A potential exodus: what is behind dropping out intentions among university students?

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Introduction: The alarming dropout rates among university students in Peru deplete the country's human resources and reduce prospects for personal growth and societal development. Explaining those rates calls for a comprehensive and holistic approach beyond the students' socio-economic characteristics. This study seeks to identify the socio-demographic, academic and psychological variables that predict dropout intention among university students in Peru.

Materials and method: The sample was composed of 768 students from nine universities, both public and private, across the coastal, highland and rainforest regions of Peru. Students completed questionnaires assessing factors that favor resilience, future orientation, and dropout intention.

Results: As hypothesized, we found that students who scored higher on factors favoring resilience and future orientation subscales, with the exception of the exploration sub-dimension, were less likely to develop dropout intentions. We found differences by sex and type of university; then evaluated whether the model parameters varied by sex. Our findings show higher dropout intentions among male students. No significant relationships were found between grades, tutoring programme and future orientation.

Discussion: Results contribute to support these university students as valuable human resources who, due to Peru's characteristics, lack easy access to higher education and should be protected. Our findings also provide general guidelines for further interventions to counter the risk of increased dropout rates at the university level.

KEYWORDS

future orientation, factors favoring resilience, dropout intentions, tutoring programme, university students

1 Literature review

Education is widely acknowledged as pivotal for human development and it is essential to promote sustainable economic growth (Higuera et al., 2023). In Peru, the 15–29 demographic cohort comprises 23.58% of the labor force. Within this group, only 19.4% hold university degrees, while 16.8% have non-university qualifications, and 52.7% only completed secondary education (Instituto Nacional de Estadística e Informática, 2022). In addition, according to the Ministry of Education of Peru (Ministerio de Educación, 2022), 23.2% of individuals under 30 have dropped out of university. These statistics highlight a significant loss of valuable human resources and raise questions about the ultimate fate of these students, with a considerable number likely to end up working in fields that may not align with their personal interests. This underscores the urgent need to investigate the underlying predictors of university dropout, especially since such decisions are shaped by a complex interplay of factors (Lizarte Simón and Gijón Puerta, 2022).

University dropout rates do not depend exclusively on socioeconomic conditions or the educational system. They are a multidimensional phenomenon impacted by socioeconomic, sociodemographic, academic, and psychological factors (Díaz Peralta, 2008; Herrera, 2019; Nussbaum, 2000). This study aims to explore the relationship between psychological protective factors, such as resilience and future orientation, and dropout intentions. Additionally, it will examine the role of two key antecedents—tutoring programs and GPA—and discuss how these factors interact with various sociodemographic characteristics in shaping students' decisions to leave university.

Taking into consideration psychological explanations about career decisions among Peruvian adolescents, research findings show that career plans are not always aligned with the goals students initially set for themselves at the end of their secondary schooling (Herrera, 2002). These findings have prompted researchers to consider whether the careers or jobs of young Peruvians articulate their interests, skills, plans, and goals, or the requirements of the labor market (Herrera, 2019; Lens et al., 2012).

This study seeks to understand the specific role of protective factors that strengthen students' capabilities to diminish their academic dropout intentions. Several Latin American studies have highlighted that both protective and risk factors play a crucial role in the decision to drop out at the individual level (Chalela-Naffah et al., 2020; Chalpartar Nasner et al., 2022; Dávila Morán et al., 2022; Lopez Angulo et al., 2021; Poveda, 2019). Given that protective factors have the potential to mitigate dropout risk, in this study we examine the impact of the former: resilience and future orientation. Both have been shown to counterbalance adversity and support individuals in navigating academic challenges (Cusack et al., 2016; Seginer, 2008).

1.1 Resilience

Resilience is a powerful protective factor in the development of human potential (Aburn et al., 2016; Cárdenas-Jiménez and López-Díaz, 2011; McKinley et al., 2019; Turner and Holdsworth, 2022; Wilks, 2008). Researchers define it as an individual and dynamic process of positive and interactive adaptation to the environment (Luthar et al., 2000). It encompasses a complex, holistic, and cyclical system that involves the human capacity to cope with, overcome, and be strengthened or transformed by experiences of adversity (Grotberg, 2003; Henderson, 2003).

Before defining resilience, researchers focused on identifying qualities that help children confront adversity, initially studying vulnerability and risk factors (Anthony and Koupernik, 1974). Werner and Smith's (1982) 30-year study of children born in adverse conditions in Hawaii found that 30% displayed traits like self-discipline, communication skills, motivation, and self-confidence, which enabled them to overcome challenges despite family conflict, health issues, and poverty. Unlike others, these resilient children formed close bonds with at least one stable caregiver, which supported their resilience (Muñoz-Silva, 2012; Werner and Smith, 1982). This study paved the way for examining both individual attributes and environmental factors that reduce the likelihood of negative behaviors (García Del Castillo et al., 2016; Garmezy, 1974; Luthar et al., 2000; Masten et al., 1990; Uriarte, 2005).

Based on empirical research, resilience is indicated by cognitive-individual and interpersonal factors (Cusack et al., 2016; Garcia-Vesga and Dominguez-de la Ossa, 2013; Ponce-García et al., 2015). In the first dimension, two variables contributing to resilience are salient: future planning and goal-efficacy. Studies have found that future planning, the process by which an individual formulates goals and develops plans to achieve those goals, has important effects on decision making about career life (Fahmi and Ali, 2022). Furthermore, this construct is also associated with self-confidence and self-efficacy (Fahmi and Ali, 2022). Along similar lines, goal-efficacy, which reflects confidence in one's ability to accomplish goals and succeed, was proven to be an important factor negatively associated with dropout intentions (Bardach et al., 2019), while commitment to achieving personal and career goals was a frequent reason reported by students as helping them to stay at university (Nieuwoudt and Pedler, 2023).

