The Academic Dropout Wheel

Analyzing the Antecedents of Higher Education Dropout in Education Studies

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Abstract: Higher education dropout has been considered a major concern for several researchers in the field of education around the World. Although different studies were carried out to deal with the topic, they all faced common limitations. This paper explores the twofold research conducted to investigate higher education dropout in Education studies at two of the main Catalan public universities. First, a review of the different theoretical perspectives that tackled dropout was carried out to combine the direct and indirect dropout predictors. Second, some research was conducted in the faculties of Education in the selected two Catalan public universities to investigate the antecedents of higher education dropout. The utilized instrument discussed in this paper is the survey. In the first part, the predictors of higher education dropout were combined in a 5-layer model called the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018). In the second part, the results of the survey analyzed quantitively revealed that dissatisfaction from the program and academic failure are the most important antecedents of higher education dropout in education studies in Catalonia.

Keywords: ¨Dimensions of Academic Dropout" wheel; dropout antecedents; Higher education dropout

Introduction

Higher education dropout is a major worldwide concern since it affects intensely the individual, educational institutions, and society (Sosu & Pheunpha, 2019). The definition of dropout is complex and was developed differently among countries and educational systems; the most common one is leaving university before completing a qualification (Ascend Learning, LLC, 2012). According to this study, higher education dropout includes students who registered in a course but did not enroll again during the coming two-course periods, so left intentionally or unintentionally their study program or their institution (Gairín, Triado, Feixas, Figuera, Aparicio-Chueca & Torrado, 2014).

Europe 2020 has set a plan to increase graduation rates of forty percent among adults aged between 30 and 34, thus urging them to decrease dropout. The main reason for such a strategy is that several European countries lacked high-level skills graduates which affected their economical improvements and innovations, in addition to their productivity, and social justice (European Commission, 2015). After this initiative, many countries have managed to decrease dropout rates; however, studies have shown that general limitations were hindering the continuous improvement of these rates. For example, the lack of a common method for calculating attrition (Deary, Watson & Hogston, 2003; Glossop, 2001; Cook, 2010), the difficulty in determining the reasons why a student drop out of a program (Tinto, 1975; Deary et al., 2003; Dodge, Mitchell & Mensch, 2009), the difficulty to access those who have already dropped out of a program (Glossop, 2001), the weak inventories used to collect data from students (Deary et al., 2003), in addition to the inattention to possible relationships between factors that affect students trajectory.

To address the difficulty in determining the reasons why a student drops out of a program and the inattention to possible relationships between factors that affect students´ trajectory, twofold research was carried out in two of the main Catalan public universities. First, an analysis of dropout theories was conducted to induct the different dropout predictors and gather them in a five-layer model entitled the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018). Second, the study investigates the antecedents of higher education dropout in the faculties of Education in two of the Catalan public universities.

Chen (2008) categorizes the theories analyzing the reasons for dropout in five; psychological related to individual features, sociological and economic caused by exterior reasons, organizational affected by institutions, and interactionalist combining both individual and environmental elements. Based on these theories, the study distributes the general dropout predictors (Ascend Learning, LCC, 2012; Christenson, Reschly, & Wylie, 2012; Sallán, Avila, & Villegas, 2014; Gentry, 2014; Hasbun, Araya, & Villalon, 2016) in the five-layer model of the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018), classifying the reasons of dropout in different dimensions targeting students and institution, thus facilitating the task of identifying these factors and drawing combinations between them to come up with prevention solutions to decrease dropout rates.

The Model of Dropout Wheel

Numerous studies tackling higher education dropout show that the decision whether to drop out depends on the "successful engagement" between the institution and the student (Vries, Arenas, Muñoz & Saldaña, 2011). Taking this into account, the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018) projects all the factors that define the relation student-institution which may lead to dropout.

The model was influenced by "The Dimensions of Diversity" wheel of Gardenswartz & Rowe (2003) which presents the aspects of diversity that drive and affect a person's behavior in the workplace. The model includes five layers that embody each a different dimension.

1- Personality. It represents the main features built at an early stage of the student's life and is affected by all dimensions.

2- Internal dimensions. Uncontrollable physical and psychological aspects of a student that cause people's pre-judgments based on what they see.

3- External dimensions. Most aspects are controllable and refer to a student's relationship with the outside and affect people's choices in careers and connections.

4- Academic dimensions. An additional layer to the original model of Gardenswartz & Rowe (2008). They include the academic features that distinguish a student from another.

5- Organizational dimensions. A layer representing all the cultural aspects of the institution that can have a direct effect on the student's academic trajectory and influence the way people are treated and their development within the organization.

