

RESEARCH ARTICLE (ORIGINAL) 

Personal and academic variables as predictors of student dropout

Variáveis de contexto pessoal e académico como predictoras do abandono escolar

Variables del contexto personal y académico como predictores del abandono escolar

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Abstract

Background: Student dropout, defined as the non-completion of the attended school program, is a complex phenomenon that involves different predictors.

Objective: To identify predictor variables for dropout in higher education students.

Methodology: This is a descriptive-correlational and analytical cross-sectional quantitative study with a non-probability convenience sample of 1175 Portuguese students. The data collection instrument included a socio-demographic questionnaire, the Reasons for Higher Education Dropout Scale, and other validated scales.

Results: The results obtained identify age and gender, emotional perception, learning performance, and dimensions of students' academic experiences as predictor variables for the four dimensions of student dropout.

Conclusion: This study points to the need to support students in managing their expectations, providing them with a greater ability to deal with their emotional perceptions. Implementing measures to mitigate students' dropout, considering their socio-demographic profiles, and creating infrastructures that ensure the quality of academic life are recommended.

Keywords: student dropouts; universities; learning; emotions; academic performance; academic success

Resumo

Enquadramento: A complexidade do fenómeno do abandono escolar, perspectivado como a não conclusão do curso frequentado, pressupõe diferentes preditores deste fenómeno.

Objetivos: Identificar variáveis predictoras dos motivos de intenção de abandono escolar nos estudantes do ensino superior.

Metodologia: Estudo quantitativo transversal, descritivo-correlacional e analítico, com uma amostra não probabilística por conveniência de 1175 estudantes portugueses. O instrumento de recolha de dados incluiu um questionário sociodemográfico, uma Escala de Motivos de Intenção de Abandono Escolar do Ensino Superior e outras escalas validadas.

Resultados: Os resultados obtidos identificam, como variáveis predictoras das quatro dimensões dos motivos de intenção de abandono escolar, a idade e o sexo, a perceção emocional, a performance de aprendizagem e dimensões das vivências académicas dos estudantes.

Conclusão: Constata-se a necessidade de apoiar os estudantes ao nível da gestão de expectativas, dotando-os de uma maior capacidade de lidar com as suas perceções emocionais. Sugere-se a criação de medidas de mitigação do abandono escolar atendendo ao seu perfil sociodemográfico e criação de infraestruturas que garantam a qualidade de vida académica.

Palavras-chave: evasão escolar; ensino superior; aprendizagem; emoções; desempenho académico; sucesso académico

Resumen

Marco contextual: La complejidad del fenómeno del abandono escolar, visto como la no finalización del curso, presupone diferentes predictores de este fenómeno.

Objetivos: Identificar variables predictoras de los motivos de la intención de abandono escolar en estudiantes de educación superior.

Metodología: Estudio cuantitativo transversal, descriptivo-correlacional y analítico, con una muestra no probabilística por conveniencia de 1175 estudiantes portugueses. El instrumento de recogida de datos incluyó un cuestionario sociodemográfico, una Escala de Motivos de Intención de Abandono Escolar de la Educación Superior y otras escalas validadas.

Resultados: Los resultados obtenidos identifican, como variables predictoras de las cuatro dimensiones de los motivos de abandono escolar, la edad y el género, la percepción emocional, el rendimiento del aprendizaje y las dimensiones de las experiencias académicas de los estudiantes.

Conclusión: Es necesario apoyar a los estudiantes en la gestión de las expectativas, proporcionándoles una mayor capacidad para gestionar sus percepciones emocionales. Se sugiere crear medidas para mitigar el abandono escolar según su perfil sociodemográfico, así como infraestructuras que aseguren la calidad de vida académica.

Palabras clave: abandono escolar; enseñanza superior; aprendizaje; emociones; rendimiento académico; éxito académico



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Introduction

Higher education is characterized by increasingly heterogeneous student communities that demand academic institutions to be able to respond to their different needs. When entering this level of education, students face new academic and personal challenges, such as being away from family and friends and managing their time and resources, among others (Casanova et al., 2020). These aspects can translate into a complicated and challenging period in students' lives as they are confronted with a new daily reality.

