



Students' thoughts about dropping out: Sociodemographic factors and the role of academic help-seeking

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Abstract

Dropout is a problematic issue in education due to its high prevalence and impact on students and society. In fact, it can limit students' future options, and it involves a substantial cost for public budgets in most countries. This is not an easy problem to solve, since student dropout is a complex decisional process involving such factors as personal and contextual characteristics, educational variables, and psychosocial aspects. Very few studies have examined whether sociodemographic and psycho-educational variables affect educational dropout at different academic levels. For this reason, the present study aims to provide a better understanding of the role of several variables (age, academic results, gender, sexual orientation, academic help-seeking, academic self-efficacy, and planning as a strategy to cope with academic stress) in educational dropout thoughts in a sample of 759 students resident in Spain (age: $M=22.91$, 74.0% women). Regression analyses showed that dropout thoughts were significantly predicted by academic results, planning, sexual orientation, academic self-efficacy, and academic help-seeking. Agreements and discrepancies with previous research are discussed. The results of the current study can be used by educators, policy makers and institutions to develop programmes to reduce student dropout by enhancing self-regulated learning strategies.

Keywords Student dropout · Academic help-seeking · Perceived self-efficacy · Planning strategy

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1 Introduction

Student dropout has become an issue of great interest in recent years due to its high prevalence and impact on the personal and social context of students. In higher education, student dropout levels are high in the European Union, and in some countries are as high as 30% (Heublein 2014; Vossensteyn et al., 2015). Its impact on face-to-face and online studies is similar (Gonzales Lopez & Evaristo Chiyong, 2021). Policy makers and higher education institutions should be concerned and take an active interest in the problem, because finishing a university degree may help students to overcome economic inequalities and reduce the gap between lower and higher socio-economic contexts. In this respect, leaving university without finishing a degree is one less opportunity for students to improve their life and adds uncertainty to their future and life projects (Faas et al., 2018). In addition, in European countries, higher education is publicly funded to some extent or another so losing students during the process is also an economic burden for governments and society (Guzmán Rincón et al., 2021). For these reasons, governments, institutions, and non-governmental organizations have been interested in identifying why students drop out of education so that they can develop programmes that encourage them to complete their courses.

A great deal of previous research has focused on understanding the complex process of student dropout, and has managed to identify, for example, the phases that make up the process (see for example the model developed by Bäumke et al., 2022), the reasons for leaving education (e.g., Behr et al., 2020), or the personal variables associated with this decision (e.g., Jeno et al., 2023, Reisel & Brekke, 2010). The current study focuses specifically on the personal variables affecting this decision, so we will summarize the relevant literature on this issue.

1.1 Sociodemographic factors and dropout thoughts

Dropout thoughts are a complex process in which several types of personal variables (e.g., sociodemographic, academic, and psychosocial) play a role. For example, among sociodemographic variables, the findings of studies on the association between age and student dropout are inconsistent (O'Neill et al., 2011). Being younger has been related to less intention of dropping out in university students (Kehm et al., 2020) and vocational training students (Böhn & Deutscher, 2022), but Pappas et al. (2016) found no relationship between age and intention to drop out in computer science students. Students of different ages have different life trajectories and experiences (Behr et al., 2020), which may partly explain the inconsistent results found in these studies. For example, older students may have prior work experience in the field, or other kinds of previous experience that motivate them to go on with their studies. But at the same time they may have responsibilities (for example, children or other family members) that make it difficult to attend the classes. The relationship between gender and dropping out of education has also been studied and, again, with results that depend on the field or the stage of the educational process (O'Neill et al., 2011). For instance, women studying science, technology, engineering, and mathematics were more likely to drop out than men in the same field (Isphording & Qendrai, 2019). On the other hand, one review found that men had a higher dropout

rate (Kehm et al., 2020), Litalien & Guay, (2015) reported lower dropout rates among female doctoral students. In terms of students' origin, dropout rates can vary depending on the country of study. For example, in the United States of America, students with a migrant background were more likely to drop out, whereas in Norway the rate was no different than that of local students (Reisel & Brekke, 2010). It should be considered that the social welfare measures implemented in some countries may help to reduce social and economic inequalities among students, which could make a difference to the dropout rates of some potentially vulnerable groups.

1.2 Academic factors and dropout thoughts

Previous research on academic variables shows that academic results— for example Grade Point Average (GPA)— are important when explaining dropout intentions (e.g., Belloc et al., 2010; Bernardo et al., 2019; Gairin et al., 2014). Poor performance could make students feel less motivated to follow their study programme and, therefore, consider dropping out. Other educational aspects like the field of studies have also been explored. University students from the fields of engineering and sciences report more dropout intentions than students in other majors, according to the research conducted in Spain and Finland (Korhonen & Rautopuro, 2019; Lassibille & Navarro Gómez, 2008).