Figure 1

"The Dimensions of Academic Dropout" Wheel (Author, 2018).
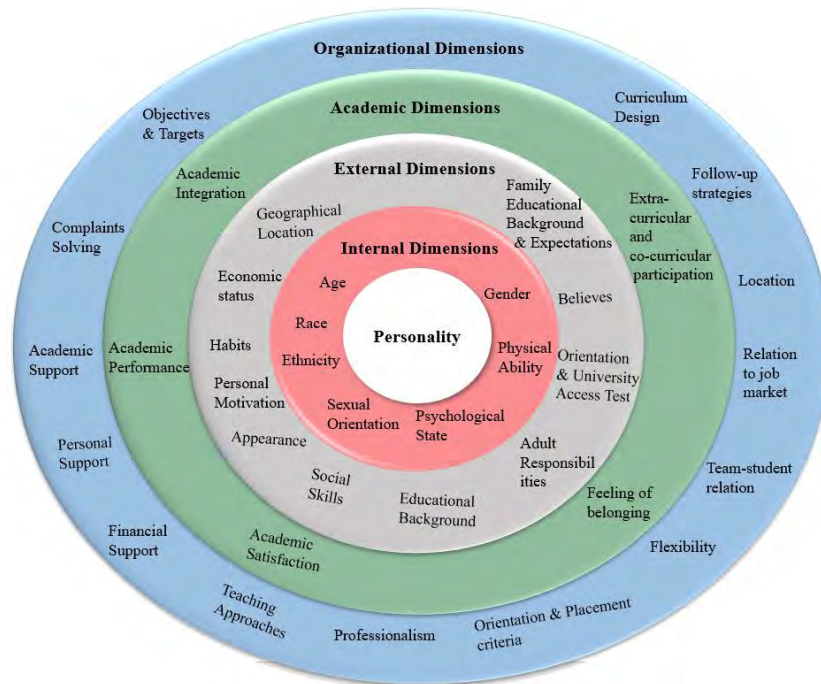
Personality

The core is Personality. Students' academic performance has been linked to both cognitive and non-cognitive factors (Bergold & Steinmayr, 2018) which include students' personality characteristics that affect students' motivation and approach to the learning process (Hazrati-Viaria, Rada & Torabib, 2011). Bergold et al., (2018) explained the relation between the most important 5 facets of personality "Neuroticism (N), Extraversion (E), Openness to Experience (O), Agreeableness (A), and Conscientiousness (C)" with Academic Performance. A high level of N affects students 'academic achievements negatively as it is associated with high anxiety. High levels of E and A are usually related to class activeness and good reputation. Students with high scores on O have shown higher and more strategic learning abilities. As those with a high level of C, have proven to be goal-oriented and high achievers (Bergold et al., 2018).

Internal Dimensions

Age, race, gender, ethnicity, physical abilities/disabilities, psychological state, and sexual orientation are all internal factors that might lead to dropout. Going back or starting university studies at an 'unusual' age has been considered as a reason for permanent dropout due to the discomfort it causes to the student (CREATE, 2010) similar to cultural diversity as race, ethnicity, and gender (Hasbun et al., 2016). White upper- and middle-class men and women are more likely to graduate than African American minorities and poor ones (or); in some cases, being ethnically different can even cause devastating "posttraumatic stress disorder (PTSD)" to students (Gentry, 2014). Being a female student, one has more tendency to drop out due to difficulties in social integration opposite to male students

(Larsen, Sommersel, & Larsen, 2013). Besides, two-third of disabled young adults do not complete their university studies due to their environment that is not well-equipped to cope with their conditions (Smith, 2014). As for sexual orientation, the ¨cross-cutting¨ pressure caused by the surroundings of LGBT students could add more challenges to the lives of these students and cause dropout (GLSEN, 2016).

The psychological state of students has also been considered an important dropout factor as dropout or retention decisions are merely individual decisions taken depending on it (Khan, 2017). Bean and Eaton's (2001) model designates some pre-entry psychological individual characteristics that students already have when entering college due to their prior teenage experiences. The way students perceive their self-esteem and efficacy affect them greatly at the higher education stage and throughout their studies. Students build new psychological characteristics that can either lead to academic and social integration and motivation which consequently lead to persistence and loyalty towards the institution or deteriorate the students' self-perception of efficacy and confidence which then lead to a personal decision of dropping out.