The variety of personal and academic difficulties students encounter during this new stage of their lives can occasionally lead to dropouts (Ferreira et al., 2019). Dropout occurs when students leave school without completing a qualification due to different reasons that do not include their transfer or the occurrence of a dramatic event, such as death (Benavente et al., 1994), but lead to abandoning higher education (Casanova, 2018).

The dropout phenomenon can negatively impact students, having profound consequences throughout their lives, particularly considering today's competitive reality in which academic training is increasingly valued. Bearing in mind that education positively impacts individuals' economic and social expectations, it is vital to identify, in advance, the factors influencing the reasons for student dropout. This study's main objective is to identify these factors.

Background

Described as a complex and multifactorial matter (Casiraghi et al., 2022), higher education dropout has become a pressing issue in Portugal. The data for the academic year 2020/2021 gathered by the Portuguese Directorate-General for Statistics of Education and Science (DGEEC - *Direção-Geral de Estatísticas da Educação e Ciência*) show an increase of 10.8% in the 1st-year undergraduate student dropout, which represents an estimated 2% increase from the previous year (DGEEC, 2022). In this context and considering the diversity of students entering and attending higher education in Portugal, it is critical to understand how different variables related to students' personal life may influence the reasons for dropping out. These factors may be associated with their socio-demographic characteristics or emotional competencies. Well-being and interpersonal relationships depend not only on individual cognitive dimensions but also on emotional and social skills (Faria & Santos, 2006).

In the academic context, the perception of learning performance, i.e., students' self-assessment of the knowledge gained, the skills and abilities developed, and the effort expended, is a relevant factor (Young et al., 2003), together with students' academic experiences. Different experiences in academic settings can impact each student differently. In higher education, this variable can have a decisive and influential effect on the reasons for dropping out.

Research question

What are the possible reasons for dropout in Portuguese higher education students?

Methodology

This descriptive-correlational and analytical cross-sectional quantitative study was conducted with a non-probability convenience sample of 1175 Portuguese higher education students. Data were collected between January and September 2020 using online questionnaires. Participants had a minimum age of 17 and a maximum age of 40 ($M = 20.39$; $SD = 3.30$). Male students represented 30.7% ($n = 361$) of the sample and female students 69.3% ($n = 814$). While attending their academic course, most participants (67.1%) were displaced from their usual residence. As for social benefits for higher education students, 39.5% of the participants had a school grant, 6% benefitted from on-campus housing, and 1.9% received social school grants and housing support. Regarding their parents' education, this study identified that most fathers (41.4%) had primary education levels, i.e., up to the ninth year, followed by those with secondary education levels, up to the twelfth year (36.1%), and those with higher education levels (21.6%). As for the participants' mothers, 36.3% had a secondary education level, 34% had a primary education level, and 28.7% had a higher education level.

The questionnaire was organized into different sections using validated scales to achieve the defined objective. Section A consists of 11 items aimed at identifying students' socio-demographic profiles. Section B includes the Learning Performance Scale adapted from Young et al. (2003). This unifactorial scale consists of six items measured with a 5-point Likert-type scale (from 1 = *extremely low* to 5 = *extremely high*). It contains items such as "knowledge you gained" or "effort you expended." Section C includes the Reasons for Higher Education Dropout Scale by Ambiel (2015), aimed at assessing potential dropout reasons. The scale features four dimensions: (i) the "Organizational" dimension – regarding the relationship with the educational institution and academic community, grouping items such as "The institution does not offer any pedagogical monitoring program", or "The lack of assistance from the course coordination"; (ii) the "Life Management" dimension - linked to time management and individual responsibilities, including items such as "To take on new professional responsibilities that make it impossible to continue studying", or "To work during class hours"; (iii) the "Professional/Career" dimension - related to the student's future professional expectations, with items such as "To realize that the course may not contribute to getting a good job in the future", or "The career not being as envisaged"; (iv) the "Relational" dimension – concerning the student's interpersonal relationships and social perceptions, consisting of items such as "To have a different social status than my colleagues", or "To realize people think in a very different way than me."