The interpersonal dimension of resilience is represented by social support and social skills. For instance, social support has been identified as an important factor in students' decisions to remain at university (De la Cruz-Campos et al., 2023; Nieuwoudt and Pedler, 2023), including support from family (Villafrade and Franco, 2016), academic supervisors and institutional resources (Zhang et al., 2024). The social skills variable acts in ways similar to social support, integrating the interpersonal dimension associated with resilience. Research has shown that social skills, empirically proven to support processes of resilience, are an important protective factor against stress (Luthar, 1991), associated with a lower risk of student dropout (Marschall et al., 2023).

1.2 Future orientation

Future orientation is a subjective representation of the future; it regulates present behaviors and actively engages individuals in the formulation of clear plans for accomplishing their future goals, according to their age, gender and culture. Those plans are then applied to different life domains, among which career or family are prioritized depending on the developmental stage (Seginer, 2009). It should be noted that images of the future are constructed on the basis of contents that can be personal or social, realistic or ideal (Stolarski et al., 2015).

Future orientation has been empirically represented as a three-component model wherein the motivational, cognitive, and behavioral dimensions are connected in a sequence (Seginer, 2009, 2017). As previously noted, future orientation can be analyzed in different domains during adolescence and youth: career/education and family. This study focuses on the career/education domain, since adolescents and young people already inserted in the educational system tend to center their plans on the career domain (Herrera, 2019). Furthermore, focusing on this life domain in university students allows for a more precise analysis of these youngsters' plans and perceptions of their future academic and professional lives. Nevertheless, it should be remarked that, in either domain (career/educational or family) the motivational component leads directly and in parallel to the behavioral dimension (Seginer, 2009, 2017; Seginer et al., 2004) (see Figure 1).

According to the model, three empirical variables function as indicators for the motivational component: the value of future goals, the subjective expectation or probability that plans will materialize, and the person's sense of internal control or responsibility to realize them (Seginer, 2009, 2017). The cognitive component refers to the extent to which the person thinks about the future in terms of hopes and fears. The behavioral component involves exploration, which includes seeking information and advice about future options, as well
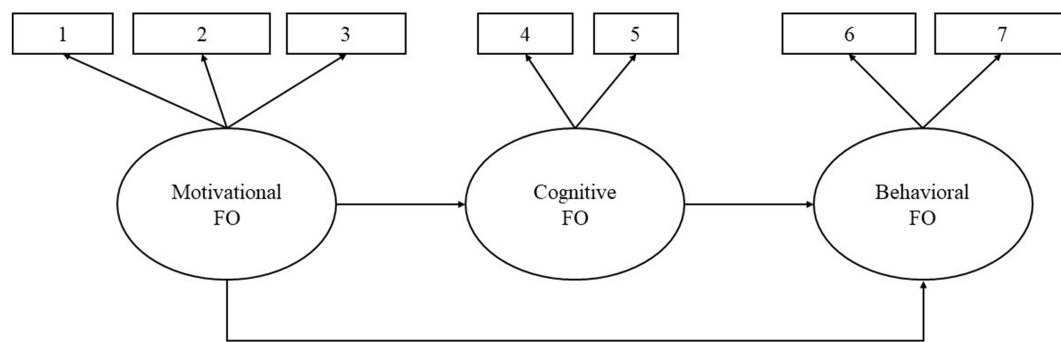
FIGURE 1
The future orientation three-component model. The figure is extracted from Seginer (2017). 1 = Value, 2 = Expectance, 3 = Internal Control, 4 = Hopes, 5 = Fears, 6 = Exploration, 7 = Commitment.

as testing whether those options fit with personal skills, values, and social and environmental expectations (Lewin, 1939; Seginer, 2009, 2017; Stolarski et al., 2015). Commitment refers to the decision to pursue an option and obtain results (Erikson, 1968, p. 165; Stolarski et al., 2015).

It is essential to point out that future orientation plays a vital role in setting clear goals (Seginer, 2008). In educational contexts, when career goals are perceived to be in jeopardy, under Seginer (2009) multidimensional model, the hope subcomponent of future orientation becomes crucial. Empirical investigations consistently emphasize that psychological and academic outcomes tend to be healthier for individuals and students with a clear and stable future orientation (Liu et al., 2023; Stoddard and Pierce, 2015). This subjective representation of future goals within the educational domain reinforces academic hopes and self-efficacy, which in turn help students overcome obstacles (Seginer, 2008) and reduce the likelihood of dropping out.

In sum, future orientation regulates behavior motivationally, fosters persistence, and supports the achievement of long-term objectives (Averill et al., 1990; Lin et al., 2024; Pawlak and Moustafa, 2023), all of which are essential in reducing the probability of dropout intentions. It is noteworthy that research from the early 2000s pointed out that these effects are linked to career exploration and clearly defined professional goals (Gushue et al., 2006; Yowell, 2000). In line with this, theories of future-oriented self-regulation argue that specific and individualized future goals guide the creation of instrumental subgoals. These subgoals help students select tasks that contribute to future goal attainment, while shaping different levels of engagement in the pursuit of those goals (Miller and Brickman, 2004).