External Dimensions

Factors that tackle the student's relationship with their surroundings vary from family-related to economic, geographical, and personal. Most students living on campus have an interesting experience and are more satisfied and integrated socially and academically than those living elsewhere (Jones, 2013). Several studies show that structural campus diversity allows minority and majority students from diverse races or ethnicities to build positive relationships and enrich their knowledge in cultures which increases their will to graduate (Winkle-Wagner & Locks, 2020). Studying on campus, helps students grow open-mindedly through accepting others, raises their readiness to active collaborations, and leaves them with remarkable college experiences eliminating the danger of dropping out (Nareeba, 2019). However, integration is not easy for all students. Historical underrepresentation of some minorities negatively affects the integration process of some new generation students, especially that several "institutional norms" contradict the values and beliefs of these students' families or origins which can lead to alienation and dropout (Devi, 2020). According to the National Survey of Student Engagement- NSSE (2005), a quarter of college students are first-generation¸ from minority groups whose parents did not even manage to finish high school (Ewell, 2010). Therefore, most of these students have less family comprehension and support regarding education and are unaware of the academic and social challenges waiting for them in college life. Coming from disadvantaged socio-economic backgrounds in which students have weak family support (Romero, Riggs, & Ruggero, 2015), academic skills and study habits increase the risk of dropout (Cabrera, Tomás, Álvarez, & Gonzalez, 2006; Casanova, Cervero, Núñez, Almeida, & Bernardo, 2018). On a similar stand, the social attainment theory of Blau & Duncan (1967) considers that the educational background of the family members especially the father, and their prestigious jobs affect the educational choice of individuals and their first occupation (Andres, 2016). Ethnicity also puts several students at the risk of dropout as incidences of racism and discrimination have been frequently observed in higher education institutions whether among students or faculty (Harden-Moore, 2019). Therefore, a student's status achievement is dependent on many factors that highlight the relationship between

inequalities among social classes and education. Tinto (1993) noted that the position of individuals and institutions in the society's rankings is essential in dropout choices since social, economic, or ethnic pressure can affect students' selections.

Economically, students from good socioeconomic backgrounds have a greater chance to succeed throughout their school and university due to the advantages and support they have access to and their ability to afford university studies (Chen, 2008; Finkel & Barañano, 2014). Several students with adult responsibilities as full-time workers or children are at a high risk of dropout due to their inability to balance their responsibilities, whether financial, personal, or educational (Kehm, Larsen, & Sommersel, 2019).

Student´s personal motivation plays an important role in their study journey. Having a positive motivation enhances perseverance, efficacy, and focus during the academic journey. Motivated students tend to be more engaging in their study journey in opposite to those lacking personal motivation and self-belief (Martin, 2002).

Moreover, the lack of orientation after secondary studies and the low academic performance of students during high school is considered as a major cause of unreadiness for higher education which boosts the risks of dropout (Rodríguez-Gómez, Feixas, Gairín & Muñoz, 2012). Students from different backgrounds who were well-prepared academically in high school and graduated with good grades are usually expected to graduate successfully in college unlike those with poor high school education (Páramo, Araújo, Vacas, Almeida, & González, 2017). Besides, several countries require secondary qualifications before university application. These pre-university exams directly affect the student´s higher education access and choices as they limit their accessibility to programs and universities thus influence their educational attainment (Dee & Jacob, 2006).

Academic Dimensions

The academic dimensions interact with the other factors that directly influence the trajectory of the students during their studies. According to Tinto's model on students' attrition (1993), there is a "sociopsychological interplay" between students' traits (skills, education, intentions, and commitments), the challenges waiting for them at university (psychological, social, and organizational), and the surrounding environment. The stronger the social and intellectual integration is, the less is the dropout risk; the less the students are academically integrated, the more they consider dropping out. Program satisfaction also plays a crucial role in affecting students´ motivation and study behavior (Suhre, Jansen, & Harskamp, 2007). Besides, based on Quadri & Kalyankar (2010) academic performance is very important in predicting students who are passing in tough situations during their school years. Campus size (Tinto, 1993; Diem & Wolter, 2019), the available resources and relationships between institutions and workplaces could also affect students' academic decisions and behavior (Chen, 2008; Lauder & Mayhew, 2020).

Extracurricular activities can also predict school dropout since dropping out from any of these courses is an indicator of "behavioral proxy" and disengagement tendencies (Hasbun et al., 2016); students refusing to get involved in co-

curricular activities or having a hard time being integrated socially in university groups have more tendency to drop out from their first academic year (Reschly, 2020). According to Bean's attrition theory "beliefs shape attitudes, attitudes shape behaviors, and behaviors signal intents"; students' experience with the institution and its rules, in addition to their view for its objectivity and staff behavior, shape their attitude towards it which affect their feeling of belonging and their decision of dropout. In sum, most theories consider that students have their prejudgments and expectations on how to manage their time at university, and how the relationships with their surroundings and institution should be. Thus, dissatisfaction in these areas can affect their behaviors, attitudes, in addition to their social and academic performance, and thus lead to dropout (Behr, Giese, Teguim Kamdjou, Theune, 2020).

Organizational Dimensions

Organizational dimensions cover all aspects offered by the organization to the students whether in terms of program quality or human resources. Students arrive at the university level having already built different experiences with previous organizations that shaped their attitude towards learning and educational institutions. At this point, changing the students´ views and their feelings towards the new institution depend on several factors like the attitude of the institutional staff when delivering services (Schultz., 2020), the balance in school authority when dealing with studies´ requirements, and the student-teacher relation (Christenson et al., 2012). Lavrentsova (2019) believes that small institutions usually manage to create a positive experience for students as they provide them with consistent individual attention and effective student-teacher learning contact. Moreover, small-size institutions are usually located in small communities which helps in creating a strong connection between the students and the communities thus increases the feeling of belonging and decreases the thought of dropout.