1.3 Psychosocial factors and dropout thoughts

Studies dropout has also been associated with psychosocial variables. For example, a study conducted with 417 Portuguese university students linked dropout intention to burnout in the academic context (Abreu Alves et al., 2022). In addition, there is evidence to suggest that using positive coping strategies, such as planning or positive reframing, can reduce student burnout and decrease dropout (Marôco et al., 2020). In Norway, Jeno et al. (2023) found a negative relationship between dropout intentions and perceived competence and autonomous motivation.

Other variables that have been the focus of research in recent years are those related to self-regulated learning (SRL), that is, the process whereby students actively design and manage their learning (Zimmerman, 2013). One of the most popular paradigms explaining SRL is that proposed by Zimmerman (2000) which includes three cyclical phases: (1) forethought, (2) performance, and (3) self-reflection. More specifically, the forethought phase includes self-efficacy as a key element, the specific strategies used in a task are part of the performance phase, and self-satisfaction and affect belong to the self-reflection phase (Panadero & Alonso-Tapia, 2014).

In the context of this paradigm, some self-regulated learning strategies have been related to student dropout intentions. One of these strategies is academic help-seeking, which involves seeking assistance from other individuals (i.e., professors or classmates) to achieve good results in the academic context (Karabenick & Berger, 2013). According to Schlusche et al. (2021), being able to seek help successfully affected the intention to drop out and student satisfaction. Having assistance and social support may play an important role in student dropout. Another study found

that having friends at the University could have a protective role because working with peers can enhance learning and coping strategies (Morelli et al., 2022).

A study of secondary education students in Chile (Sáez-Delgado et al., 2021) found that self-regulated study planning during the learning process also predicted a lower dropout intention. However, the role of gender in self-regulated study planning strategies should be taken into account. In fact, in the study by Bernardo et al. (2019), men reported worse learning strategies than women, which involves worse self-regulated study planning. In turn, worse learning strategies have a negative impact on academic performance, which may lead to thoughts of dropping out (Behr et al., 2020). In addition, a meta-analysis of the relationship psychosocial and study skill factors have with college outcomes showed a positive correlation between retention and academic-related skills, academic self-efficacy, social support, and GPA (Robbins et al., 2004). Furthermore, SRL self-efficacy has been found to be negatively related to dropout intentions (Morelli et al., 2022).

From the evidence reported above, it seems that SRL strategies may play an important role in student dropout. In fact, a failure in self-regulation processes could be linked with difficulties in student attainment or academic achievement (Bernardo et al., 2019; Nota et al., 2004), which is why it is recommendable to gather more evidence on the topic.

1.4 The present study

The present study aims to better understand the role of sociodemographic, academic, and psychosocial variables in student dropout thoughts in university students. It also explores how differences between genders and sexual orientations can impact dropout thoughts. These aims coincide with the American Psychological Association's resolution that recommends collecting this type of data whenever possible and appropriate (APA, 2016). Considering the evidence presented above, we expect older students to have a higher frequency of dropout thoughts, men to report higher dropout thoughts than women, students in STEM fields to communicate more dropout thoughts than students in other fields, and local students to have similar dropout thoughts to students with origins in other countries. Finally, we also hypothesize that academic results, academic self-efficacy, academic help-seeking and planning as a coping strategy for academic stress will predict thoughts about dropout.

While educational dropout has been widely studied from various perspectives, this study focuses on a unique combination of sociodemographic and psychosocial variables, especially in Spain. In fact, these variables have not been analysed together in previous studies in this field. Of particular note is the inclusion of variables such as sexual orientation and academic help-seeking, which have been insufficiently explored in the existing literature. Although there are no previous studies about the possible role of sexual orientation, we hypothesise that it will be a major predictor. The results obtained by Severiens and ten Dam (2012) on gender showed that the minority gender in an educational programme was more likely to drop out. Therefore, we felt that minority sexual orientations might have the same effect. Furthermore, the experiences of LGB students may be different from those of straight students during their education, as they may fear being rejected or experience actual rejection by

peers. We believe that this situation may give rise to thoughts of dropping out, and for this reason we expect to find higher levels of dropout thoughts in LGB students.

The current study is exploratory in nature and, rather than focusing on a specific model, it has features of a variety of theoretical models. This approach allows for a comprehensive exploration of how different factors may influence dropout intentions, particularly within the Spanish context. It also allows us to integrate an underexplored variable such as sexual orientation, thus filling a gap in the literature. Through this multifaceted approach, the study offers new insights into the complex phenomenon of educational dropout.