Future orientation and resilience are both important variables to study in addressing student dropout. For instance, Schmid and Lingas (2022) identify several factors that promote resilience in a vocational context. According to their findings, factors such as commitment to learning, perseverance, self-regulated learning, goal orientation, self-efficacy, and help-seeking are crucial for enhancing resilience among students. Similarly, Lin et al. (2024) highlight the bidirectional relationship between individual characteristics and contextual factors, which together influence various aspects of behavior. Additionally, when future orientation was explored in students who had difficult learning experiences and were inserted in contexts that reinforced a negative self-perception of their academic capabilities, it was found that they do not prioritize long term goals; instead, they explicitly report
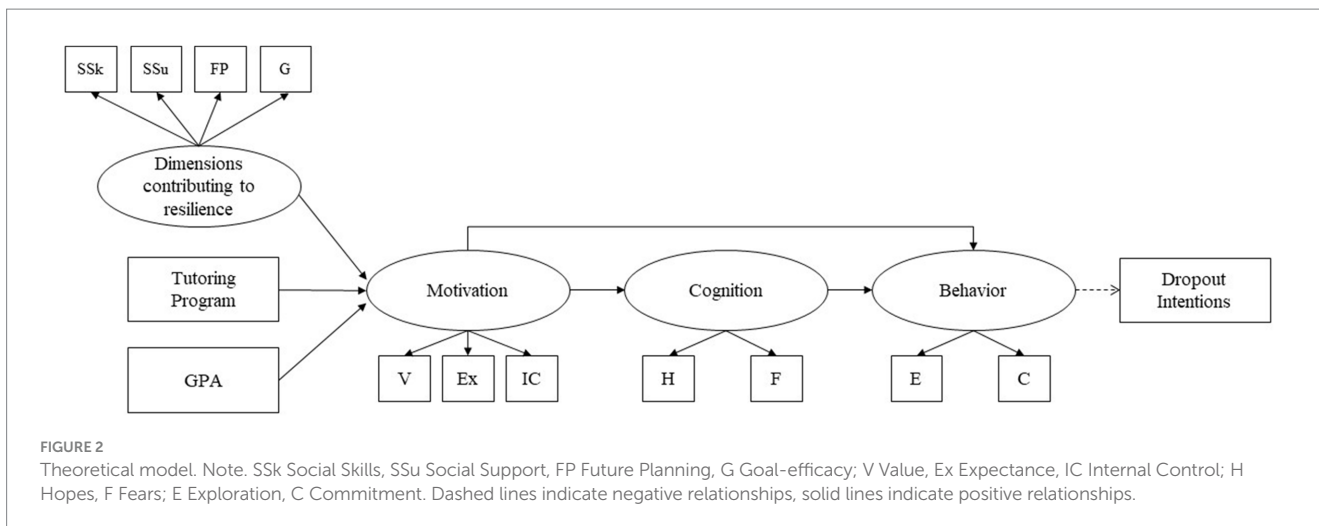
preferences for short-term courses and undemanding occupational activities (Arkin and Cojocaru, 2020). University careers and the subsequent path of working in the selected field requires far-reaching goals. Therefore, this study aims to explore how both variables, individual and interpersonal, may negatively predict dropout intentions. Identifying them will help university authorities orient policies and preserve valuable resources (De Witte et al., 2013; Lehr et al., 2003; Morelli et al., 2023).

1.3 Protecting factors of dropout intentions

In light of the above, identifying protective factors is crucial to prevent university attrition. University dropout is a multidimensional phenomenon defined as the abandonment of an academic program before graduation, which significantly impacts the future life of students (Lopez Angulo et al., 2021; Poveda, 2019). Attrition, however, refers to events that have already occurred. Therefore, identifying protective factors related to the *intention* to drop out, which appears mostly during the first 3 years of study, before career abandonment takes place (Bean and Metzner, 1985), is key. These early intentions have been proven a valid predictor of dropout (Findeisen et al., 2024). This is why the present research model considers dropout intention as a criterion variable (see Figure 2).

In order to identify predictive factors related to potential dropout, additional indicators have been considered, including performance and tutoring as academic and institutional variables. Tutoring is relevant because it provides students with personal as well as academic support (Dávila Morán et al., 2022; Morelli et al., 2021). Furthermore, considering previous findings, sex was included as a relevant variable because some studies have found lower dropout rates for women than for men (González, 2005), while others report the opposite result (Graciano and Orozco, 2022; Meyer and Strau, 2019).

In sum, the present study aims to test the hypothesized model by positing that protective factors favoring resilience, performance and tutoring, mediated by the career domain of future orientation, negatively predict dropout intention (see Figure 2). Furthermore, the study also seeks to determine which variables, be it sociodemographic, academic (performance and tutoring) or psychological (protective factors favoring resilience and future orientation), predict dropout intention in students of public and private Peruvian universities.

FIGURE 2
Theoretical model. Note. SSk Social Skills, SSu Social Support, FP Future Planning, G Goal-efficacy; V Value, Ex Expectance, IC Internal Control; H Hopes, F Fears; E Exploration, C Commitment. Dashed lines indicate negative relationships, solid lines indicate positive relationships.

To develop this study, the following research questions were specified: (1) To what extent do factors contributing to resilience, past academic achievement (GPA), and the existence of a tutoring program at the university serve as protective factors against students' dropout intention?; (2) Does future orientation mediate the relationship between factors contributing to resilience, past academic achievement (GPA), and the existence of a tutoring program on students' intention to drop out of university?; (3) Is the hypothetical research model invariant by sex?; and (4) Are there demographic differences (career, university type, and student role) in the relationship between resilience, GPA, and the existence of a tutoring program and students' dropout intention?

This study's hypothetical model postulates that factors contributing to resilience, GPA, and the existence of a tutoring program at the university predict dropout intention mediated by future orientation.

2 Materials and methods

2.1 Participants

The sample for this study consisted of 768 university students aged 18–30 (230 male, 532 female, and six who preferred not to report their sex), enrolled in the first 3 years of their undergraduate programmes. Data collection took place during the first weeks of the first/s semester of the 2022 academic year.