Another important factor of Organizational Dimensions is academic support and flexibility. Institutions with weak or non-existing academic support for students, and with no flexible options regarding study plans and schedules push students to lose motivation and put them at a high risk of dropout. Similarly, underdeveloped curricula and low learning standards; are negatively associated with dropout thoughts (Suhre et al., 2007, Christenson et al., 2012). Besides, studies have shown that many educational institutions are academically underprepared to transfer the necessary knowledge and skills for students to enter the job market. Such a fact increases the students´ doubt and feeling of unreadiness for the labor market which pushes them to dropout (Rodríguez-Gómez et al., 2012, Rodríguez-Gómez, Feixas, Gairín, & Muñoz, 2015).

Regarding institutional objectives, two types of colleges have a negative influence on students' success, those "externally oriented" and those with a "collegial ethos" (Berger, 2002). The first includes institutions that care more about their image than their students´ learning and the second contains those that do not see a connection between the relationship of faculty and administrative staff with students´ learning.

In addition to all previous factors, the lack of financial support puts students at a high risk of dropout (Arendt, 2013). Any decision to invest money to carry out university studies is based on one's financial abilities, to decide whether

to finish their studies or not, students intend to calculate the degree cost and the expected future profits (Maman & Rosenhek, 2020). If for any reason, the student doesn't have enough financial means to carry out his/her studies and is not offered the necessary help, dropout will be the only solution.

Another main factor is the disappointment with the quality of orientation, and the ineffective guidance when choosing the field of study at the university level (Ortiz & Dehon, 2013). Any deficiency through this stage lead to drop out or transfer out as the students who are considered as "experimenters" will be facing unprecise study decisions (Rodríguez-Gómez, Meneses, Gairín, Feixas, & Muñoz-Moreno, 2016). Students who do not enroll in their first choice due to failing the university program entrance exam or to the limited number of places will have less commitment to their studies and are at risk of dropout (Vries et al., 2011; Porto & Soares, 2017). These students will show academic dissatisfaction and a lack of motivation as their whole life journey will be affected (Heublein, 2014).

To summarize, the matching between the academic programs, policies, target, mission, and purpose of both institutions and students have a great effect on students' persistence; there must be a positive relationship between organization and individual to create a sort of institutional satisfaction that can lead to perseverance in studies, a sense of belonging in students, and a decrease in dropout chances. The school follow-up in all these matters is highly crucial; however, the intervention is only possible when students are at high-risk and accepting to share and speak of their problems.

As previously projected in the ¨Dimensions of Academic Dropout¨ Wheel (Naaman, 2018), dropout factors are many, some directly related to the student and some others to the relation of the student with the institution. The ¨Dimensions of Academic Dropout¨ Wheel facilitated the identification of these factors and the drawing of combinations between them. In its second part, this study focuses on controllable factors that can be targeted to decrease dropout. These factors are mostly located in the Academic and Organizational dimensions as they are controllable by the student or the institution. Out of these factors, the focus was mostly on years of study progress, content satisfaction, academic performance, financial support, institutional satisfaction, and instructional satisfaction.

Methods

Following the model called the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018), which was designed based on the literature review, a survey was conducted to investigate the antecedents of higher education dropout in the faculties of Education at the UAB and UB from the students´ perspective. This survey was designed based on the literature review to address mostly the main factors of dropout located in the academic and organizational dimensions. The choice of focusing on these dimensions was based on the interest of the study to analyze the relationship between students and institutions in the purpose of improving this relationship in all sectors to decrease dropout rates.

Figure 2

Conceptual model (Author, 2020).
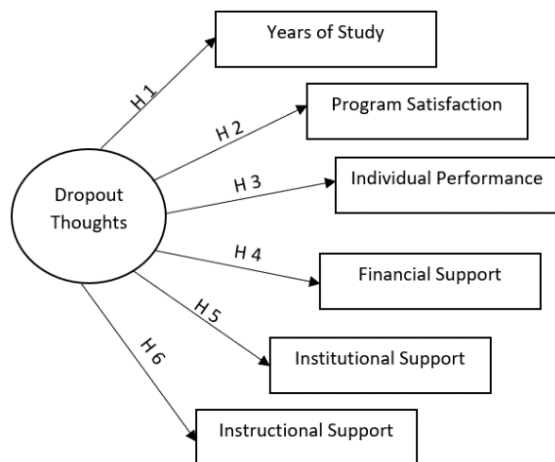
Being driven by the desire for learning and better career possibilities, students tend to select programs and universities based on their approach to teaching and learning in addition to the previous graduates´ feedback. Higher education institutions are thus subject to intense competition in understanding the students´ expectations and meeting their needs. The main predictor of students´ satisfaction in higher education institutions does not lie in attracting students to register but in maintaining students to successfully finish their study programs and graduate with satisfaction.