2 Method

2.1 Participants

We recruited 813 students from different educational stages: 77.5% were bachelor's degree students, 15.7% were master's degree students, 3.1% were vocational training students, 2% were PhD students, and 1.6% were clinical psychology specialisation students. However, considering the purposes of the current research, the study was only conducted with 759 students from the following educational stages: bachelor's degree students (83.1%) and master's degree students (16.9%). Their field of studies was heterogeneous: 39.5% were studying social sciences, 18.9% science, 17.6% health sciences, 17.3% engineering and architecture, and, finally, 6.7% arts and humanities.

The mean age was 22.91 (range=18–57, $SD=6.04$). In terms of origin, 87.2% of the participants had been born in Spain, and of those born in other countries, 84.7% had been living in Spain for more than one year ($M=11.93$, $SD=8.01$). Participants identified their gender as 74.0% women, 24.9% men, 0.8% non-binary or others, and 0.3% refused to answer the question. In terms of sexual orientation, the composition was 70.8% straight, 19.5% bisexual, 7.5% gay or lesbian, 0.8% other orientations, and 1.4% refused to answer the question.

2.2 Instruments

We collected data regarding age, gender, sexual orientation and country of origin, current stage of studies, and the field of studies. Participants also had to provide a self-assessment of their academic results on a 5-point Likert scale from 1 (very bad) to 5 (very good). We used a single item to measure the frequency with which students think about dropping out. This item had four answer options, with the following labels: 1=never, 2=sometimes, 3=frequently, and 4=always. The mean and standard deviation of this item were 1.78, and 0.69 respectively, and the coefficients of skewness and kurtosis were both below 1 in absolute value: skewness=0.54, kurtosis=0.05. Furthermore, 36.1% of participants chose the first option, 51.4% the second option, 11.3% the third option, and 1.2% the last option.

The Academic Help-Seeking Scale (Karabenick, 2003) was administered to assess the tendency to seek academic help when needed. We used the Spanish version (Mar-

tín-Arbós et al., 2023), which contains eight items on a Likert scale from 1 (completely disagree) to 5 (completely agree). People with higher scores on this scale tend to ask for academic guidance when they need it (i.e. “If I were having trouble understanding the material in this class I would ask someone who could help me understand the general ideas”). In the Spanish population, the scale has proven to be unidimensional. In the current study, the reliability of the scores on this scale was Cronbach’s $\alpha=0.80$, McDonald’s $\omega=0.81$.

The scale of Specific Perceived Self-Efficacy of Academic Situations (EAPESA; Palenzuela, 1983) was used to assess academic self-efficacy as perceived by students: that is, to what extent students are confident they can perform academic tasks and obtain positive results. The questionnaire contains ten items evaluating the construct on a 4-point scale from 1 (never) to 4 (always). The following is an example of one of the items on the scale: “I consider myself capable enough to successfully face any academic task”. In our sample, the reliability of the scores on this scale was Cronbach’s $\alpha=0.91$, McDonald’s $\omega=0.91$.

The Coping scale of the academic stress questionnaire (A-CEA; Cabanach et al., 2010) contains 23 items that measure three strategies for coping with academic stress: (1) positive re-evaluation, (2) seeking support and (3) planning. In this study, we used the seven items of the planning subscale (i.e., “When faced with a problematic situation, I make an action plan and follow it”). Higher scores on this scale are indicative of an analytical and rational approach to the problem and the tendency to develop and monitor an action plan. In the current study, Cronbach’s α for this scale was 0.84, and McDonald’s ω was 0.85.

2.3 Procedure

The sampling was non-probabilistic for convenience, and the participants were recruited through the institutional e-mail of their university and through students’ associations and social media. We obtained informed consent from all participants, and they were informed about the voluntary participation in the study and the anonymity and confidentiality of the data collected. We also provided an e-mail they could write to for doubts or questions about the study. The ethical committee of the institution validated the study design (CEIPSA-2021-TD-0025).

2.4 Data analysis

We first carried out correlation analysis, ANOVA and t-tests to determine which variables were related to dropout thoughts. Secondly, we carried out a regression analysis to determine the contribution of each variable to the prediction of dropout thoughts. We did not include in this regression analysis those variables that in the former bivariate analyses (correlations, ANOVA and t-tests) were not significantly related to dropout thoughts. In addition to standardized coefficients (beta weights), we used the following indices to assess the relative importance of the predictors: Johnson’s structural coefficients and relative weights (Johnson, 2000). It should be taken into account that beta weights are context dependent and can become very unstable in the presence of substantially correlated predictors (Johnson, 2000), and for this reason

we also used these additional indices, which tend to be more stable than beta weights. Johnson's relative weights estimate the relative importance of predictors in contributing to a dependent variable, taking into account both its individual contribution and its contribution when combined with other variables. These are presented as percentages (i.e., they are divided by R^2 and multiplied by 100).

