

## The Role of the Academic Factor in Student's Tendency to University Dropout

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### Abstract

Dropout in higher education has got important dimensions worldwide. The problem has consequences on an individual, social and economic level and it is thus of significance to investigate students' tendency to dropout before the decision to leave their studies is irreversible. Due to the complexity of the dropout phenomenon and the diversity of the influence exerted by different factors, arises intensively the need for a thorough comprehension of the mechanism and decomposition of the exerted intercorrelations. In regards to the above, this research aimed to analyze the effect of the variables within the academic spectrum on students' tendency to dropout of their studies via hierarchical regression trees indicating both the sequence and intercorrelation. From the present work it emerged that the elements of the academic index exert a significant impact on students' tendency to dropout via the sequence of level of study followed by the subject of study, the provision of knowledge to solve complex real-world problems, the feedback by professors on students' work completed, the students' perception of justice and reward in the evaluation procedures concerning them, the clarity of the educational goals and courses' requirements as well as students' satisfaction with the work of the teaching staff.

*Keywords:* dropout, academic factor, student, study subject, university

### 1. Introduction

The dropout phenomenon consists a challenge for university institutions that are called to face it (Commission/EACEA/Eurydice, 2013; Kadar et al., 2018; Kehm et al., 2019; Roso-Bas et al., 2016; Tinto, 2006, 2017). University dropout reflects various manifestations such as according to Tinto (1993) the systemic (permanent dropout of university) and the institutional (dropout of university for somewhere else) (Hovdhaugen & Aamodt, 2009; Tinto, 1993). Due to the consequences on the student, the university and the society as a whole, is crucial to anticipate it in time by designing and implementing strategies to deal with it (Alban & Mauricio, 2019; Berge & Huang, 2004; Cabrera et al., 2006; Hillmert et al., 2017; Mujica et al., 2019). It seems further important to confront in time the problem if we indeed take into consideration the finding of Hovdhaugen and Aamodt (2009) where 20% of students who changed university and 30% of students who dropped out permanently, stated that the university could not succeed in any way to change the decision they have already made to leave (Hovdhaugen & Aamodt, 2009) -a similar finding to that of Sharma and Burgess (1994) (Sharma & Burgess, 1994)

Several studies usually investigate aspects that seem more or less to affect student's dropout such as engagement, burnout, satisfaction, emotional intelligence and motivation (Astin, 1975; Austin et al., 2005; Kehm et al., 2019; McKenzie & Schweitzer, 2001; Pike & Saupe, 2002; Van Bragt et al., 2007, 2011; Van der Hulst & Jansen, 2002). In addition, the various factors affecting student dropout are often classified and categorized towards a further understanding of the complex phenomenon (Adam & Gaither, 2005; Alban & Mauricio, 2019; Berge & Huang, 2004; Díaz & De León, 2016; Kim & Kim, 2018; Kori et al., 2015; Yorke & Thomas, 2003).

In the present work, the dropout rate is approached on the basis of an index consisting of the personal, academic, institutional, social and economic axis where the academic emerged as the most significant to student's dropout. Therefore, it investigates the effect of the academic factor on students' tendency to dropout towards capturing the latest in time, preventing thus the "departure" from the university studies.

Additionally, the present research is focused upon the influence of the subfactors of the academic axis on the tendency to dropout as well as upon the interactive correlations developed among them. The "drawing" of the

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above mechanism can act as a background on which the comprehension of the procedure and the formulation of the efforts towards a more effective confrontation of the problem are feasible.

## 2. Theoretical Framework

The thorough comprehension of the dropout mechanism requires the understanding of the “paths” that lead students either to dropout or complete their degree (Casanova et al., 2018; Dias et al., 2011; García et al., 2016). Simultaneously, it is important to investigate the influence exerted by the diverse factors on students’ decision either to “stay” or “leave” allowing in turn particular interventions with the scope to minimize the risk factors (Casanova et al., 2018).