Section D presents the Emotional Skills and Competencies Questionnaire by Takšić (2000), adapted to the Portuguese context by Faria and Santos (2006). The questionnaire consists of 45 items, measured on a 6-point Likert scale, ranging between *never* and *always*, and distributed by four factors: (i) emotional perception, “It is difficult to find a colleague to help me with a personal problem”; (ii) emotional expression, “I feel involved in the course I attend”; (iii) ability to deal with emotions, “I know well the existing services in my polytechnic institute”; and (iv) emotional investment, “I feel confident in myself.” Higher scores on the scale correspond to students’ greater emotional intelligence/competency.

Section E contains the abbreviated version of the Academic Experiences Questionnaire (QVA-r) by Almeida et al. (1999), aimed at understanding how students adapt to the demands and expectations of academic life. It consists of 60 items, measured on a 5-point Likert-type scale (ranging from 1 = *totally disagree* to 5 = *totally agree*) and distributed by five dimensions – “personal,” “interpersonal,” “career,” “study-learning,” and “institutional,” which the authors considered as determinants for students’ adaptation to higher education. The “personal” dimension focuses on the connection with the self and how students perceive their physical and psychological well-being and includes items such as “I have moments of distress” or “I feel physically weak.” The “interpersonal” dimension regards how students experience relationships and their involvement in extracurricular activities. It includes items such as “I make friends easily at my school” or “My classmates have been important in my personal development.” The “career” dimension considers students’ expectations and their adaptation to the course they are attending. It includes items such as “I have good skills for the vocational area I chose” or “I am involved with the course I am attending.” The “study-learning” dimension covers students’ study methods and time management and includes items such as “I feel fit and have a good work rhythm” or “I manage to have my schoolwork always up to date.” The “institutional” dimension focuses on students’ relationship with the educational institution, regarding their interest in it or their perception of the quality of the infrastructures and services provided. It includes items such as “I like the school I attend” or “I would like to finish my course at the institution I am attending now” (Almeida et al.,

1999). This study’s data are part of the project “*Sucesso Académico no Ensino Superior: Competências Emocionais e Prevenção do Abandono*” (Academic Success in Higher Education: Emotional Skills and Dropout Prevention). Descriptive and analytical or inferential statistics were applied to analyze the data using the IBM SPSS Statistics software, version 25.0 for Windows. Regarding descriptive statistics, measures of central tendency, such as the mean, dispersion, such as the standard deviation and coefficient of variation, and association, such as Pearson’s correlation coefficient, were used to analyze the degree of association between the variables under study. Inferential analysis was carried out using parametric statistics through multiple linear regression. The stepwise method was used to select the independent variables. This method generates as many models as necessary to determine the predictor variables. The gender variable was considered a dummy variable, with one (1) being assigned to the male gender and zero (0) to the female. The final models were submitted to structural equation modeling (SEM) using AMOS (Analysis of Moment Structures) software, version 25 for Windows. All scales were subject to internal consistency analysis by calculating Cronbach’s alpha (α), considering as reference values those established by Pestana and Gageiro (2014) and Coutinho (2014). This study was approved by the Ethics Committee of the Polytechnic Institute of Viseu (Opinion no. 08/2017). This study ensured the participants’ right to confidentiality and anonymity, as well as to a consented, voluntary, and informed participation in compliance with the protection of personal data.

Results

Table 1 summarizes the results of the internal consistency coefficients (Cronbach’s alpha) of the scales used in this study. The Learning Performance Scale (Young et al., 2003) shows a coefficient of 0.813. The Reasons for Higher Education Dropout Scale has a total coefficient of 0.938 and scores above 0.809 in each factor. The Emotional Skills and Competencies Questionnaire demonstrates a total coefficient of 0.909 and scores above 0.712 in each factor. The Academic Experiences Questionnaire (QVA-r) has a total coefficient of 0.849 and scores above 0.734 in each factor.