Careers were diversified along the universities selected, but the majority of participants were enrolled either in a health-related field ($n = 285$), engineering ($n = 164$) or humanities ($n = 85$). Participants' mean age was 21.46 years and the majority were single ($n = 736$). A number of additional socio-demographic variables were used to characterize the sample, among them: current semester of enrollment (second to fourth = 33.98%; fifth to seventh = 39.71%; eighth to tenth = 26.30%), self-perceived socioeconomic level (High = 1.95%; Medium = 63.02%; Low = 35.03%), participant's other roles (study only = 41.80%; study and work = 58.20%), parents' educational level (Father: not educated = 1.56%; secondary = 28.91; university/technical = 66.01%; others = 3.52%. Mother: not educated = 0.78%; secondary = 30.34%; university/technical = 67.84%; others = 1.04%).

First semester students were excluded because their previous grades were not available yet.

All universities selected for the study were licensed by SUNEDU (Peru's National Superintendence of Higher Education, in its Spanish acronym) (Superintendencia Nacional de Educación Superior Universitaria, 2020, 2023) and had operated for at least 10 years. They are all members of the *Red Peruana de Universidades* and represent three regions of the country (coast, highlands, and rainforest). The Vice President for Research of the university conducting the study contacted the nine vice chancellors from the other institutions and invited them to participate. Thus, the total number of universities adds up to nine: three from the coast ($n = 332$), two from the highlands ($n = 182$) and four from the rainforest region ($n = 254$). After each student's consent and the Ethical Committee's green light were obtained, students were asked to complete self-report questionnaires. It should be noted that eight of the participating universities offered tutoring programmes for students and one was in the process of implementing it.

We contacted 1,597 students. Of this group, 48 declined to participate. Many completed the questionnaire only partially and were excluded from the sample. Only 768 completed the questionnaire in full. These students voluntarily participated in the research project and provided active consent. Participants interested in learning the research results had the option to provide their email address and be contacted at the end of the study.

2.2 Measures

2.2.1 Scale of protective factors (SPF-24) of resilience Spanish version

The questionnaire was developed by Ponce-García et al. (2015) to assess four protective factors categorized in two dimensions (cognitive-individual and interpersonal factors) previously described (see page 2). These factors were empirically proven as determinants of resilience by past research (Reich et al., 2010 in Ponce-García et al., 2015). It features 24 items divided into four factors: (a) Social Support (i.e., *My friends/family keep me up to speed on important events*), (b) Social Skills (i.e., *I am good at making new friends*), (c) Future Planning (i.e., *When working on something, I do better if I set a goal*), and (d)

Goal-Efficacy (i.e., *I am confident in my ability to succeed*). Participants evaluated each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). In the original version of the scale, validity evidence according to the internal structure was favorable. The Spanish version confirmatory factor analysis reported adequate fit indexes ($\chi^2 = 516.34$, df = 239, $p < 0.001$, CFI = 0.946, RMSEA = 0.059), ultimately retaining 24 items of the scale. Furthermore, validity evidence based on the relation with other variables was supported using two common measures of resilience, the Connor-Davidson Resilience Scale (CD-RISC; Connor and Davidson, 2003) and de Resilience Scale (RS; Wagnild and Young, 1993). The scale showed satisfactory internal reliability indices of 0.89 for goal-efficacy, 0.92 for social skills, 0.89 for planning and 0.86 for social support. In the present study, the factor structure of the scale was replicated by a confirmatory factor analysis with good fit ($\chi^2 = 1707.506$, df = 246, $p < 0.001$, CFI = 0.996, RMSEA = 0.069, SRMR = 0.048). Factor loadings were significant ($p < 0.001$) and ranged between 0.68 and 0.94. Cronbach's alphas were 0.86 for social support, 0.93 for social skills, 0.91 for future planning and 0.95 for goal-efficacy.

2.2.2 Prospective life course questionnaire

This self-reported questionnaire developed by Seginer (2009) registers thoughts and opinions regarding Future Orientation in two life domains: career/work and family. Given our objective of analyzing factors that lead students to drop out of university, we focused on the career/work domain (see page 3). It assesses three dimensions or components (motivational, cognitive, and behavioral) of the FO construct in the domains of career/work and family. The 35 items included in the questionnaire collect information using either semantic differential or Likert-type scales (1 = *never* or *definitively does not describe me* and 5 = *daily* or *definitively describes me*). The motivational component is integrated by value, expectance, and internal control (16 items; example of item: *Considering the materialization of my career plans, I am optimistic*). The cognitive component or cognitive representation refers to future hopes and fears (7 items; example of item: *Thinking about your future career, how often does your education make you think hopefully about it?*). Finally, the behavioral component consists of exploration and commitment (12 items; *Header: Which of the following things have you been doing now to get you closer to realizing your career plans? … "Talking to people"; "Collecting information"*). Items have the same structure but different content according to each domain (work/career or family).

Seginer (2009) proposed a psychometrically supported measurement model of future orientation for Israeli adolescents and students. Nevertheless, in a sample of 354 psychology students from three private universities in Lima, Peru, the questionnaire's psychometric properties were only partially supported (Herrera et al., 2024). In Peruvian samples, reliabilities for the factors have ranged from 0.62 to 0.90; but the hierarchical factor structure proposed in Seginer (2009) was not replicated. It is likely that cultural differences between Israeli and Peruvian youths could explain the differences in fit.

In the present study, a hierarchical model did not converge, either. Thus, we fit a seven-factor model for the lower order dimensions or subscales which fit adequately to the data ($\chi^2 = 2462.964$, df = 573, $p < 0.001$, CFI = 0.976, RMSEA = 0.074, SRMR = 0.070). All factor loadings were significant ($p < 0.001$), except for one item in the exploration scale. Reliability for the seven subscales was satisfactory: value (0.85), expectance (0.84), internal control (0.86), hopes (0.78), fears (0.83), exploration (0.70), and commitment (0.84).

