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Cognitive motivational variables and dropout intention as precursors of university dropout

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Introduction: The intention to dropout and dropout is a problem still unresolved in higher education institutions.

Objective: To estimate the differences in the levels of engagement, motivation and academic satisfaction according to (a) intention to dropout and (b) students who remained with those who dropped out. Method: non-experimental designs were used. Two studies are reported, study 1 involved 3,256 students and study 2 involved 2,110 students. The Utrecht Work Engagement Scale Student Test, the Academic Self-Regulation Scale and the Academic Satisfaction Scale were used. The intention to dropout was measured with 3 items and the final dropout data was taken from the official register of students who dropped out of university.

Results: There are significant differences in the levels of engagement, autonomous motivation and satisfaction between the students who remained and those who dropped out of the university.

Discussion: Students who dropped out in the 3rd semester presented lower levels of academic engagement, motivation and academic satisfaction than those who remained. The intention to dropout and lower levels of these cognitive-motivational variables may contribute to the identification of students at high risk of dropping out. These results contribute to unveiling key variables for the educational transformation of Higher Education in the 21st century.

KEYWORDS

academic engagement, motivation, academic satisfaction, intention to dropout, dropout, university quitting, higher education, quitting

1 Introduction

Dropout from tertiary education is a relevant issue that can be evidenced in different regions of the world (Behr et al., 2021; Perchinunno et al., 2021; Delogu et al., 2024). This is no exception in the Latin American region (Acevedo, 2021; Arias et al., 2023; Heredia and Carcausto-Calla, 2024), which reports concern about dropout levels in universities. Specifically, in Chile, the figures shown in recent years confirm the importance of addressing this phenomenon (López-Angulo et al., 2023; Sáez-Delgado et al., 2021; Von Hippel and

Hofflinger, 2021). According to the Higher Education Information Service (SIES; for its acronym in Spanish), the dropout rate of students in Chilean universities has remained between 21 and 30% (SIES, 2017, 2019, 2020), with a decrease of 1.2% in the first year (SIES, 2023).

In this context, the specialized literature highlights that cognitive and motivational skills are required to respond to academic, social and institutional demands at the university stage (Long and Noor, 2023; López-Angulo et al., 2022; Lorenzo-Quiles et al., 2023; Sáez-Delgado et al., 2023). Overcoming these challenges can be complex despite having met the formal requirements for university entrance (Kocsis and Molnár, 2024). The causes for students dropping out can be categorized into individual, academic, economic, institutional, and cultural factors (Aina et al., 2022; Bernardo et al., 2022; de la Cruz-Campos et al., 2023). Within the individual factors are, among others, academic motivation, academic satisfaction, academic engagement and intention to dropout (Álvarez-Pérez et al., 2021; Bernardo et al., 2022; Litalien et al., 2019; Marôco et al., 2020; Truta et al., 2018).

Motivation refers to the energy that moves the person to act. It can be observed from one extreme with no motivation, through controlled force or regulation to the other extreme of autonomous motivation (Ryan and Deci, 2000). Controlled motivation alludes to external pressures or external control (Vansteenkiste et al., 2006). At an opposite extreme, motivation is delineated as autonomous to emphasize its basic characteristic of choice and psychological freedom; this motivation and sense of academic enjoyment are favorable for progress in studies (Corpus et al., 2020; Noyens et al., 2019) is facilitated by perceived support for one's decisions from one's teachers (Alrabai, 2021), is linked to superior academic performance (Manzoor et al., 2023) and less likelihood of dropping out (Yusof et al., 2023). Consideration of this motivation may prove valuable in predicting future university dropout (Wild et al., 2024).