The dropout phenomenon encompasses great complexity. Its definition can neither “escape” from it; though, its usual interpretation refers to “transfer” to another university school or institution (Aina, 2013; Casanova et al., 2018; Heublein, 2014) or alternatively to “permanent” dropout (Casanova et al., 2018; Gury, 2011).

In regards to the examination of the factors affecting students’ tendency to dropout, influencing definitively their decision to do so, the research is oriented either on one factor or on the conjunction of various factors (Astin, 1975; Austin et al., 2005; Kehm et al., 2019; McKenzie & Schweitzer, 2001; Pike & Saupe, 2002; Roso-Bas et al., 2016; Van Bragt et al., 2007, 2011; Van der Hulst & Jansen, 2002).

Throughout this factorial spectrum, students’ satisfaction is considered a critical factor towards achieving the goal of graduation (Kadar et al., 2018) with the literature highlighting the positive correlation between the two (Jeno et al., 2018; Sneyers & De Witte, 2017; Suhre et al., 2007). An interpretation is that students’ satisfaction enhances the sense of belonging while strengthening students’ investment in knowledge (Sneyers & De Witte, 2017; Tinto, 1987). Indeed, several researchers have emphasized the linkage between student’s satisfaction with the curriculum compared to the dropout rates indicating thus the significance of strengthening the first mentioned in such a way that students are more satisfied with it (Sneyers & De Witte, 2017). In general, if there is no compatibility between the student and the information provided, the risk of dropping out of university studies is high (Hillmert et al., 2017; Tippelt & Schmidt, 2006). Meanwhile, other factors such as the institutional characteristics seem to have a limited impact on university dropout (Sneyers & De Witte, 2017). Overall, according to Tinto, the key issue to dropout is students’ experience within the university in regards to their academic and social adjustment (Tinto, 1993, 1997).

Speaking about students’ adaptation, it is noteworthy that even students with good academic performance can alter university if not attending one of their first choice. An explanation given is that students who study at the university of their first choice adapt more effectively, are more committed to academic assignments and in general perform better; they become compatible with the curriculum and the university as a whole (Casanova et al., 2018) and therefore motivated to further continue (Hillmert et al., 2017).

In regards to the academic context another influential factor emerging is the “wrong” subject choice. The latest consists of a reason for students’ early “departure” from their studies, highlighting the variations in the dropout rates per university school (Tentshol et al., 2019). In terms of the university dropout, an additional significant factor of influence is the professor’s role; indicatively, according to Hall (1999) it took students more than four years to graduate due to their dissatisfaction with the work of the teaching staff (Hall, 1999; Sneyers & De Witte, 2017).

Furthermore, the research has particularly emphasized on the general emotional and pedagogical process experienced by the students in the classroom (Berliner, 2005; Darling-Hammond & Youngs, 2002; Fenstermacher & Richardson, 2005; Joyce et al., 2003; Magen-Nagar & Shachar, 2017; Wayne & Youngs, 2003). In particular, the process of teaching, counseling and supervision by the professors has a positive effect towards the diminution of dropout phenomenon, mainly in freshmen (Cabrera et al., 2006), as the professor is considered a key principle in terms of “teaching quality” enhancing student’s self-efficacy and expectations for improvement (Magen-Nagar & Shachar, 2017; Schmidt et al., 2007).

In the same line of argument, the assignments and the interpersonal feedback are included in the long-term processes of investing in studies. Indeed, feedback strengthens apart from a student's cognitive skills, also his/her commitment.

This develops in turn, the necessary link between the individual academic performance and its results (Hillmert et al., 2017) as well as self-confidence, awareness (Brooman & Darwent, 2014; Ortiz-Lozano et al., 2018) and the learning independence (Tang, 2017). As a consequence, student’s irregular attendance and absenteeism are

considered risk factors for dropping out of university mainly due to student's lack of adaptation to the academic context (Magen-Nagar & Shachar, 2017; Prevatt & Kelly, 2003).