2.2.3 Transitions from education to employment-TREE

To assess the intention to abandon university studies, evidence reported by Findeisen et al. (2024) was considered, as it has been shown to be a reliable predictor of university attrition. Therefore, this instrument created by Stalder et al. (2011) measures dropout intention in higher education using 1 item. (i.e., *What do you generally think of your education lately: As soon as I find something better, I will change my education/apprenticeship*) It was rated on a scale from 1 (hardly ever) to 7 (almost always). Three expert judges (psychologists with fluency in English) independently validated the item's Spanish translation. Unanimity for the new version was declared when the new item was: *En este año académico, ¿qué es lo que usualmente piensas acerca de tus estudios?: Tan pronto encuentre algo mejor, dejaré de estudiar y me dedicaré a lo otro.*

2.2.4 Grade point average (GPA) and tutoring programme

GPA consisted of self-reporting the average score from the previous semester to the current one, which ranges from 0 to 20 points. The presence of tutoring programmes was checked on the participant universities' websites, so that if there was an active tutoring address or office, the student was assumed to have access to this service.

2.3 Procedure

We carried out data collection online during two semesters. The first was between March and July, 2022; 7 universities were contacted, 3 in the coastal region (2 private, 1 public), 2 in the highlands (1 private, 1 public) and 2 in the rainforest region (2 public). The second was between August and November, 2022; five universities were contacted, all public: 2 in the coast, 1 in the highlands and 2 in the rainforest region. After requesting consent, a total of nine universities sent the virtual questionnaires via Qualtrics, between the start of classes and the week of mid-term exams.

2.4 Data analysis

We tested our theoretical model through structural equation modeling, using lavaan version 0.6.15 (Rosseel, 2012). We used robust maximum likelihood to estimate model parameters. Our model includes a latent variable for protective factors and for the motivational and behavioral components of future orientation. Due to convergence issues, we were unable to model the cognitive component of future orientation as a latent variable, and opted instead for modeling hopes and fears as observed variables, as shown in Figure 1. We used *t*-tests and ANOVA for ancillary analyses comparing study variables by demographic subgroups. For sex analysis, participants who did not report their sex ($n = 6$) were excluded given the small size of the group.

This study was not pre-registered. The raw data from this study can be shared with interested scholars who request them from the corresponding author.

3 Results

As shown in Table 1, the two dimensions that indicate resilience (cognitive-individual and interpersonal) were mainly positively correlated with the subcomponents of future orientation. Meanwhile, students' GPA, the dimensions of resilience, and almost all future orientation variables except exploration were negatively and significantly correlated with dropout intention. These results suggest that students who are high achievers, score higher on future orientation dimensions, and prioritize factors contributing to resilience are less likely to consider dropping out of university. However, fears were positively correlated with the intention to abandon their studies.

As shown in Figure 3, we fit a structural equation model to our data. The model fit reasonably well ($\chi^2 = 232.273$, df = 72, $p < 0.001$, CFI = 0.926, RMSEA = 0.069, SRMR = 0.052). All factor loadings were significant ($ps < 0.001$) and ranged between 0.46 and 0.93. The motivational component of future orientation (including the three empirical variables: value, expectance and internal control) was positively preceded by the cognitive-individual and interpersonal dimensions that indicate resilience ($\beta = 0.61$, $p < 0.001$), but not by students' GPA ($\beta = 0.06$, $p = 0.133$) nor by the existence of a tutoring programme at the university ($\beta = 0.04$, $p = 0.315$). As predicted by the future orientation model, motivation positively predicted hopes ($\beta = 0.62$, $p < 0.001$), negatively predicted fears ($\beta = -0.13$, $p = 0.002$), and positively predicted the behavioral component of future orientation ($\beta = 0.96$, $p < 0.001$). Hopes and fears did not predict the behavioral component of future orientation once motivation was accounted for ($\beta = 0.00$ and 0.00, $ps = 0.953$ and 0.953, respectively). However, students with higher levels of the behavioral component of future orientation had lower dropout intention ($\beta = -0.38$, $p < 0.001$). This provides evidence for future orientation mediating the relationship between the dimensions that contribute to resilience and dropout intentions.

3.1 Sex differences in the structural parameter estimates

Because we found significant differences between our study variables by sex, we evaluated our model's invariance to that variable. Specifically, we compared configural invariance (the structure of the model is the same across groups, but all parameters are freely estimated by sex), metric invariance (factor loadings are constrained to be equal across groups), scalar invariance (means are constrained to be equal across groups), and structural invariance (regression paths are also constrained to be equal across groups). As shown in Table 2, models fit separately for male and female students had the same factor loadings, but different means and regression weights. See Supplementary Table S1 for details on the means and regression weights by sex.

3.2 Secondary analyses

We tested differences in the study variables by demographic subgroups. Consistent with previous research findings (Goldin et al., 2006; Reeves and Smith, 2021), which reveal better performance in

academic settings for women than for men, we found that male students' dropout intentions ($d = 0.27$, $t = 3.07$, $p = 0.002$) were higher than female students'. In addition, we found that students in private universities had higher levels of value (future orientation, motivation subscale, $d = 0.22$, $t = 2.56$, $p = 0.011$) than students in public universities. The latter group had higher levels of social skills ($d = -0.20$, $t = -2.57$, $p = 0.011$), goal-efficacy ($d = -0.23$, $t = -2.94$, $p = 0.003$), and hopes ($d = -0.21$, $t = -2.47$, $p = 0.014$). These results contrast with long-standing stereotypes about public university students (Barreda-Parra et al., 2022; Chowdhury, 2006; De Feyter et al., 2012; Komarraju et al., 2011).