When students can actively participate in the achievement of their goals, they experience higher levels of academic satisfaction (Sánchez-Cardona et al., 2021). In the academic context, satisfaction is understood as well-being and enjoyment of the experiences lived by the student (Diener et al., 2018); it can be influenced by aspects such as academic self-efficacy, the expectation of results, progress in the established goals and social support (López-Angulo et al., 2021; Mostert and Pienaar, 2020). It is associated with characteristics of the university center, with pedagogical practices developed by its teachers (Espinoza and McGinn, 2018) and to the intention to dropout during the period of university entrance (Bernardo et al., 2018).

Academic engagement is another aspect linked to success in university (Acosta-Gonzaga, 2023; Ayala and Manzano, 2018; Cobo-Rendón et al., 2022; Martínez et al., 2019). It is a positive state of mind and persistent satisfaction, disaggregated into vigor, dedication, and absorption (Schaufeli and Bakker, 2003). Vigor is the student's willingness to exert effort and persist in academic activities. Dedication is a desire for involvement in academic activities, enthusiasm, a sense of pride and inspiration, related to studies. Absorption is a condition of concentration and involvement in academic activities, associated with a loss of the notion of time, which makes the student persist in the task without being aware of the time spent in its realization (Liébana-Presa et al., 2014; Schaufeli and Bakker, 2003). Engagement is related to academic satisfaction (Fisher et al., 2021) and to university persistence (Álvarez-Pérez et al., 2021). In contrast, a lack of dedication (dimension of engagement) to studies

has been found to be a predictor of dropout intention (Truta et al., 2018).

The process of disengagement with the university career begins with an intention to dropout, understood as part of a decision-making process developed during the early stages of the university experience, associated with the students' probability of discontinuing their studies (Song et al., 2023; Muñoz-Inostroza et al., 2024). The dropout intention alludes to desires to dropout corresponds to cognitions of changing or abandoning the career or the university institution (Bean and Metzner, 1985; Mashburn, 2000). The presence of these thoughts associated with dropping out can facilitate the disengagement process and is considered an early warning of a possible dropout situation. The intention to dropout is more frequent in first-year students (Bernardo et al., 2018; Behr et al., 2020; Lorenzo-Quiles et al., 2023). Definitive dropout refers to the cessation of institutionalized academic activities, for three or more consecutive terms (Bean and Eaton, 2001; Tinto, 1982). It is evident when a student interrupts studies before finishing university and does not enroll for two consecutive years (Acevedo, 2021).

Obtaining early warnings of eventual dropouts can facilitate the adoption of actions or interventions to mitigate them (Sáez-Delgado et al., 2020). Previous research has identified a variety of factors that contribute to dropout, including individual, academic, economic, institutional and cultural factors. However, there is a gap in the literature regarding how cognitive and motivational variables can be changed through student-teacher interactions in the teaching-learning process (López-Angulo et al., 2023). This study seeks to fill that gap by focusing on variables such as academic self-efficacy, academic satisfaction, academic engagement, and intention to dropout, which are crucial and modifiable factors that can influence student retention (Sánchez-Cardona et al., 2021; Respondek et al., 2017). The proposed study is relevant because it addresses the critical problem of university dropout by analyzing cognitive and motivational variables that are modifiable through student-faculty interaction. This research not only has the potential to improve students' well-being and academic satisfaction by identifying key factors that influence their intention to dropout, but can also inform institutional policies and practices that promote a more favorable educational environment. In addition, reducing dropout rates has important economic implications, improving the efficiency of the educational system and reducing the costs associated with dropout. Ultimately, the study contributes significantly to scientific knowledge by providing a basis for future research and practical applications in higher education (Cela et al., 2024; Holland et al., 2020; Tinto, 2017). In the present paper, the main objective was to estimate the differences in cognitive-motivational variables such as academic engagement, motivation, and academic satisfaction in groups of students who reported intention to dropout in first year of their careers and in students who dropped out of university in the second year, for which were carried two studies.

2 Study 1

Study 1 was carried out in the first academic semester. It aimed to estimate the differences in levels of academic engagement, motivation and academic satisfaction according dropout intentions.