Table 1*Internal consistency coefficients (Cronbach's alpha) of the scales*

Scales	Cronbach's alpha
Reasons for Higher Education Dropout	0.938
Factor 1_ Organizational Dimension	0.876
Factor 2_ Life Management Dimension	0.834
Factor 3_ Professional/Career Dimension	0.862
Factor 4_ Relational Dimension	0.809
Learning Performance (single-factor scale)	0.813
Emotional Skills and Competences	0.909
Factor 1_ Emotional Perception	0.843
Factor 2_ Emotional Expression	0.863
Factor 3_ Ability to Deal with Emotions	0.712
Factor 4_ Emotional Investment	0.802
Academic Experiences	0.849
Factor 1_ Personal Dimension	0.873
Factor 2_ Interpersonal Dimension	0.850
Factor 3_ Career Dimension	0.863
Factor 4_ Study-learning Dimension	0.828
Factor 5_ Institutional Dimension	0.734

The analysis of the relationship between the dimensions of the dependent variable - reasons for dropping out (Organizational, Life Management, Relational, and Professional/Career) - and the independent variables was based on multiple linear regression. This method is widely used when the objective is to analyze the relationship between a dependent variable and two or more independent variables, quantitative in nature.

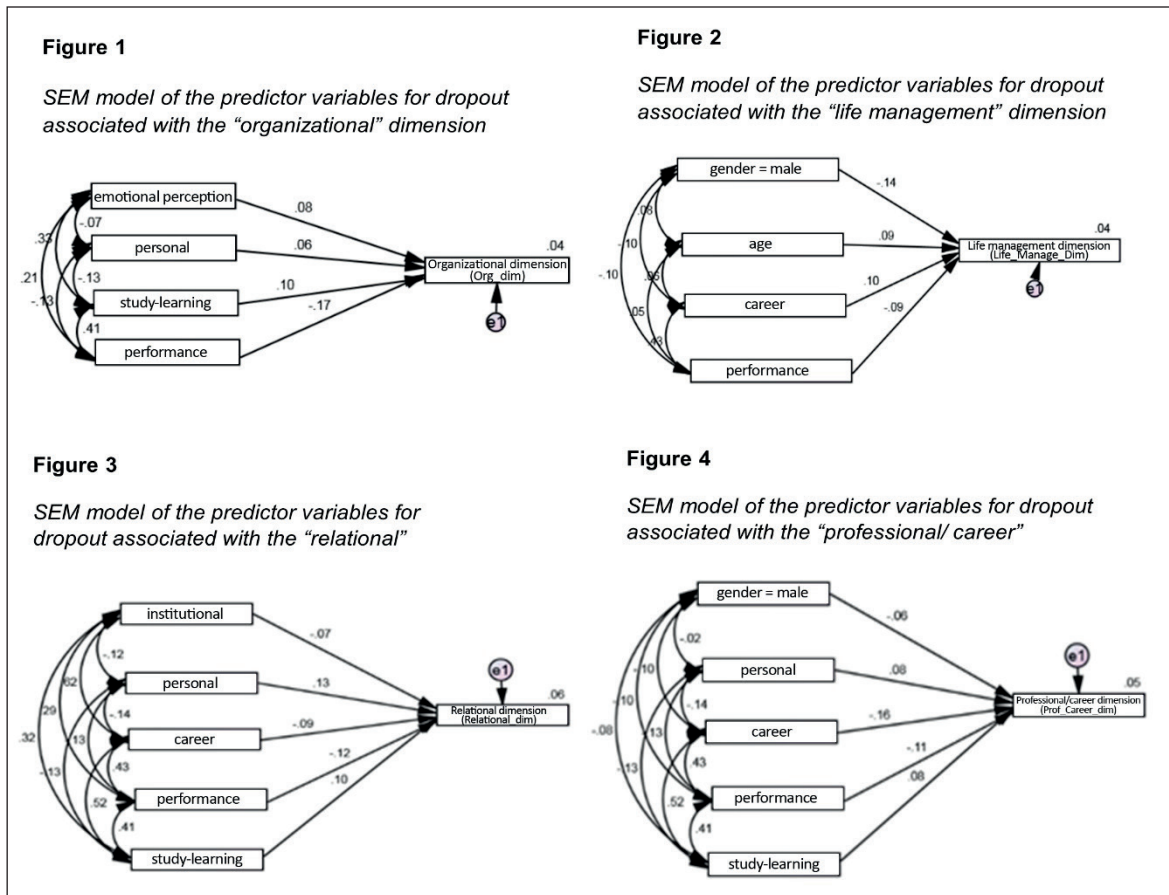
The refined models (Figures 1 to 4) presented contain the predictor variables for each dimension of the reasons for dropping out generated by the AMOS software. In the Organizational dimension, four independent variables proved to be predictors (Figure 1), explaining 4.0% of the variance. The standardized beta coefficients indicate that the learning performance establishes a negative correlation, while the remaining variables show a positive one. Thus, when the scores of the emotional perception and the personal variables increase and the performance scores decrease, the Organizational dimension scores increase. The variable with the highest predictor value for the Organizational dimension is the learning performance, and the one with the lowest predictor value is the emotional perception of the Emotional Skills and Competencies Scale.

