Cabrera, Nora & Castañeda, 1993; Tinto, 1975; Astin, 1984).

The IM was confirmed as a crucial predictor in the UP. The analysis shows that an increase in IM raises the probability of continuing studies by 10% (OR = 1.10). This result is aligned with the self-determination theory proposed by Deci and Ryan (1985), who argue that students who find satisfaction in the learning process,

without the expectation of external rewards, tend to persevere in their education. Intrinsically motivated students are more likely to overcome academic difficulties, since their interest in learning is inherent and does not depend on external incentives (Ryan & Deci, 2000).

In the context of Peruvian public universities, this finding is particularly relevant. These institutions, often lacking sufficient resources, serve a student population that faces additional barriers, such as lack of economic support and difficulties in balancing academic life with other personal or work responsibilities (Millones-Liza & García-Salirrosas, 2022). This result underscores the need for public universities to develop strategies that strengthen IM, which could include tutoring programs, mentoring, personalized academic advising, as well as the creation of environments that promote the enjoyment of learning (Vansteenkiste, Lens, & Deci, 2006).

In addition, studies such as those by Herrera Paredes et al., (2023) have shown that during periods of crisis, such as the COVID-19 pandemic, IM plays a crucial role in students' academic resilience. Those with higher levels of IM tend to adapt better to non-face-to-face teaching modalities and remain committed to their studies. Therefore, it is vital that Peruvian institutions promote programs that foster long-term IM, integrating pedagogical tools that make learning a valuable experience in itself for students.

TFP was also shown to be a significant predictor of UP, with a 12% increase in the probability of continuing studies for each additional unit of TFP (OR = 1.12). This finding confirms what has already been reported by researchers such as Zimbardo and Boyd (1999), who argue that students with a clear and positive vision about their academic and professional future have a greater willingness to stay in their studies. Students' ability to visualize the future rewards of their education, such as better job opportunities or economic stability, drives their commitment to long-term goals (Shell & Husman, 2001).

In the context of Peruvian public universities, many students come from challenging socioeconomic backgrounds, which can hinder their ability to maintain an optimistic outlook on their future. TFP, in this sense, can act as a protective factor, helping students to maintain their focus on academic goals, despite immediate difficulties. Previous studies, such as those of Herrera and

Matos (2016), have shown that students with high TFP report higher academic well-being and greater satisfaction with their college life.

This finding reinforces the need to implement career guidance and counseling programs that help students plan and visualize their academic and professional future. Universities should provide students with the necessary tools to enable them to plan for a long-term career, including access to information about job opportunities and professional support networks. During the COVID-19 pandemic, as noted by Herrera Paredes et al., (2023), students with stronger TFP showed greater capacity to adapt to new learning conditions, suggesting that strengthening this variable may be key in crisis contexts.

IC was the strongest predictor in the logistic regression model, with a 37% increase in the probability of UP intention for each additional unit of IC (OR = 1.37). This result is consistent with previous research highlighting the importance of a sense of belonging and institutional integration in student retention (Tinto, 1975; Pascarella & Terenzini, 1980). Students who feel part of their university, who share its values and perceive adequate support, are more likely to continue their studies and complete their academic training (Astin, 1984).

In Peruvian public universities, where many students face social and economic obstacles, IC becomes even more relevant. Universities that lack adequate support programs may see higher dropout rates among their students. This finding suggests that universities should invest in initiatives that strengthen IC, such as extracurricular activities, mentoring programs, and academic advising services (Álvarez & Álvarez, 2015).

Studies such as those of Millones-Liza and García-Salirrosas (2022) have pointed out that institutional support is fundamental for students who come from socioeconomically challenging backgrounds. In this context, IC is not only related to academic success, but also to the retention of students who would otherwise be at risk of dropping out of school. This finding highlights the importance of designing institutional policies that promote academic and social integration, reinforcing the sense of community within the university.

The analysis also revealed that women are 59% less likely to continue their studies compared to men (OR = 0.41). This finding is contradictory to previous studies that have found that women tend to have higher retention rates in higher education, due to their greater commitment to their studies and higher academic motivation (Cabrera et al., 1993). However, this result may be influenced by factors specific to the social and cultural context in Peru, where women may face greater barriers to continuing their studies, such as family, economic or social responsibilities (Herrera Paredes *et al.*, 2023).

This finding underscores the importance of implementing specific support policies for female students in Peruvian public universities. Universities should consider creating programs that address the particular needs of women, such as daycare centers for student mothers, counseling programs, and scholarships that support women in vulnerable situations (Viera *et al.*, 2020). In addition, it is crucial that universities promote a culture of gender equality that enables women to overcome the social and economic barriers they face.

The Area Under the Curve (AUC) value of 0.811 indicates that the logistic regression model has a good predictive ability to correctly classify students into the UP intention and UP non-intention categories. This result is consistent with methodological recommendations for the evaluation of logistic regression models (Hosmer & Lemeshow, 2013), suggesting that the selected variables are relevant and adequately explain the variability in UP.

The predictive capacity of the model also highlights the potential of these variables to be used in the creation of institutional policies. Peruvian public universities can employ these results to design specific interventions that promote UP, such as programs that reinforce IM, foster TFP, and strengthen IC. In addition, the identification of the sex variable as a risk factor suggests the need to implement inclusive and equitable policies that support women in the academic environment.

CONCLUSIONS

This study has provided an in-depth understanding of the factors influencing UP in Peruvian public universities. Psychological variables, such as IM, TFP and IC, proved to be significant predictors of UP, reinforcing the importance of academic and personal support strategies in higher education. Also, a significant difference in UP rates between males and females was identified, underscoring the need for gender-specific policies that address the barriers faced by female students. Logistic regression analysis showed that the model has good predictive ability, suggesting that these variables can be used as key indicators for designing effective educational interventions. IC, in particular, was the strongest predictor, which highlights the importance of strengthening the bond between students and their universities through support programs, mentoring and extracurricular activities.

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