2.1 Design

The design was non-experimental, descriptive, cross-sectional study (Ato et al., 2013). It was conducted in the university setting, without manipulation by the researchers.

2.2 Participants

A total of 3,256 first-semester university students from the 2017 and 2018 enrolled cohorts participated, with an average age of 19.2 years ($SD=1.82$ years), of these 1,638 were male (50.3%) and 1,618 female (49.7%). The students belonged to 6 universities in Chile different faculties: Faculty of Education, the Faculty of Social Sciences, the Faculty of Engineering and the Faculty of Physical and Mathematical Sciences.

2.3 Measuring instruments

2.3.1 Sociodemographic questionnaire

A questionnaire was designed to obtain information on age, sex, career and year of entry to the university.

2.3.2 Academic motivation

The Academic Self-Regulation Scale (Vansteenkiste et al., 2009) was used. It assesses autonomous motivation (e.g., “I study this career because it is fun”) and controlled motivation (e.g., “I study this career because others expect me to”). A seven-alternative Likert-type response scale was used. In this research it presented a reliability index of $\alpha=0.88$ in the dimension of autonomous motivation and of 0.87 controlled motivation (or external pressure).

2.3.3 Academic satisfaction

The Spanish version of the Academic Satisfaction Scale was used. It evaluates the degree to which students feel satisfied in general with their studies (e.g., “I am satisfied with being in this career”). A Likert-type scale with seven alternatives was used. Of the original scale, a unifactorial structure and reliability indexes of $\alpha=0.94$ are reported. The Spanish version maintains the unifactorial structure with a reliability index of 0.85 (Medrano et al., 2014). In this research it presented a reliability index of $\alpha=0.91$.

2.3.4 Academic engagement

The Spanish version of the Utrecht Work Engagement Scale Student Test UWES-9 (Schaufeli et al., 2002) was used. It evaluates the degree of engagement to studies, and is composed of three dimensions: vigor (student’s willingness to make an effort and persist during study, e.g., I feel strong and vigorous when I study or attend classes), dedication (desire to be involved in the academic activity, e.g., I am enthusiastic about my career) and absorption (state of concentration and involvement in the academic task, e.g., I am happy when I am doing tasks related to my studies). The internal consistency indices in this study were: academic engagement $\alpha=0.90$, vigor $\alpha=0.82$, dedication $\alpha=0.84$, absorption $\alpha=0.78$.

2.3.5 Intention to dropout

Three items were used: “I hope to complete my studies in this career,” “I am thinking of changing careers,” “Do you want to continue

studying the same career? A Likert-type scale of seven alternatives was used (1 = totally disagree to 7 = totally agree). The intention to dropout is the result of averaging the items (reversing the second item); an average score below 5 indicates intention to dropout. The internal consistency index was $\alpha=0.82$.

2.4 Procedure

The approaches for the development of social science research presented in the Singapore Declaration on Integrity in Research were taken into account. The students responded to the questionnaires after reading the informed consent. To obtain the results Student’s *t* test was performed for independent samples. Compliance with assumptions and homogeneity of variances were checked with Levene’s test; in cases where this was not met, a nonparametric test for independent groups was used.

2.5 Results of study 1

In order to respond to the objective of estimating the differences in cognitive-motivational variables such as academic engagement, motivation and academic satisfaction in groups of students who declared their intention to dropout in the first year of their degree, the first study identified students with intention to dropout of their first year of studies. Of the 3,256 students in the total sample, 358 were categorized as intending to dropout and 2,898 as not intending to dropout (see Table 1).

The results indicate statistically significant differences in all the variables considered, between the group with intention to dropout (1st semester) and the group without intention to dropout (Table 2). The students with intention to dropout presented lower scores for autonomous motivation, academic satisfaction and engagement than the group with intention to remain; however, the score for controlled motivation (or external pressure) is higher.