Hypothesis 1: Dropout thoughts are correlated with the seniority of the academic year.

Satisfaction with the program structure, curricula, and content are associated with study success. Any weakness in program content or the relation between the program and the labor market might lead to a rise in the feeling of unreadiness and dissatisfaction in students which might cause dropout thoughts (Suhre et al., 2007, Christenson et al., 2012, Rodríguez-Gómez et al., 2012, 2015).

Hypothesis 2: Program satisfaction is negatively correlated with dropout thoughts.

The individual performance of students is measured by summative and formative assessments (Suhre et al., 2007). Students who do not achieve the class goals and gain high grades are not able to accumulate credits which causes them to drop out (Zajacova, Lynch, & Espenshade, 2005)

Hypothesis 3: Individual performance is negatively correlated with dropout thoughts.

The decision to invest money to carry out university studies is an economic activity based on one's financial capabilities, the fee of the degree, and the expected revenues (Maman et al., 2020). This makes any financial help offered to students, decrease the dropout rate (Chen, 2008; Kuh et al., 2006).

Hypothesis 4: Financial support is negatively correlated with dropout thoughts.

Satisfaction with the organization and its size, the peers, the faculty interaction, the available resources, the relationship between institutions and workplaces, in addition to the orientation quality at the university level all have a powerful effect on students' dropout decision and behavior (Rodriguez-Gómez et al., 2016; Berger & Milem, 2000; Schultz., 2020).

Hypothesis 5: Institutional satisfaction is negatively correlated with dropout thoughts.

Professor´s performance and attitude in the classroom affect students´ thoughts of dropout. While organizing lesson plans, instructors must consider the importance of listening to their students by providing them with a friendly and caring environment and giving enough guidelines throughout the learning process. Teaching methods should be interactive and selected based on competencies and students' strengths and targets otherwise students will be dissatisfied which will encourage their dropout thoughts (Chen, 2008; Gentry, 2014).

Hypothesis 6: Instructional satisfaction is negatively correlated with dropout thoughts.

General Methodological Approach

The study intends to describe the problem of dropout in detail by clarifying its reasons and showing their relation to current social, economic, and managerial settings. It aims to analyze and compare data and findings from different instruments to come up with valid and trustworthy conclusions and applicable solutions. Based on the needs of the research, the objectives, and targets of this study, the work is framed into the mixed method thus combine both quantitative and qualitative analyses. This paper will only tackle the quantitative analysis generated from the surveys.

Data Collection Instrument - Survey

An electronic survey was designed based on the literature review of higher education dropout to understand the position of students towards the topic and the thought of dropout. The official language of the survey was Spanish, it contained 54 questions and it started with an introductory and explanatory paragraph. The survey included several questions regarding the students' study programs and sociodemographic backgrounds. Following that, were some rating-scale questions to check the students' rate of satisfaction towards their study program, professors, tutors, administration, support, etc. Besides, some multiple-choice and open-ended questions were included to examine the students' awareness regarding the topic of dropout, their relationship with the support programs offered by the university and faculty, and their view and future vision towards the major they have chosen.

Dropout consideration predictive questions used a 4-point scale ranging from unacceptable (1) to excellent (4). The questions covered most factors mentioned in the academic and organizational layers in addition to a few from the external layer of the ¨Dimensions of Academic Dropout¨ wheel (Naaman, 2018) that might lead students to drop out. The items collected from the questions were grouped into 5 different predictive factors or independent variables (X).

The Participants

The participants were 211 students studying in the faculty of Education at the Autonomous University of Barcelona (UAB) or the University of Barcelona (UB). 78.2% of them were less than 23 years old, 13.7% had between 23 and 25 years old, and 8.1% were older than 25 years old. 43.6% of the participants started their study program in 2017-2018, 29.9% began in 2016-2017, and 16.6% in the academic year 2015-2016. As for the rest, they had started earlier. The participants were distributed in 4 different study programs.

Table 1

The numbers of participating students

	The general number of students	Number of students doing Childhood Education	Number of students enrolled in Primary Education	Number of students doing Social Education	Number of students doing Pedagogy
UAB	139	12	101	0	26
UB	72	1	41	13	17

Data Analysis Procedure

A binary logistic regression was utilized in examining data. Throughout this paper, a summary of the results between the independent variables (X) and the dependent variables (Y) will be projected. The dependent variable or outcome being Thoughts of Dropout. Positive relations between variables occur when there are higher values of X that result in higher values of Y. Negative relations occur when the higher values of X result in lower values of Y.