When comparing full-time students with students who also worked, the latter had higher dropout intentions ($d = 0.25$, $t = 3.06$, $p = 0.002$), and lower social support ($d = -0.16$, $t = -2.10$, $p = 0.036$); but higher social skills ($d = 0.34$, $t = 4.34$, $p < 0.001$), future planning ($d = 0.19$, $t = 2.49$, $p = 0.013$), goal-efficacy ($d = 0.17$, $t = 2.21$, $p = 0.027$), expectance (future orientation, motivation subscale, $d = 0.25$, $t = 3.14$, $p = 0.002$), hopes (future orientation, cognitive subscale, $d = 0.27$, $t = 3.27$, $p = 0.001$), and exploration (future orientation, behavior subscale, $d = 0.17$, $t = 2.11$, $p = 0.035$). It is noteworthy that students in the humanities had higher dropout intentions compared to students in health-related careers ($d = 0.62$, $t = 4.37$, $p = 0.002$). Our findings provide preliminary evidence that these variables diverge significantly between demographic characteristics.

However, interactions between sex and career were not predictive of dropout intentions (i.e., all interaction terms in a predictive model of dropout intentions based on sex and career were non-significant). In other words, men were more likely to have higher dropout intentions than women, regardless of their field of study. All p-values were adjusted for multiple comparisons using the Benjamini-Hochberg correction. For additional details regarding sociodemographic differences (see Supplementary Table S2).

4 Discussion

This study examined how psychological factors favoring resilience, as well as students' GPA and tutoring programmes, indirectly influence dropout intentions via future orientation among students in Peru. We found that students who scored higher on the variables that favor resilience (social support, social skills, future planning, and goal-efficacy) and reported a clear and positive future orientation were less likely to consider dropping out.

Our findings reaffirm the crucial role of factors that favor resilience in preventing student dropout. Previous studies have reported similar results (Altharman et al., 2023; Pertegal-Felices et al., 2022). Nevertheless, our research provides evidence of a distinct relationship emerging from the examination of factors that contribute to resilience, extending beyond resilience as a trait. Meanwhile, a systematic review (Pawlak and Moustafa, 2023) of the impact of Future Orientation on academic outcomes underscores the relevance of this construct. Clearly, students who score high on future orientation exhibit higher academic engagement. Some key indicators of this engagement include regular class attendance, active participation, and fewer absences. Such findings suggest that fostering a future-oriented perspective could be instrumental in curbing student attrition at the university level. By linking academic success to

TABLE 1 Means, standard deviations, and correlations coefficients of study variables.

|	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age																
2. Sex	−0.13***															
3. Tutoring	−0.03	−0.11**														
4. GPA	−0.13***	0.19***	−0.17***													
5. Social skills	0.11**	0.01	0.05	−0.01												
6. Social support	−0.01	−0.02	−0.01	0.14***	0.53***											
7. Planning	0.04	0.02	0.08*	0.09*	0.62***	0.58***										
8. Goal-efficacy	0.08*	−0.07†	0.07†	0.04	0.70***	0.57***	0.82***									
9. Internal control	0.10*	0.05	0.00	0.08*	0.39***	0.33***	0.38***	0.38***								
10. Expectance	0.14***	−0.05	0.06	0.05	0.40***	0.32***	0.40***	0.48***	0.52***							
11. Value	0.04	−0.03	0.02	0.15***	0.12**	0.21***	0.20***	0.19***	0.25***	0.49***						
12. Hopes	0.08†	0.01	0.07†	0.06	0.26***	0.24***	0.35***	0.37***	0.44***	0.49***	0.25***					
13. Fears	0.01	0.04	0.04	−0.09*	−0.05	−0.14***	−0.09*	−0.10*	−0.06	−0.18***	−0.08*	0.09*				
14. Exploration	−0.01	−0.04	0.00	0.04	0.30***	0.22***	0.32***	0.28***	0.43***	0.29***	0.14***	0.36***	0.03			
15. Commitment	0.06	0.01	0.06	0.05	0.31***	0.32***	0.39***	0.39***	0.53***	0.60***	0.28***	0.43***	−0.10*	0.38***		
16. Dropout Intentions	0.03	−0.13**	0.00	−0.12**	−0.13**	−0.16***	−0.20***	−0.21***	−0.23***	−0.33***	−0.25***	−0.18***	0.12**	−0.03	−0.31***	
M	21.46			1 4.75	4.94	4.78	5.16	5.39	4.27	3.76	4.17	3.90	3.66	3.56	4.01	2.42
SD	2. 2.54			1.81	1.43	1.22	1.28	1.36	0.79	0.79	0.88	0.87	1.05	0.69	0.83	1.76
n	768	762	768	730	691	691	691	691	634	634	597	597	597	634	634	591
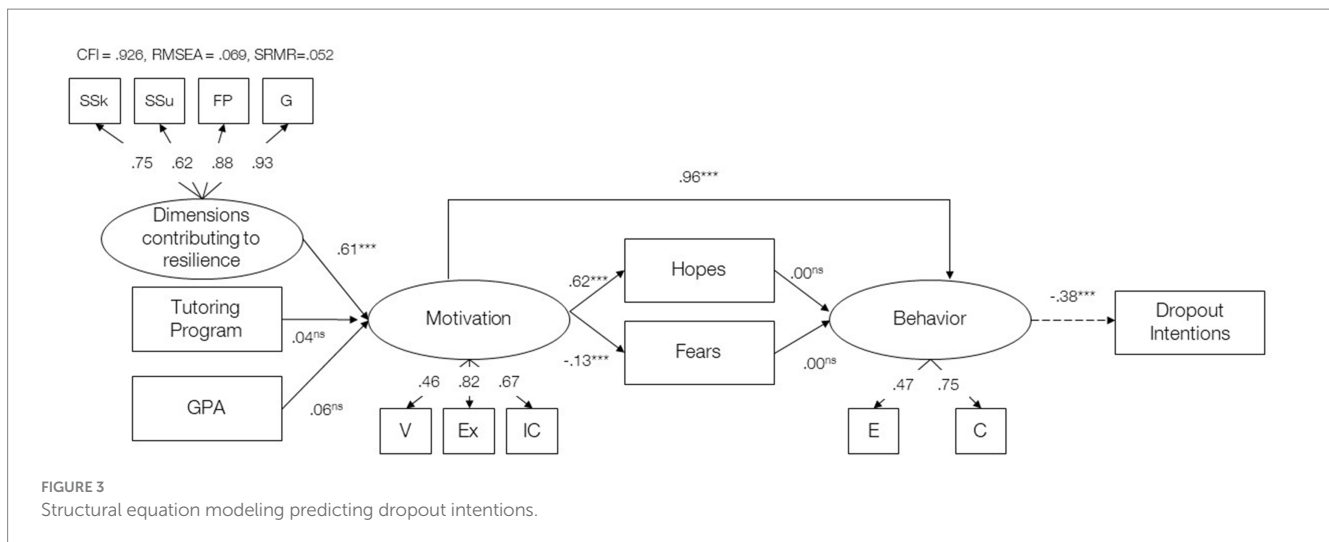
FIGURE 3
Structural equation modeling predicting dropout intentions.