3 Study 2

Study 2 estimated differences in the levels of academic engagement, motivation and academic satisfaction between students who remained and students who had dropout in the 3rd semester.

3.1 Design

Was used quantitative approach with non-experimental design of kind longitudinal panel. Panel analysis involves following exactly the same people over the period of the study. The variables (academic engagement, motivation and satisfaction) were measured (in the first semester) and then (in the third semester) the students who dropout were identified.

3.2 Participants

A total of 2,110 students completed the second instrument measurement. The mean age of the participants was 19.3 years

TABLE 1 Descriptive statistics of cognitive and motivational variables in the first academic year.

| Cognitive motivational variables | Types of groups | N | M | SD |
|----------------------------------|---------------------|-------|------|------|
| Controlled motivation | Dropout intention | 334 | 3.29 | 1.43 |
| | Intention to remain | 2,797 | 2.65 | 1.36 |
| Autonomous motivation | Dropout intention | 348 | 4.68 | 1.24 |
| | Intention to remain | 2,828 | 5.92 | 0.89 |
| Academic satisfaction | Dropout intention | 337 | 4.67 | 1.15 |
| | Intention to remain | 2,841 | 5.89 | 0.86 |
| Academic engagement | Dropout intention | 348 | 3.98 | 1.10 |
| | Intention to remain | 2,843 | 5.12 | 0.99 |
| Vigor | Dropout intention | 351 | 3.64 | 1.35 |
| | Intention to remain | 2,872 | 4.36 | 1.30 |
| Dedication | Dropout intention | 350 | 4.17 | 1.29 |
| | Intention to remain | 2,870 | 5.92 | 1.00 |
| Absorption | Dropout intention | 352 | 4.10 | 1.25 |
| | Intention to remain | 2,866 | 5.07 | 1.12 |

TABLE 2 Differences in cognitive motivational variables with respect to intention to dropout.

| Cognitive motivational variables | Levene | t | df | p value | Mean difference* | Cohen's d |
|----------------------------------|--------|--------|--------|-------------|------------------|-----------|
| Controlled motivation | 0.049 | 7.8 | 408.53 | $p < 0.001$ | 0.64 | 0.39 |
| Autonomous motivation | 0 | -18.15 | 392.32 | | -1.24 | 0.92 |
| Academic satisfaction | 0 | -18.65 | 380.97 | | -1.21 | 0.96 |
| Academic engagement | 0.014 | -18.38 | 418.67 | | -1.14 | 0.90 |
| Vigor | 0.294 | -9.769 | 3,221 | | -0.72 | 0.17 |
| Dedication | 0 | -24.39 | 401.31 | | -1.75 | 1.22 |
| Absorption | 0.014 | -13.80 | 423.44 | | -0.96 | 0.67 |

*Negative values indicate lower scores in the group where the intention to abandon is present.

(SD = 1.83 years). The gender distribution was 1,116 males (53%) and 994 females (47%).

3.3 Measuring instruments

3.3.1 Sociodemographic questionnaire

A questionnaire was designed to obtain information on age, sex, career and year of entry to the university.

3.3.2 Academic motivation

The Academic Self-Regulation Scale (Vansteenkiste et al., 2009) was used. It assesses autonomous motivation (e.g., "I study this career because it is fun") and controlled motivation (e.g., "I study this career because others expect me to"). A seven-alternative Likert-type response scale was used. In this research it presented a reliability index of $\alpha = 0.88$ in the dimension of autonomous motivation and of 0.87 controlled motivation (or external pressure).

3.3.3 Academic satisfaction

The Spanish version of the Academic Satisfaction Scale was used. It evaluates the degree to which students feel satisfied in general with their studies (e.g., "I am satisfied with being in this career"). A Likert-type scale with seven alternatives was used. Of the original scale, a unifactorial structure and reliability indexes of $\alpha = 0.94$ are reported. The Spanish version maintains the unifactorial structure with a reliability index of 0.85 (Medrano et al., 2014). In this research it presented a reliability index of $\alpha = 0.91$.