Results

The data collected from the questions were grouped into 5 different predictive factors and analyzed through binary logistic regression. In addition to these factors was added the years of progress or seniority year.

• Program Satisfaction. Among the items of this group, there are the following: Program Satisfaction, Atmosphere Satisfaction, Up to Date Satisfaction, Content Satisfaction, and Job Preparation. The reliability of the items was .77.
• Performance. This category contains Personal Motivation Efforts and Academic Performance. The item's reliability was .68.
• Financial Support. Mobility Support, State Support, and Logistics Support could be found in this category. The reliability was .64.
• Institutional Support. This predictive category includes Personal Support, Academic Support, Administrative Support, Department Communication, and Complaint Resolution. The reliability of these items was .77.

• Instructional Support. This category includes only one item, Professor Performance. Tutor Performance was included in this category, but the reliability was low since several students mentioned that they were not aware of the existence of such a position in their faculties.

Table 2

Means, standard deviations, and bivariate correlations of all variables.

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Dropout_thoughts	.41	.49	(--)												
2.Transfer_out	.38	.48	.38**	(--)											
3.Turnover	.97	.15	-.06	-.00	(--)										
4.F1_Program_Sat	2.45	..45	-.26**	-.19**	.10	(.77)									
5.F2_Performance	2.89	.57	-.28**	-.16*	.13	.06	(.68)								
6.F3_Financial_Support	2.24	.61	-.08	-.09	.08	.31**	.03	(.64)							
7.F4_Institution_Support	2.45	.5	-.18*	-.04	.05	.58**	-.03	.35**	(.77)						
8.F5_ProfPerf_Sat	2.6	.63	-.19**	-.14*	.05	.53**	.09	.23**	.40**	(--)					
9.Year_prog	2.44	.67	.20**	.01	.10	-.19**	.06	-.02	-.26**	-.09	(--)				
10.TutorPerf_sat	2.4	.73	-.08	-.07	.08	.31**	.06	.21**	.29**	.33**	.12	(--)			
11.Motiv_extraC	2.24	.95	-.10	.06	.14*	.18**	.13	.12	.12	.10	-.07	.18*	(--)		
12.Know_dropouts	.85	.35	.16	.12	-.06	-.13	-.03	-.01	-.13	-.05	.14	.08	.08	(--)	
13.Fam_support	3.46	.74	-.12	.14*	.14*	.00	.11	-.02	.02	.03	-.03	-.03	.08	-.04	(--)

Note: *Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

The correlation, reliabilities, means, and standard deviations of the study variables can be found in table 2.

A simultaneous binary logistic regression analysis was conducted to predict whether the thoughts of dropout could be predicted by program satisfaction, performance, financial support, institutional support, instructional support, and years of progress. The data from 211 students were used to predict the criterion variable, with having thoughts of dropout as 1, and not having thoughts of dropout coded as 0.

Hosmer and Lemeshow test showed significance when all variables were included, so we reran the logistic regression removing financial support as it was the least reliable between items (.64), leaving only significant variables as program satisfaction, performance, institutional support, instructional support, and years of study, and obtained a non-significant result of .289 > 0.5.

If we were to assume based on the null model that no participant has dropout thoughts, we would be right 58%. Wald 4.65 is significant at p=.031 which means that there is a 58% chance of participants being among those who are not thinking of dropping out.

When the predictors were added, Chi-square indicated 43.28 df = 5 and p < .001 showing that the model is predictive of dropout thoughts. Nagelkerke R Square indicated that the model accounted for 29% of the total variance. The model showed to be able to predict participants who will not have dropout thoughts at 80% and those who will have dropout thoughts at 63%. The model has correctly classified 72.6% missing to accurately classify 27.4% but representing a significant improvement over the constant-only model. The model has increased the predictive capacity from 58% to 72.6% improving the prediction accuracy by 14.6%.

For every one-unit increase in performance, there is a 74% increase in the possibility of not having dropout thoughts, ,b = -1.32, SE = .33, Wald(1) = 15.45, p = .00, Expβ = .265. Every one-unit increase in program satisfaction, there is a 70% increase in the possibility of not having dropout thoughts, b = -1.19, SE = .539, Wald(1) = 4.9, p = .027, Expβ = .303. Each year students' progress in the program is twice likely that they fall into the dropout thoughts category, b = .757, SE = .275, Wald(1) = 7.551, p = 006, Expβ = 2.131. As for institutional support, and professor performance, although b was respectively -.07, -.43 which means that the less students are satisfied with both, the more they have dropout thoughts, both items were not significant in comparison to others in the model with .87, .20.