Considering the Life Management dimension, four variables demonstrated to be predictors, explaining 4.0% of the variance (Figure 2). The standardized beta coefficients

reveal that gender and learning performance correlate negatively, while age and career establish a positive correlation. Thus, older female students with lower career and learning performance scores tend to reveal better scores on the Life Management dimension.

Regarding the Relational dimension, five variables proved to be predictors (Figure 3), explaining 6.0% of the variance. The standardized beta coefficients show that the personal and study-learning variables are positively correlated to the Organizational dimension, while the remaining variables establish a negative correlation. Therefore, the increase in the first two variables' scores and the decrease in the scores of the remaining variables correspond to an increase in the reasons for dropping out associated with the Relational dimension.

Finally, the Professional/Career dimension presents five predictor variables for the reasons for dropping out (Figure 4), explaining 5.0% of the variance. An analysis of the standardized beta coefficients demonstrates that the personal and study-learning variables are positively correlated to the Profession/Career dimension. In contrast, the remaining variables establish a negative correlation, which means that higher scores in the personal and study-learning variables and lower scores in the remaining variables correspond to higher scores in the reasons for dropping out associated with the Professional/Career dimension.



Discussion

The data presented demonstrate the existence of several personal and academic variables predicting the reasons for dropping out of higher education. Although the published statistical data (Instituto Nacional de Estatística, 2021) show a greater tendency for male students to drop out, the results obtained point in the opposite direction. A difference possibly explained by the characteristics of the sample studied. Female students identify aspects of the Life Management dimension as significant reasons for dropping out, particularly those regarding the ability to manage time and balance personal and academic life, income and financial availability.

This connection points to social constraints perhaps associated with gender-related cultural issues. According to the Gender Equality in Portugal 2021: Statistical Bulletin (Commission for Citizenship and Gender Equality (CIG) & Strategy and Planning Support Unit, 2022), family responsibilities weigh more among women. Moreover, although more female students are in higher education, more women are hit by unemployment. Age also appears as a socio-demographic predictor variable in this same dimension, as older students usually have greater professional and family responsibilities (Quintas et al., 2014). In the Professional/Career dimension, which focuses more on future professional expectations, students reveal that poor career possibilities, the likelihood of low salaries, and limited supply are relevant reasons for dropout. According to the Gender Equality in Portugal 2021: Statis-

tical Bulletin (Commission for Citizenship and Gender Equality (CIG) & Strategy and Planning Support Unit, 2022), the significance students assign to these reasons for dropping out may be related to the gender wage gap still existing. However, this study was unable to establish a causal link. Nevertheless, these factors call attention to the need to develop initiatives and public policies that allow working students and students with dependents to continue studying.