We used IBM SPSS Statistics (version 28) and MIMR-Raw.sps (Lorenzo-Seva et al., 2010) to perform these analyses.

3 Results

Gender and sexual orientation differences were examined for student dropout thoughts. Due to the number of participants in each group, we could only compare the gender of men and women and the sexual orientation of straight, bisexual and gay/lesbian participants. We found no gender differences in dropout thoughts, $t(749)=1.19$, $p=.23$, $d=\text{not applicable}$. We also tested gender differences in each field of studies separately and found no significant differences (social sciences: $t(292)=1.62$, $p=.11$, $d=\text{not applicable}$; science: $t(135)=0.82$, $p=.42$, $d=\text{not applicable}$; health sciences: $t(126)=1.65$, $p=.10$, $d=\text{not applicable}$, engineering and architecture: $t(126)=0.33$, $p=.74$, $d=\text{not applicable}$, arts and humanities: $t(44)=0.92$, $p=.36$, $d=\text{not applicable}$). However, we did find differences in terms of sexual orientation, $F(2, 739)=8.87$, $p<.001$, $d=0.023$. Scheffé's post hoc test found that there was a significant difference ($p<.01$) between straight ($M=1.71$, $SD=0.67$) and bisexual ($M=1.92$, $SD=0.73$) participants, with bisexual participants presenting higher scores. Furthermore, gay/lesbian participants reported more dropout thoughts ($M=2.00$, $SD=0.67$) than straight participants ($p=.01$).

We also tested the differences in dropout thoughts between the fields of study, and found no significant differences between them, $F(4, 736)=1.15$, $p=.33$, $d=\text{not applicable}$. In addition, we explored differences in dropout thoughts by country of origin, also finding no significant differences ($M_{\text{Spain}}=1.78$, $SD=0.69$; $M_{\text{Others}}=1.76$, $SD=0.69$; $t(757)=0.20$, $p=.84$, $d=\text{not applicable}$). Regarding the current stage of studies, we found a significant difference between bachelor's degree students and master's degree students, $t(757)=2.74$, $p<.01$, $d=0.26$, with bachelor's degree students reporting higher levels of dropout thoughts ($M=1.81$, $SD=0.70$) than master's degree students ($M=1.63$, $SD=0.60$), although the effect size was small.

Table 1 shows Pearson's correlations between the variables. As can be seen, dropout thoughts are significantly correlated with academic performance, academic self-efficacy and planning ($p<.01$ in all cases), but not with age.

Finally, we carried out a stepwise multiple regression analysis to determine the contribution of each variable to the prediction of dropout thoughts. The variables entered into the regression equation as potential predictors of dropout thoughts were age, sexual orientation, current stage of studies, academic results, academic help seeking, academic self-efficacy and planning strategy. The multiple regression equation was statistically significant $F(5, 753)=25.51$, $p<.001$, Multiple $R=.39$, $d=0.15$. Table 2 shows the standardized regression coefficients (beta weights), the structure coefficients and Johnson's relative weights that were obtained. We found that all but

Table 1 Correlations between the variables

Variables	DT	Age	AR	AHS	ASE
Age	−0.03	1			
Academic results	−0.30**	0.05	1		
Academic help seeking	−0.18**	0.06	0.18**	1	
Academic self-efficacy	−0.27**	0.08*	0.48**	0.17**	1
Planning strategy	−0.23**	0.06	0.32**	0.20**	0.40**

Note DT=dropout thoughts, AR=academic results, AHS=academic help-seeking, ASE=academic self-efficacy

** $p < .01$. * $p < .05$

Table 2 Multiple regression analysis predicting student dropout thoughts

Variables	Beta	SC	RW
Academic results	−0.20**	−0.78**	33.4**
Academic self-efficacy	−0.11**	−0.71**	22.3**
Planning strategy	−0.11**	−0.65**	19.0**
Academic help seeking	−0.09**	−0.50**	13.4**
Sexual orientation	0.11**	0.32**	9.1**

Note The variables are ordered according to their relative weights
SC: Structure coefficient. RW: Relative weight (reported as percentages)

** $p < .01$ * $p < .05$

two variables (age and current stage of studies) were significant predictors of dropout thoughts.¹ Regarding the relative contribution to Multiple R of each predictor, the results suggest that academic results, academic self-efficacy, and planning strategy are the major predictors, with academic results having the highest relative weight. Although sexual orientation and academic help-seeking are also predictors of dropout thoughts, they are less important than the other three variables.