In addition to the previous results, in a question that asked students to rank dropout rates from the most to the least important, the students answered as follow:

       1- Curriculum deception

       2- The mismatch between expectations and content

       3- Poor Orientation

       4- Financial Situation

       5- Academic Results

Discussions

Although much knowledge has been accumulated regarding higher education dropout (Bean et al., 2001; Hasbun et al., 2016), and several prevention measures (Bean et al., 2001; Chen, 2008; Christenson et al., 2012; Dovigo & Casanova, 2017) and policies were thought of as "No Child Left Behind Act, 2001¨; "Lisbon 2000" and "Europe 2020" to decrease and prevent higher education dropout, many critical questions have gone unanswered. For example, how can dropout reasons be identified? How could we visualize the connection between factors that shape the student´s decisions regarding their studies? This study formulated and tested a multi-theoretical model to answer these questions. By understanding and combining all views and theories that tackled dropout, this research explains how students' decision of whether to drop out is shaped by different dimensions starting from the student personality characteristics to his/her relation and view towards the surroundings and the institution. In other words, the thought of dropout occurs when different factors from different dimensions emerge simultaneously decreasing the student´s intention to continue studying thus leading to dropout. By projecting the reasons for dropout through the model presented in this research, educational institutions would be able to observe the effect of each on students and implement the relevant prevention solutions to either prevent dropout or redirect it to transfer out.

The ¨Dimensions of Academic Dropout¨ wheel

This work pertains to identifying the antecedents that could lead to students' dropout from higher education. The ¨Dimensions of Academic Dropout¨ wheel (Naaman, 2018) has been created to provide universities and educational institutions with an overview of dropout antecedents. This model has helped in dealing with two of the main limitations of previous studies: the difficulty in determining the reasons why a student drops out of a program and the inattention to possible relationships between factors that affect students' decisions (Tinto, 1975; Cook, 2010). As the model tackles the different aspects of a student's life from personality to internal features, external and academic factors in addition to the institutional factors that influence the student's choice; it has managed to combine all previous theories that dealt with dropout. Psychological related to individual features, sociological, and economic caused by exterior reasons, organizational affected by institutions, and interactionalist combining both individual and environmental elements (Chen; 2008). This model facilitates the projection of dropout antecedents and allows more easily linking between them, it contributes as a tool for the institutions to decrease dropout rates that place institutions in a negative light and influence future enrollments.

Identification of Dropout Antecedents in Education Studies

One important finding of the study is the significant relation between the seniority of the academic year and the thoughts of dropout. The results of the binary regression have demonstrated that the most important reasons for dropout at the faculties of education in the two selected Catalan public universities are program satisfaction and academic performance. Financial support has proven to be of non-significance so was removed from the equation. As for institutional support and instructional support, they showed low significance when compared to others through the binary regression; however, as individual items, they had significant correlations with dropout thoughts.

The analysis found evidence that the more students are progressed in their study years at the faculties of Education in the two Catalan public universities, the more the thoughts of dropout occur to them. This entails that throughout their university years, students´ general satisfaction decreases and they feel unready to start their professional career, hence, the confirmation of hypothesis 1.

The regression results show that the relation between the thought of dropout and program satisfaction that includes curriculum design, program content, and job preparation was significant and consistent with some earlier studies (Suhre et al., 2007, Christenson et al., 2012, Gairín et al., 2014) on the relation of quality standards to dropout. There is evidence that students´ feeling of unreadiness to the job market demotivates them and might disrupt their study programs (Rodríguez-Gómez et al., 2012, 2015). Students' dissatisfaction with the program´s relationship with the labor market influences their dropout thoughts. Results demonstrate that the study programs must carry out some improvements to decrease the skill gap. Reflecting on the results obtained demonstrates that hypothesis 2 is proven.

Besides, the study has also revealed that hypothesis 3 claiming that dropout thoughts are affiliated with student performance is correct; an outcome that is in line with previous studies. Student performance which includes

personal motivation, efforts, and academic performance is an item with noticeable reliability that negatively affects the thoughts of dropout. A noticeable percentage of students consider that academic failure is one of the causes of dropout; most academic progress is measured through grades that are indicators of students´ success. Having passing grades influences the students´ integration in the university and increases the feeling of belonging to the institution and the major (Allen, Robbins, & Casillas, 2008; Aulck, Velagapudi, Blumenstock, & West, 2016).

Another insight by this study is regarding the non-significant correlation between the thoughts of dropout and financial support. According to the literature, the socio-economic background of students and their ability to balance financially between their studies, life, and work directly affect their decision of whether to drop out (Arendt, 2013, Maman et al., 2020). The study results were not in line with the previous studies as they did not show any significance between the thoughts of dropout and financial support when it comes to Education studies in the two Catalan public universities, though 64.9% of the students had a part-time job. As such, this study re-question hypothesis 4.

Although not significant when entering them into the regression equation when accounting for the variance due to the other predictors, institutional support and especially in its two items, complaint resolution, and weak orientation in addition to instructional support, have proven to be significant when studying their correlation with the outcome variable, thus both hypotheses 5 and 6 are true.