3.3.4 Academic engagement

The Spanish version of the Utrecht Work Engagement Scale Student Test UWES-9 (Schaufeli et al., 2002) was used. It evaluates the degree of engagement to studies, and is composed of three dimensions: vigor (student's willingness to make an effort and persist during study, e.g., I feel strong and vigorous when I study or attend classes), dedication (desire to be involved in the academic activity, e.g., I am enthusiastic about my career) and absorption (state of concentration and involvement in the academic task, e.g.,

I am happy when I am doing tasks related to my studies). The internal consistency indices in this study were: academic engagement $\alpha = 0.90$, vigor $\alpha = 0.82$, dedication $\alpha = 0.84$, absorption $\alpha = 0.78$.

3.3.5 Final dropout

Data was taken from the official register of students who dropped out of university.

3.4 Procedure

In addition to the above measures, the university was asked for information on the permanence of students in the 3rd semester. Based on this information, groups of students who remained and those who dropout were formed. Descriptive results were generated, and Student's *t*-test for independent samples was used to answer the objective.

3.5 Results of study 2

We identified 321 students who were withdrawn from their university career (15.2% of the study participants) (see Table 3).

The descriptive statistical analyses indicate that the levels of autonomous motivation, academic satisfaction and academic engagement of the students who dropped out were lower than those who remained in their studies, with controlled motivation (external pressure) being the only variable in which they obtained higher scores (see Table 3). The differences between the groups are statistically significant; additionally, it was identified that there were no statistically significant differences in controlled motivation (external pressure) ($p = 0.09$) (Table 4).

TABLE 3 Descriptive statistics of cognitive-motivational variables in students who dropout in the second academic year.

| Cognitive motivational variables | Abandonment effective | N | M | SD |
|----------------------------------|-----------------------|-------|------|------|
| Controlled motivation | Yes | 310 | 2.70 | 1.42 |
| | No | 1748 | 2.55 | 1.29 |
| Autonomous motivation | Yes | 314 | 5.42 | 1.21 |
| | No | 1745 | 5.84 | 0.96 |
| Academic satisfaction | Yes | 309 | 5.24 | 1.05 |
| | No | 1748 | 5.77 | 0.91 |
| Academic engagement | Yes | 203 | 4.57 | 1.13 |
| | No | 1,185 | 5.01 | 1.03 |
| Vigor | Yes | 206 | 3.87 | 1.35 |
| | No | 1,190 | 4.24 | 1.31 |
| Dedication | Yes | 205 | 5.17 | 1.36 |
| | No | 1,193 | 5.81 | 1.09 |
| Absorption | Yes | 205 | 4.64 | 1.23 |
| | No | 1,192 | 5.00 | 1.14 |

4 Discussion

The objective of this investigation was to estimate the differences in the levels of academic engagement, motivation and academic satisfaction (1st) according to the intention to dropout of first academic year students and (2nd) between students who remained and students who dropped out in the 3rd semester, that is, in the second year of his career. The main results are discussed below, and limitations, future lines of research and conclusions are specified.

4.1 Motivation

In first-year university students, there are statistically significant differences in the levels of autonomous motivation according to the intention to abandon their studies. Students with intention to dropout showed lower scores in autonomous motivation, this result confirms the findings of research that indicate that high autonomous motivation is associated with intention to stay in university (Fernández et al., 2024). This finding underscores the importance of fostering autonomous motivation to reduce dropout rates.

Motivation as a cognitive motivational variable is linked to social factors, and moderately stable motivation could be modified based on contextual factors such as the relationship with the teacher (Duchatelet and Donche, 2019; García-Ros et al., 2018). Therefore, it is pertinent to propose that it is possible to influence these variables through the interaction of students and teachers. In this case, the role of the teacher in the development of autonomy, competence and relationship can improve autonomous motivation and reduce the intention to dropout (Huéscar and Moreno-Murcia, 2017; Oriol-Granado et al., 2017).