4 Discussion

With this study, we wanted to contribute to a better understanding of the phenomenon of student dropout, by analysing the influence of several variables on dropout thoughts. Among sociodemographic variables, we found no significant gender differences in thoughts about dropout. Previous studies have suggested that women are less likely to drop out from university (Ghignoni, 2017; Kehm et al., 2020), although this could be related to the field of studies (Isphording & Qendrai, 2019). In this regard, Severiens and ten Dam (2012) pointed out that male- or female-dominated programmes showed different patterns, with the minority gender being more likely to drop out. In our case, there were more female participants in all the fields of study, and we found no gender differences when we tested each field separately.

¹ To rule out that the response options of the dependent variable had been interpreted as categorical instead of continuous, we also carried out a regression analysis with MPlus Version 8.10, defining this variable as categorical. The results are equivalent to those explained for the regression with a continuous dependent variable, with the same profile of significance for all the variables and a Multiple R of 0.42, $p < .01$, $d = 0.18$. Therefore, treating this variable as ordinal or continuous does not noticeably affect the results.

We found no previous literature on dropout thoughts that included the variable sexual orientation. However, the results of the current study suggest that this variable should be included in future research, as we found that it led to significant differences: that is, bisexual participants reported more thoughts of dropping out than straight participants. Likewise, gay/lesbian participants also reported more dropout thoughts than straight participants. As observed by Severiens and ten Dam (2012) for gender and described in the paragraph above, we can hypothesize that minority status increases the likelihood of dropping out. The experiences of LGB students may be different from those of straight students during their education: for example, they may fear being rejected by peers, or actually experience rejection. It is important that future research addresses this topic so that this phenomenon can be better understood and specific action programs be implemented to prevent vulnerable students from dropping out.

We did not find a relationship between students' age and dropout thoughts. In contrast, a study by Müller and Schneider (2013) revealed that dropout was more likely in older students. Again, the characteristics of the sample may have a role in explaining the different results.

In line with the results of Reisel and Brekke (2010) in Norway, there were no differences in dropout intentions in migrant students. In our sample, students with other origins have been living in Spain for several years, which can facilitate the inclusion process. Also, the Spanish welfare system can reduce the difficulties that minority students face and, therefore, reduce differences between them and students born in the country. Regarding the current stage of studies, although the results obtained with the ANOVA were significant, the effect size was very small, and the post-hoc tests did not provide significant results. In addition, this variable did not play an important role in predicting dropout thoughts in the regression analysis.

Among educational variables, the only one with a major role in dropout thoughts was academic results. In fact, the results obtained in the regression analysis suggest that it is the variable that contributes most to the prediction of dropout thoughts. Therefore, this is a particularly important variable. According to Bernardo et al. (2019), this variable is the main predictor of student dropout, which is consistent with the results obtained in our study for dropout thoughts. The importance students attach to their actual performance may be decisive in whether they want to quit their studies or not.

Dropout thoughts were successfully predicted by the three psychosocial variables included in the study, all three of which had a negative relationship. That is, higher scores in academic self-efficacy, academic help-seeking, and planning as strategies to cope with academic stress are related with fewer thoughts about dropping out. Of these three variables, academic self-efficacy and planning had greater impact on the prediction of dropout thoughts than academic help seeking. To sum up, using strategies such as planning or seeking assistance to respond to academic difficulties can help students to persist. Also, being confident about their skills has a positive effect on students' persistence. As mentioned in the introduction, all these three variables are included in the model of self-regulated learning proposed by Zimmerman (2000), which provides a framework that links their actions in a more complex paradigm, and not only as individual variables. That is, variables such as academic

self-efficacy play an important role in determining students' attitudes to academic tasks and the goals they want to achieve which, in turn, may have an influence on their general reaction to performing the task. During performance, students may use a variety of strategies, and we have focused on academic help-seeking as one that may improve task outcomes. After completing a particular task, students must deal with any outcomes, which may or may not be what they expected. Being able to cope effectively with stress allows students to adaptively react to the outcomes of their task. In this study, we focused on planning as a way of coping with academic stress. Therefore, by including these three variables in our study, we obtained an overview of the importance of self-regulated learning on thoughts about dropping out. In this way, our results contribute to increase the evidence suggesting that a better use of self-regulated learning strategies can improve academic performance and prevent dropout thoughts (de la Fuente-Arias, 2017; Karabenick & Berger, 2013; Nota et al., 2004; Zimmerman, 2013). In addition, as reported above, the main predictor of dropout thoughts were academic results. Future research should address how the variables involved in self-regulated learning can influence academic results, which would be an indirect path to influencing dropout thoughts.