The results show learning performance as a predictor variable in all four dimensions of the reasons for higher education dropout, establishing a negative relationship. This result reveals that lower learning performance is associated with the presence of more reasons to drop out. This correlation demonstrates the value students assign to the skills developed and the knowledge acquired and how it becomes a dominant overall factor in the reasons for dropping out.

In the area of emotional skills and competencies, the only factor that predicts the reasons for dropping out is emotional perception, which establishes a positive and significant correlation to the Organizational dimension. The results show that the reasons for dropping out are associated with the relationship established with the educational institution and academic community. Emotional perception regards the ability to recognize emotions (Ariza-Hernández, 2017). In this sense, the results suggest that if students have negative feelings about the educational institution, these may significantly impact the reasons for dropping out.

Academic experiences were the most relevant variables in predicting the reasons for dropping out. Except for the interpersonal dimension, all the other dimensions establish a significant relationship with the different reasons. The personal dimension considers students' perceptions of their physical and psychological well-being and negative feelings, such as sadness, confusion, and distress. According to the results, these feelings reinforce the reasons for dropping out linked to the Relational, Professional/Career, and Organizational dimensions. Thus, there is a need for greater attention and reinforcement of measures to maintain students' well-being and emotional support, particularly during the initial phase of this new education cycle.

This study assesses the ability to organize and accomplish schoolwork. The data obtained suggest the existence of a positive and significant relationship between this variable and the reasons for dropping out associated with the Organizational, Professional/Career, and Relational dimensions. This relationship suggests that students who have higher scores in study-learning and are more involved in curricular activities will be more sensitive to the dimensions mentioned above of the reasons for dropping out, also showing higher scores in these parameters.

Finally, the career dimension of the Academic Experiences Questionnaire is negatively related to the Professional/Career and Relational dimensions of the Reasons for Higher Education Dropout Scale. It demonstrates that the less the course corresponds to students' current and future expectations and the lower their academic involvement with the course attended, the higher their reasons for dropping out considering their future professional expectations and their relationship with others. These data point to the need for more comprehensive and earlier vocational guidance before entering higher education so that students are directed to higher education courses that match their academic and professional expectations. This dimension also correlates positively with the Life Management dimension of the Reasons for Higher Education Dropout Scale. The data suggest that students with higher scores in the career dimension, which includes more significant investment in the course and expectations of professional achievement, are more likely to have reasons for dropping out related to life management.

This study has some limitations, mainly concerning the characteristics and type of its sample, i.e., the marked predominance of female participants and being a non-probability convenience sample, which makes it impossible to generalize the results.

Conclusion

Student dropout is a phenomenon with multidimensional causes. Understanding the predictors of dropout in higher education is critical, as it can improve conditions for students' adaptation and performance, thus increasing their permanence and academic success. Considering this study's results and that student communities are heterogeneous groups with different needs at personal

and academic levels, dropout mitigation measures, such as implementing mentoring programs, are recommended. This study's results also demonstrate that the intention to drop out is influenced by age and gender and by the personal dimension and emotional perception of the quality of academic life. Thus, these variables must be considered in intervention plans promoting institutional affiliation and preventing higher education dropouts. Faculty members' greater involvement/follow-up is recommended to increase students' learning performances. It is also worth noting the need for continued support in secondary and higher education to manage expectations, thus contributing to students' personal and academic development. Investing more in promoting students' well-being and emotional skills and competencies towards academic success is essential, as well as offering training activities that respond to this desideratum.

Author contribution

Conceptualization: Ferreira, M., Cardoso, A. P., Campos, S., Guiné, R.

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Methodology: Duarte, J., Ferreira, M., Campos, S., Cardoso, A. P.

Writing - original draft: Cardoso, A. P., Ferreira, M., Pereira, A.

Writing - review and editing: Cardoso, A. P., Ferreira, M., Pereira, A.

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