This result corroborates those students who show greater interest in carrying out academic activities show more persistence in their development (Corpus et al., 2020). The results found in Study 2 are consistent with those of Study 1, observing that those who had abandoned their university careers presented lower levels of autonomous motivation than those who remained. The situations that occur in motivation at the beginning of the career have an impact on performance and the intention to change careers or to dropout of university altogether (Wild and Grassinger, 2023).

4.2 Academic satisfaction

High levels of academic satisfaction favor the intention to remain in the career. This result is in line with other research showing the relationship between academic satisfaction and intention to stay in university (Meštrović, 2017; Wilkins-Yel et al., 2018). Also, high life satisfaction is associated with academic success, specifically good performance, student engagement, academic self-efficacy, defined goals, and perceived lower stress; all of these are conditions that are not present in students with medium or low levels of satisfaction (Antaramian, 2017; Díaz-Mujica et al., 2022).

The results of this study indicate that students with high levels of academic satisfaction also presented high scores in academic motivation. This finding is consistent with previous research (Vergara-Morales et al., 2019) showing relationships between academic satisfaction and different levels of motivation: poor ($r = -0.92$), low ($r = -0.66$), good ($r = -0.54$), and high ($r = 0.29$).

TABLE 4 Differences in cognitive motivational variables with respect to effective dropout.

| Cognitive motivational variables | Levene | t | df | p-value | Mean difference* | Cohen's d |
|----------------------------------|--------|-------|--------|-------------|------------------|-----------|
| Controlled motivation | 0.005 | 1.67 | 404.54 | $p = 0.09$ | 0.15 | 0.08 |
| Autonomous motivation | 0.000 | -5.90 | 385.79 | $p < 0.001$ | -0.43 | -0.30 |
| Academic satisfaction | 0.000 | -8.27 | 392.90 | | -0.53 | -0.42 |
| Academic engagement | 0.038 | -5.19 | 262.94 | | -0.44 | -0.32 |
| Vigor | 0.58 | -3.64 | 1,394 | | -0.36 | -0.10 |
| Dedication | 0.000 | -6.38 | 251.41 | | -0.64 | -0.40 |
| Absorption | 0.134 | -4.07 | 1,395 | | -0.36 | -0.11 |

*Negative values indicate lower scores in the dropout group.

Another study found that, the greater the satisfaction with the course, the greater the use of self-regulation strategies, the greater the students' engagement and the lower the intention to dropout (Bernardo et al., 2022). It is possible to affirm that students who are satisfied with their careers have sufficient motivation to develop academic activities in accordance with their interests, are motivated to learn, achieve good performance and remain in their careers.

4.3 Academic engagement

Students with the intention of dropping out in the first year presented lower scores in academic engagement and in each of its subcomponents (dedication, absorption, and vigor), with respect to students without the intention of dropping out. Students who start university with thoughts of dropping out have lower behaviors associated with dedication, sustained energy, and involvement in academic activities. Lack of dedication to university studies is a significant predictor of intention to dropout and definitive dropout (Llauró et al., 2023; Truta et al., 2018). The large effect size reported for the variable dedication ($d = 1.22$) is noteworthy, which is statistically possible (Sawilowsky, 2009), and suggests a significant difference in dedication between students with and without dropout intentions. This implies that students intending to dropout show significantly lower dedication compared to their peers.

Engagement is a positively related variable in students' academic life; an engaged student exhibits better academic performance (Qureshi et al., 2023; Tight, 2020), reports higher levels of hedonic well-being (Kaya and Erdem, 2021; Kryza-Lacombe et al., 2019) and good self-regulation skills (Ketonen et al., 2016). Research has consistently shown that a high level of academic engagement is associated with better academic outcomes and lower dropout intention (Myint and Khaing, 2020; Palos et al., 2019). Encouraging student engagement from the beginning of university studies could be a protective element for continuation of studies.