The findings from our study underscore the importance of addressing academic self-efficacy, planning strategies, academic help-seeking behaviour, and the unique challenges faced by students of diverse sexual orientations in the context of university dropout intentions. By integrating these insights, it becomes evident that a holistic approach is necessary to support student retention. Educational institutions should consider enhancing their support structures to foster an environment in which academic help-seeking is normalized and encouraged. This could involve the development of comprehensive advising and mentoring programs that focus not only on academic skills but also on emotional and social support, especially for minority groups such as LGBTQ+ students. By creating a supportive educational atmosphere that acknowledges and addresses the diverse needs of its student body, universities can make significant strides toward reducing dropout rates and promoting student success. This approach not only has implications for the theoretical understanding of dropout but also offers practical pathways for intervention and policy development aimed at mitigating dropout rates and enhancing the overall educational experience.

The research does have some limitations. For example, we used a convenience sample instead of a random sample. Even so, the sample was collected using several procedures (institutional university e-mails, students' associations, and social media), so that the sample was as representative as possible. In addition, regression coefficients can be expected to be low because student dropout is a complex phenomenon involving many different aspects, some of which are not included in this study (for example, economic factors and learning strategies). They may also be influenced by unexpected life experiences which are difficult to account for systematically in a single research project. Further studies should be done to include economic and social variables, learning strategies, etc., and acquire a more comprehensive understanding of dropout intentions. Moreover, the study measured dropout thoughts in students who were enrolled when the data were being collected. However, students who had already dropped out were not part of our sample. For this reason, it would be necessary to carry out further studies at the time of enrolment in order to identify an

early stage those students who have doubts and are more likely to drop out. In addition, although thoughts are closely related to intentions and final behaviour (Bäulke et al., 2022), the final decision taken by students is beyond the limits of the current study design. Another limitation of our study is the use of a single-item measure for dropout thoughts. Because dropout thoughts are a narrow bandwidth variable, the use of a multi-item measure could have led to a high redundancy of content, with the problems that this entails (Ferrando & Morales-Vives, 2023). For this reason, we decided to use only one item. However, we believe that further studies should be carried out with a more complex measure of dropout thoughts that fully captures the nuances of students' intentions to discontinue their studies, and which, at the same time, minimizes content redundancies. If developed, this instrument would be helpful to better understand the complexities of dropout intentions and their relationships with other variables.

In conclusion, the results of this study provide useful insights for educators, policy makers and institutions. Understanding how sociodemographic, educational, and psychosocial variables affect dropout thoughts can lead to intervention programmes that focus on enhancing self-regulated learning strategies and take into account students' background, especially when they belong to a minority group.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