TABLE 2 Invariance tests based on multigroup SEM for sex.

	Model statistics					Difference			
	CFI	RMSEA	df	AIC	BIC	X^2	ΔX^2	df	p
Configural invariance	0.927	0.069	144	17,111	17,475	338.45			
Metric invariance	0.925	0.069	150	17,110	17,447	349.00	7.95	6	0.242
Scalar invariance	0.919	0.069	159	17,116	17,415	373.56	28.08	9	<0.001
Structural invariance	0.914	0.07	168	17,121	17,381	396.34	18.64	9	0.028

long-term goals and career prospects, educational institutions have an opportunity to leverage the positive impact of future orientation for the enhancement of student commitment, which will ultimately contribute to reducing attrition or dropout intention rates (Pawlak and Moustafa, 2023).

In accordance with our empirical model, this study's findings indicate that among the three antecedent variables that impact dropout intention indirectly via future orientation, resilience has a considerably stronger impact than educational achievement (GPA) and institutional provisions (tutoring programme). Comparatively, having higher grades at baseline or attending a university that provides tutoring support were unrelated to dropout intention. These results bolster the growing literature (Arakaki et al., 2019; García Del Castillo et al., 2016; Herrera, 2019; Pérez and Mejía, 1998; Seginer, 2008; Von Bargen, 2011) on the importance of protective factors that contribute to the maintenance and growth of human resources and human capabilities, both individually and contextually, among other aspects (García Del Castillo et al., 2016; Pérez and Mejía, 1998; Von Bargen, 2011).

When analyzing other specific variables, the psychological literature suggesting that attrition is related to sex as a function of career must also be considered. For example, male students in Australian universities show a tendency to drop out when inserted as practitioners in pre-school services (Kirk, 2020), while dropout rates among female students in the United States are higher when careers are linked to the science domain (Fisher et al., 2022). As noted above, and consistent with previous research (Lizarte Simón and Gijón Puerta, 2022), our study found no significant interaction between sex

and career, perhaps due to insufficient statistical power. We suggest analyzing this relationship in further studies with larger samples.

This study reveals a notable trend where men express higher dropout intentions. The pattern aligns with findings in the United States, where the gender gap in education shifted to a 14% advantage for women in 2019 in contrast with 1972, when men were 12% more likely to earn a bachelor's degree, and where males are less likely to graduate high school and complete college (Reeves and Smith, 2021). Similar observations have been made globally since 2002, with a growing gender gap favoring female students and most OECD countries enrolling more women than men in college (Goldin et al., 2006). Although our study reveals a positive correlation between women and GPA, its significance in the model is inconclusive, emphasizing the need for future research using standardized data and stronger correlations for a more accurate prediction of this relationship.

The growing gap between men and women is often attributed to the increasing participation of women in the labor force and structural changes in the economy (Parker, 2021). Some relevant studies confirm that socioeconomic status, age at first marriage, and more effective birth-control methods are also key explanatory factors (Goldin and Katz, 2002; Goldin et al., 2006), but it is noteworthy that additional psychological and social dimensions are yet to be investigated in detail. Further studies are needed to explore the reasons for these differences across ethnic and socioeconomic groups.

It is important to note, also, that we found no relevant differences in dropout intention between students by region, even though SUNEDU data (2020) does reveal regional differences in dropout rates. Even allowing for the fact that dropout intention is distinct from

actual dropout, the differences reported suggest the need for further research into variations between and within regions, in a country where a vastly unequal distribution of resources between the capital and the provinces (Vargas, 2015) may be yet another factor promoting student dropout, as young people are often forced to leave home in order to continue their studies.

Another relevant variable investigated in this study was the type of university. There are a total of 96 accredited universities in Peru, 48 of them private and 48 public, as recorded by national entities (Superintendencia Nacional de Educación Superior Universitaria, 2023). Our research found differences in terms of protective psychological factors between the two types of institutions. Students in private universities reported higher value of their career, the only protective factor distinguishing them from their peers in public universities. On the other hand, public university students scored higher in social skills, goal-efficacy, and hopes. These findings are quite surprising, as they contradict the prevailing stereotype that social skills are less developed in public-system students. The stereotype was explored by Barreda-Parra et al. (2022), who reported that students in public universities experience poorer interpersonal and social relationships due to gender stereotypes. Nevertheless, other research has shown that even though public university students report higher neuroticism, suggesting that they are more likely to display emotional instability and poor impulse control, this trait may be positively related to undergraduate students' academic achievement (Chowdhury, 2006; De Feyter et al., 2012; Komarraju et al., 2011). Moreover, Tan and Mohd (2015) found that public university students are more conscientious than their private university counterparts, which means that they are more responsible and organized, and thus more likely to have better academic performance.