This engagement is influenced by factors such as social support, positive coping strategies, and positive perceptions of teaching competence (Palos et al., 2019). To reduce dropout rates, it is essential that universities develop strategies that foster students' academic engagement from the first year.

4.4 Strengths, limitations of the study and future lines of research

One of the main strengths of this research is the sample size, with 3,256 first-semester university students in Study 1 and 2,110 students in Study 2. A large sample size provides a robust basis for generalization of the results and increases the external validity of the study. Similarly, the inclusion of students from six different universities in Chile ensures a diversity in educational experiences and contexts, allowing for greater generalizability of the findings. The study focuses on critical cognitive and motivational variables such as autonomous motivation, academic satisfaction and academic engagement, which are essential for understanding the phenomenon of university dropout. This is one of the few studies that follows students over time and shows how cognitive and motivational variables influence not only intention but also dropout. This provides valuable information for the development of interventions aimed at improving these specific areas.

This study contributes to the understanding of the dropout phenomenon in higher education. However, among the possible limitations to be considered are the measurement instruments selected for data collection, given that these are self-report instruments and, therefore, the results should take into account the biases associated with this type of measurement. On this point, future studies could consider other data to analyze the dropout phenomenon, for example, learning analytics, available in the activity performed by students and teachers in institutional LMSs (Mella-Norambuena et al., 2023). Also, based on the evidence on the impact of teachers' encouragement of self-determined behaviors in students (Huéscar and Moreno-Murcia, 2017; Oriol-Granado et al., 2017); it will be of interest to explore in the future the behavior of the variables analyzed in the teacher-student interaction, with special attention to the way in which, through the teaching-learning process, the basic psychological needs of competence, autonomy and relatedness are satisfied in students.

5 Conclusion

(a) Students with intention to dropout present lower levels of academic engagement, autonomous motivation and academic satisfaction than students who reported intention to remain in their career; the latter, on the other hand, present higher levels of controlled motivation; (b) Students who dropped out of their careers in the 3rd

semester had lower scores for engagement, autonomous motivation and satisfaction from the beginning of their professional training than those who continued their studies; (c) The cognitive-motivational variables: autonomous motivation, academic satisfaction and academic engagement, together with the intention to dropout in the 1st semester of the career, can be used as indicators of future dropout of first-year students at the university.

This study provides specific result of the cognitive and motivational factors that influence dropout intention and actual dropout in university students. The findings suggest that improving autonomous motivation, academic satisfaction, and academic engagement may be key to reducing dropout rates and improving academic success in higher education. Higher education institutions should focus on improving students' academic experience to reduce dropout rates (Meštrović, 2017; Wilkins-Yel et al., 2018). Implementing support and counseling programs that increase satisfaction and motivation could be an effective strategy to keep students engaged in their studies. Programs that teach time management techniques, effort regulation, and study environment management can help students improve their academic performance and overall satisfaction. Similarly, academic purposes can be fostered as they provide meaning, motivation, and direction, acting as self-regulatory mechanisms for academic behavior (López-Angulo et al., 2024). Incorporating counseling and psychological support services into the curriculum and university life can provide students with the resources they need to manage stress and emotional challenges, which in turn can improve their academic satisfaction and reduce dropout intention. This includes providing a learning environment that supports autonomous motivation and offers robust academic and emotional support. Integrating activities that promote dedication, absorption, and vigor into learning experiences can help keep students engaged and reduce intent to dropout.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by ethics committee of the University of Concepcion Comité Ético Científico de la Universidad de Concepción. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

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Author contributions

YL-A: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. RC-R: Writing – original draft, Writing – review & editing. FS-D: Writing – review & editing. JM-N: Writing – review & editing. MP-V: Writing – review & editing. AD-M: Writing – review & editing.

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