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References

- Abreu Alves, S., Sinval, J., Neto, L., Marôco, L., Gonçalves, J., Ferreira, A., & Oliveira, P. (2022). Burnout and dropout intention in medical students: The protective role of academic engagement. *BMC Medical Education*, 22(1), 1–11. <https://doi.org/10.1186/s12909-021-03094-9>.
- American Psychological Association (2016). *Resolution on Data about Sexual Orientation and Gender Identity*. <https://www.apa.org/about/policy/data-sexual-orientation>.
- Bäulke, L., Grunschel, C., & Dresel, M. (2022). Student dropout at university: A phase-orientated view on quitting studies and changing majors. *European Journal of Psychology of Education*, 37(3), 853–876. <https://doi.org/10.1007/s10212-021-00557-x>
- Behr, A., Giese, M., Kamdjou, T., H. D., & Theune, K. (2020). Dropping out of university: A literature review. *Review of Education*, 8(2), 614–652. <https://doi.org/10.1002/rev3.3202>.
- Belloc, F., Mariotti, A., & Petrella, L. (2010). University drop-out: An Italian experience. *Higher Education*, 60(2), 127–138. <https://doi.org/10.1007/s10734-009-9290-1>.
- Bernardo, A., Esteban, M., Cervero, A., Cerezo, R., & Herrero, F. J. (2019). The influence of self-regulation behaviors on University Students' intentions of Persistence. *Frontiers in Psychology*, 10, 1–8. <https://doi.org/10.3389/fpsyg.2019.02284>.
- Böhn, S., & Deutscher, V. (2022). Dropout from initial vocational training– a meta-synthesis of reasons from the apprentice's point of view. *Educational Research Review*, 35, 1–14. <https://doi.org/10.1016/j.edurev.2021.100414>.
- Cabanach, R. G., Valle, A., Rodríguez, S., Piñeiro, I., & Freire, C. (2010). Escala de afrontamiento del estrés académico (A-CEA) [Academic Assessment Scale (A-CEA)]. *Revista Iberoamericana De Psicología Y Salud*, 1(1), 51–64.
- de la Fuente-Arias, J. (2017). Theory of self- vs. externally-regulated learning™: Fundamentals, evidence, and applicability. *Frontiers in Psychology*, 8, 1–14. <https://doi.org/10.3389/fpsyg.2017.01675>.
- Faas, C., Benson, M. J., Kaestle, C. E., & Savla, J. (2018). Socioeconomic success and mental health profiles of young adults who drop out of college. *Journal of Youth Studies*, 21(5), 669–686. <https://doi.org/10.1080/13676261.2017.1406598>.
- Ferrando, P. J., & Morales-Vives, F. (2023). Is it quality, is it redundancy, or is model inadequacy? Some strategies for judging the appropriateness of high-discrimination items. *Anales De Psicología*, 39(3), 517–527. <https://doi.org/10.6018/analesps.535781>.
- Gairín, J., Triado, X. M., Feixas, M., Figuera, P., Aparicio-Chueca, P., & Torrado, M. (2014). Student dropout rates in Catalan universities: Profile and motives for disengagement. *Quality in Higher Education*, 20(2), 165–182. <https://doi.org/10.1080/13538322.2014.925230>.
- Ghignoni, E. (2017). Family background and university dropouts during the crisis: The case of Italy. *Higher Education*, 73(1), 127–151. <https://doi.org/10.1007/s10734-016-0004-1>.
- Gonzales Lopez, E., & Evaristo Chiyong, I. (2021). Academic achievement and dropout of university students from a course in both an online and face-to-face modality. *RIED-Revista Iberoamericana De Educacion a Distancia*, 24(2), 189–202. <https://doi.org/10.5944/ried.24.2.29103>.
- Guzmán Rincón, A., Barragán Moreno, S., & Cala-Vitery, F. (2021). Rural population and COVID-19: A model for assessing the economic effects of drop-out in higher education. *Frontiers in Education*, 6, 1–15. <https://doi.org/10.3389/feduc.2021.812114>
- Heublein, U. (2014). Student drop-out from German higher education institutions. *European Journal of Education*, 49(4), 497–513. <https://doi.org/10.1111/ejed.12097>
- Isphording, I. E., & Qendrai, P. (2019). Gender differences in student dropout in STEM. *Institute of Labor Economics (IZA)*. <https://doi.org/10.5157/NEPS>
- Jeno, L. M., Nylehn, J., Hole, T. N., Raaheim, A., Velle, G., & Vandvik, V. (2023). Motivational determinants of students' academic functioning: The role of autonomy-support, autonomous motivation, and perceived competence. *Scandinavian Journal of Educational Research*, 67(2), 194–211. <https://doi.org/10.1080/00313831.2021.1990125>
- Johnson, J. W. (2000). A Heuristic Method for Estimating the Relative Weight of Predictor Variables in Multiple Regression. *Multivariate Behavioral Research*, 35(1), 1–19. https://doi.org/10.1207/S15327906MBR3501_1
- Karabenick, S. A. (2003). Seeking help in large college classes: A person-centered approach. *Contemporary Educational Psychology*, 28(1), 37–58. [https://doi.org/10.1016/S0361-476X\(02\)00012-7](https://doi.org/10.1016/S0361-476X(02)00012-7).