Weak student performance is also linked to weak orientation at the university level (Ortiz et al., 2013) when choosing the major that suits them the most. Besides, the choice of a major could also be limited by the weak orientation at high school, some types of pre-university entrance exams; for example, the "Selectividad" exam in Catalonia which limits the students´ possibilities (Rodríguez-Gómez et al., 2012), and the low academic performance at the high school level which might prohibit students from choosing the major they want (Rodríguez-Gómez et al., 2012, 2015). Truly, in line with the ideas of Páramo, et al. (2017), it could be concluded that students from different backgrounds who were well-prepared academically in high school and graduated with good grades are usually expected to graduate successfully in college opposite to those with poor high school education.

Similarly, ineffective complaints resolutions policies and procedures decrease students 'satisfaction rate which lowers the quality of students´ performance and leads to dropout (Christenson et al., 2012). Most of the students´ answers have shown a lack of satisfaction in the complaint resolution process, this entails that the thought of dropout becomes higher when students are not satisfied with the support offered by the institution whether personal or academic, and with the process of resolving complaints. Based on the results, few of the students were able to recognize the support programs offered by the universities noting a lack of awareness from the student side. Such results refer to weak communication from the university side regarding the offered services which surely has a negative influence on students´ decision whether to dropout as it shows a lack of attention to students´ needs and weakens their feeling of belonging to the institution.

Tackling instructional support, although not significant when compared to others, has proven to be individually significant in its relation to dropout thoughts. This result ties well with previous studies wherein institutional support including professors´ performance, interaction with students, the use of advanced support study materials, and continuous feedback usually decrease the students´ dropout thoughts as proven by the literature (European Commission, 2015).

Conclusion

In conclusion, this twofold research has offered several insights in different ways.

From one side, it managed to combine all dropout factors in the ¨Dimensions of Academic Dropout" wheel (Naaman, 2018). This model allowed solving two main limitations of previous studies; the difficulty in determining the reasons why a student drops out of a program (Tinto, 1975; Deary et al., 2003; Dodge et al., 2009), and the inattention to possible relationships between factors that affect students´ trajectory (Deary et al., 2003). By doing so, the ``Dimensions of Academic Dropout" wheel offered educational institutions the possibility to decrease dropout rates by observing the predictors that could be influenced by their measures.

From another side, the research study conducted in the faculties of Education of the two Catalan public universities has validated five of the hypotheses investigated. From the short review above, the key findings showed that the dropout antecedents are mainly program satisfaction and academic performance. Our findings on students´ trajectories have also shown that the more students are progressed in their studies at the faculties of Education in these Catalan public universities the more the thoughts of dropout occur.

The results demonstrate two main things. First, dropout predictors are numerous and distributed on different levels as per the ´Dimensions of Academic Dropout´ Wheel (Naaman, 2018). Several times, students experience a combination of multiple dropout factors from different dimensions which put the students at a greater risk of dropout. This study addresses the limitation in the literature by creating a model that projects all dropout factors and distributes them on different dimensions. This model allows a better view of the different factors that when combined, put the student at a higher dropout risk. This general projection allows the detection and application of the best strategies and prevention measures to decrease dropout. Second, the identification of the main dropout antecedents in the faculties of Education at two Catalan public universities allows the faculties to detect the strengths and weaknesses of their services and programs, thus selecting and applying the most suitable prevention strategies to prevent dropout.

The findings of this study are limited by the fact that they only explore the predictors that could be manipulated by educational institutions. The antecedents of dropout are complex and several as projected in the ¨Dimensions of Dropout¨ wheel (Naaman, 2018). Secondly, the sample was limited to one faculty in both Catalan public universities. While this gives valuable knowledge, to begin with when implementing prevention strategies,

generalizing from these findings requires caution. Thirdly, accessing classes, and conducting surveys were challenging on different levels especially due to the data protection law. Fourthly, following students through a longitudinal approach during their studies and investigating the choices taken by those who already dropped out was beyond the scope of the project. Finally, since information is collected only from students, there is a tendency to overestimate external factors as causes of dropout which affects the student perspective but also the Quantitative Analysis Results (in Table 2). To see the effects of organizational dimensions it would be much better to obtain objective data from the universities (with a larger number of universities in the sample) and relate them to their dropout rates.

Future research should consider the ¨Dimensions of Academic Dropout¨ wheel (Naaman, 2018) to analyze in-depth factors as personality, and internal and external dimensions and investigate the antecedents of dropout that are more socio-demographic. Such analysis is recommended to continuously update the prevention strategies implemented based on at-risk students. Also, following up on previous droppers to learn from their experience to improve the educational services might prove important. Furthermore, future research could adopt a different view and examine some outcomes of interest that are other than dropout as transfer out.

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