Another interesting finding was that working while studying was significantly related with being male and associated, almost across the board, with higher scores in most of the variables that contribute to resilience (goal-efficacy, future planning and social skills). Students who work also have better future orientation (expectance, hopes, and exploration). However, these students reported at the same time lower social support and higher dropout intentions. It could be that working provides students with greater opportunities for psychological growth, resulting in improved functioning, but does so at a cost. The short-term prospect of an income might tempt students to abandon their studies in order to work full-time, at the expense of potential future earnings. For instance, a recent study by Garrido and Pajuelo (2023) found that, in Peru, the most relevant economic indicators at the time of dropping out are family income and economic dependence, albeit the latter indicator is less predictive.

Education does have an impact on economic returns. For example, in Indonesia, individuals with a university education earn up to 60% more than their counterparts with only secondary or full primary education (Yubilitanto, 2020). In Peru, however, there is no recent evidence for higher economic returns resulting from a university education in contrast with alternatives (Yamada, 2007). This suggests the need for further discussion about how the expectation of a quick return on investment in higher education, or the need to start working while studying to cover expenses, may affect future earnings and stability. It is also likely that the time devoted to work cannot then be used for socializing, resulting in decreased perceptions of social support relative to students who are not employed, which in turn may foster the development of dropout intentions. Recent studies provide some insights regarding this topic (Garrido and Pajuelo, 2023; Kocsis

and Pusztai, 2020; Lorenzo-Quiles et al., 2023; Sayed, 2023). Meanwhile, our findings suggest interesting questions for further research: Should students be advised to pursue paid work during their studies? What type of student benefits from this, and who is more likely to see their future earnings potential hindered by early dropout? While several hypotheses come to mind (e.g., students with lower rates of temporal discounting are more likely to stick with their studies in the long run while accruing the psychological benefits of work), our data cannot speak to these possibilities.

Some limitations of our research should be pointed out. First, while GPA was collected separately at baseline, students reported their psychosocial protective factors, future orientation, and dropout intentions at the same point in time. This, along with the fact that we were unable to manipulate students' psychosocial, academic, and institutional protective factors, prevents us from making strong causal claims about our findings. Second, even if researchers considered the period of the semester when recruiting the sample, data collection occurred at two different time points, and variations in the academic cycle could have influenced student responses. Finally, the study determined the presence or absence of a tutoring programme by referring to the university's website, which did not describe the level of specialization or quality of these services in greater depth.

In connection to this last point, one important question that may need to be addressed is why does not the presence or absence of a tutoring programme in a university predict the relationship with dropout intentions? Three potential explanations may account for this finding. First, the quality of the tutoring programmes on offer may not be sufficient to make a difference for this group of students. Second, it is possible that the effect of tutoring is already accounted for by the psychosocial protective factors investigated at the level of the individual student. Finally, all but one of the universities in our sample had tutoring programmes, so the lack of variation might complicate these estimates.

Despite these limitations, our study uses a large, diverse sample with national coverage, in an externally valid setting, to add to the evidence that students' psychosocial factors matter for the development of human resources. Building on this foundation, further research is encouraged to delve deeper into the nuances of those psychosocial factors, enabling educational institutions to craft holistic strategies that not only retain students, but also foster their personal and academic growth during challenging times.

University dropout in general is a serious problem across the world (Morelli et al., 2023). When students drop out and give up on their higher education plans, the result is a decline in the human resources required for social and economic growth. Moreover, it also results in a loss of those human capabilities that promote human freedom, preventing individuals from leading lives aligned with their choices (Sen, 1998). Dropping out of higher education interrupts a life project that many young people consider valuable, limiting their skills and opportunities, and pushing the chosen path out of reach for many who would have benefited from continuing their studies (Villareal and Zayas-Pérez, 2021).

Our research underscores that dealing with high dropout rates, a significant challenge in higher education, necessitates comprehensive approaches that extend beyond the socio-economic characteristics of students. In light of these findings, a multidimensional approach is suggested, one that takes into consideration individual and interpersonal factors that either safeguard or jeopardize a student's pursuit of valued goals. An untimely interruption of professional

training not only imposes substantial costs on both the state and the students (Higuera et al., 2023); it also entrenches inequality beyond the purely economic dimension. As Sen (1998) observes, an interrupted education deprives one of opportunities to enhance freedom and reduce insecurity (London and Formichella, 2006).

In this context, our study's contributions center on probing the subjective dimension in order to comprehend how individuals confront adversity. This represents a distinct framework for analyzing education within the context of human development, challenging the socio-economic determinism that all too commonly pervades views of the dropout issue.

Data availability statement

The datasets presented in this study can be found in online repositories. The names of the repository/repositories and accession number(s) can be found at: https://hdl.handle.net/20.500.12534/WOYYED.

Ethics statement

The studies involving humans were approved by Oficina de ética de la Investigación e Integridad Científica (OETIIC) de la Pontificia Universidad Católica del Perú. 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.

Author contributions

DH: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Writing – original draft, Writing – review & editing. LM: Conceptualization, Validation, Writing – review & editing. RG: Conceptualization, Methodology, Writing – review & editing. MG: Conceptualization, Data curation, Investigation, Validation, Writing – review & editing. BL: Formal analysis, Methodology, Writing – review & editing. CF: Conceptualization, Writing – original draft.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/feduc.2024.1476426/full#supplementary-material

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