- Karabenick, S. A., & Berger, J. (2013). Help seeking as a self-regulated learning strategy. In H. Bembenutty, T. C. Cleary, & A. Kitsantas (Eds.), *Applications of self-regulated learning across diverse disciplines. A tribute to Barry J. Zimmerman* (pp. 237–261). IAP Information Age Publishing.
- Kehm, B. M., Larsen, M. R., & Sommersel, H. B. (2020). Student dropout from universities in Europe: A review of empirical literature. *Hungarian Educational Research Journal*, 9(2), 147–164. <https://doi.org/10.1556/063.9.2019.1.18>.
- Korhonen, V., & Rautopuro, J. (2019). Identifying problematic study progression and at-risk students in higher education in Finland. *Scandinavian Journal of Educational Research*, 63(7), 1056–1069. <https://doi.org/10.1080/00313831.2018.1476407>
- Lassibille, G., & Navarro Gómez, L. (2008). Why do higher education students drop out? Evidence from Spain. *Education Economics*, 16(1), 89–105. <https://doi.org/10.1080/09645290701523267>.
- Litalien, D., & Guay, F. (2015). Dropout intentions in PhD studies: A comprehensive model based on interpersonal relationships and motivational resources. *Contemporary Educational Psychology*, 41, 218–231. <https://doi.org/10.1016/j.cedpsych.2015.03.004>.
- Lorenzo-Seva, U., Ferrando, P. J., & Chico, E. (2010). Two SPSS programs for interpreting multiple regression results. *Behavior Research Methods*, 42(1), 29–35. <https://doi.org/10.3758/BRM.42.1.29>
- Marôco, J., Assunção, H., Harju-Luukkainen, H., Lin, S. W., Sit, P. S., Cheung, K. C., Maloa, B., Ilic, I. S., Smith, T. J., & Campos, J. A. D. B. (2020). Predictors of academic efficacy and dropout intention in university students: Can engagement suppress burnout? *Plos One*, 15(10), 1–26. <https://doi.org/10.1371/journal.pone.0239816>.
- Martín-Arbós, S., Dueñas, J. M., Morales-Vives, F., & Castarlenas, E. (2023). Psychometric properties of the Spanish version of the academic help seeking scale in a sample of adults. *Heliyon*, 9(8), 1–10. <https://doi.org/10.1016/j.heliyon.2023.e18986>.
- Morelli, M., Chirumbolo, A., Baiocco, R., & Cattelino, E. (2022). Self-regulated learning self-efficacy, motivation, and intention to drop-out: The moderating role of friendships at university. *Current Psychology*, 42(18), 15589–15599. <https://doi.org/10.1007/s12144-022-02834-4>
- Müller, S., & Schneider, T. (2013). Educational pathways and dropout from higher education in Germany. *Longitudinal and Life Course Studies*, 4(3), 218–241. <https://doi.org/10.14301/llcs.v4i3.251>.
- Nota, L., Soresi, S., & Zimmerman, B. J. (2004). Self-regulation and academic achievement and resilience: A longitudinal study. *International Journal of Educational Research*, 41(3), 198–215. <https://doi.org/10.1016/j.ijer.2005.07.001>.
- O'Neill, L. D., Wallstedt, B., Eika, B., & Hartvigsen, J. (2011). Factors associated with drop-out in medical education: A literature review. *Medical Education*, 45(5), 440–454. <https://doi.org/10.1111/j.1365-2923.2010.03898.x>.
- Palenzuela, D. L. (1983). Construcción Y validación De una escala de autoeficacia percibida específica de situaciones académicas [Construction and validation of a self-efficacy scale specifically for academic situations]. *Análisis Y Modificación De Conducta*, 9(21), 185–219.
- Panadero, E., & Alonso-Tapia, J. (2014). How do students self-regulate? Review of Zimmerman's cyclical model of self-regulated learning. *Anales De Psicología*, 30(2), 450–462. <https://doi.org/10.6018/analesps.30.2.167221>.
- Pappas, I. O., Giannakos, M. N., & Jaccheri, L. (2016). *Investigating factors influencing students intention to dropout computer science studies*. Annual Conference on Innovation and Technology in Computer Science Education, ITiCSE. <https://doi.org/10.1145/2899415.2899455>.
- Reisel, L., & Brekke, I. (2010). Minority dropout in higher education: A comparison of the United States and Norway using competing risk event history analysis. *European Sociological Review*, 26(6), 691–712. <https://doi.org/10.1093/esr/jcp045>.
- Robbins, S. B., Le, H., Davis, D., Lauver, K., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin*, 130(2), 261–288. <https://doi.org/10.1037/0033-2909.130.2.261>
- Sáez-Delgado, F., Mella-Norambuena, J., López-Angulo, Y., Olea-González, C., García-Vásquez, H., & Porter, B. (2021). Association between self-regulation of learning, forced labor insertion, technological barriers, and dropout intention in Chile. *Frontiers in Education*, 6, 1–10. <https://doi.org/10.3389/educ.2021.801865>
- Schlusche, C., Schnaubert, L., & Bodemer, D. (2021). Perceived social resources affect help-seeking and academic outcomes in the initial phase of undergraduate studies. *Frontiers in Education*, 6, 1–14. <https://doi.org/10.3389/educ.2021.732587>

- Severiens, S., & ten Dam, G. (2012). Leaving college: A gender comparison in male and female-dominated programs. *Research in Higher Education*, 53(4), 453–470. <https://doi.org/10.1007/s11162-011-9237-0>
- Vossensteyn, J. J., Kottmann, A., Jongbloed, B. W. A., Kaiser, F., Cremonini, L., Stensaker, B., Hovdhaugen, E., & Wollscheid, S. (2015). Dropout and completion in higher education in Europe: Main report. In Publications Office of the European Union. <https://doi.org/10.2766/826962>
- Zimmerman, B. J. (2000). Attaining self-regulation: a social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13–39). Academic Press. <https://doi.org/10.1016/b978-012109890-2/50031-7>.
- Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychologist*, 48(3), 135–147. <https://doi.org/10.1080/00461520.2013.794676>

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