Another important academic issue is the provision of knowledge for solving real world complex problems. It is central towards the learning enhancement along with the critical thinking and analysis (Tang, 2017) while its lack aggravates the dropout rates (Ortiz-Lozano et al., 2018). Extending the argument, the enhancement of students' ability to recognize and relate the content of the material taught with representations of real-world scenarios through specific principles and concepts in a context that students are interested in, is of importance (Tang, 2017).

Within the above framework is met additionally the perceived "justice" by students in their academic environment. In particular, when students consider educational systems as unfair or discriminatory then they lose their trust mainly, motivation, satisfaction and even their commitment to the university. Students' perceived inadequacy of justice triggers their tendency to dropout of university or the decision to continue their studies elsewhere (Marcinkowski et al., 2020).

In this line of argument, there exist certain factors influencing significantly the dropout rate being indeed unexpectedly constant in several schools and various levels of academic performance (Hillmert et al., 2017). In particular, students' perceived fairness in regards to their evaluation procedures consists a determinant of failing or succeeding in their studies. It is noteworthy that when students consider the fairness in the evaluation procedures towards them -such as grades-, as inadequate then the tendency to "distance" themselves from the studies is stimulated as they consider this as a lack of reward for their efforts, resulting in the uncertainty of the academic success and the tendency to dropout (Hillmert et al., 2017).

In regards to the above, the present research has the purpose reflected by the following research question: **Research Question 1.** Via which hierarchical sequence the academic subfactors affect students' tendency to dropout of their studies.

The accomplishment of the research's purpose could enlighten the mechanism through which the academic factors affect students' tendency to leave their university studies, in an effort to decompose the complicated phenomenon of dropout and its factorial influential intercorrelations. On a practical level, a "map" is formulated towards the unceasing purpose to improve particular academic issues and the constant conception of certain assumptions compatible with the prevention of student dropout "capturing" the tendency, in time.

### 3. Methodological approach

The statistical population of this study consists of the students of University of Patras where at the time of the study –May 2019-, encompassed twenty-four departments classified to five Schools, having 18,411 enrolled students. It is the third largest Greek university and accepts students' admissions from all over the country via a national examinations system occurring once a year. The population above can be considered as representative to its geographical distribution by proper weighting.

This research where 696 valid questionnaires were used focuses on the influence of the academic axis' sub-factors on students' tendency to dropout. A structured questionnaire was distributed and answered via interviews, based on procedures of the Department of Economic, Social and Quantitative Research of the Laboratory of Management Information Systems and Business Intelligence at the Department of Business Administration of the University of Patras. In order to construct the student tendency dropout indicator, the methodology followed was based on the factorial categorization by Diaz et. al (2016) and Alban & Mauricio (2019) where an inventory of 112 predicting factors to dropout emerged from their systematic literature review and classified into five categories, imparting also variables the literature tightly connects to students' dropout (Alban & Mauricio, 2019; Díaz & De León, 2016).

Analogously, in the present research, the student tendency dropout indicator was composed by sixty-nine (69) items imparted to five factorial categories: personal factor (individual characteristics), academic factor (characteristics of academic interaction), economic factor (characteristics of student's economic situation), social factor (characteristics of student socialization) and institutional factor (university characteristics).

Focusing on the academic factor, this includes twenty-three (23) items (illustrated in Table 1) while eighteen out of twenty-three items were reversed in order to have a positive correlation with the dropout indicator. Because of the fact that the questionnaire encompassed questions of different scales, it was applied item response theory due to its characteristic of the "invariance" property, in order to uniform the scales more effectively compared to a simple normalization, (Zanon et al., 2016).

Regardless of the subjectivism the measurements encompass, they are considered as good predictors of behavioral intentions (Duque, 2011; Lizzio et al., 2002). Therefore, the evaluation of the academic factors by the student can be considered as a limitation of this research and thus could be in future complemented with more objective measurements (Rupp & Zumbo, 2004).

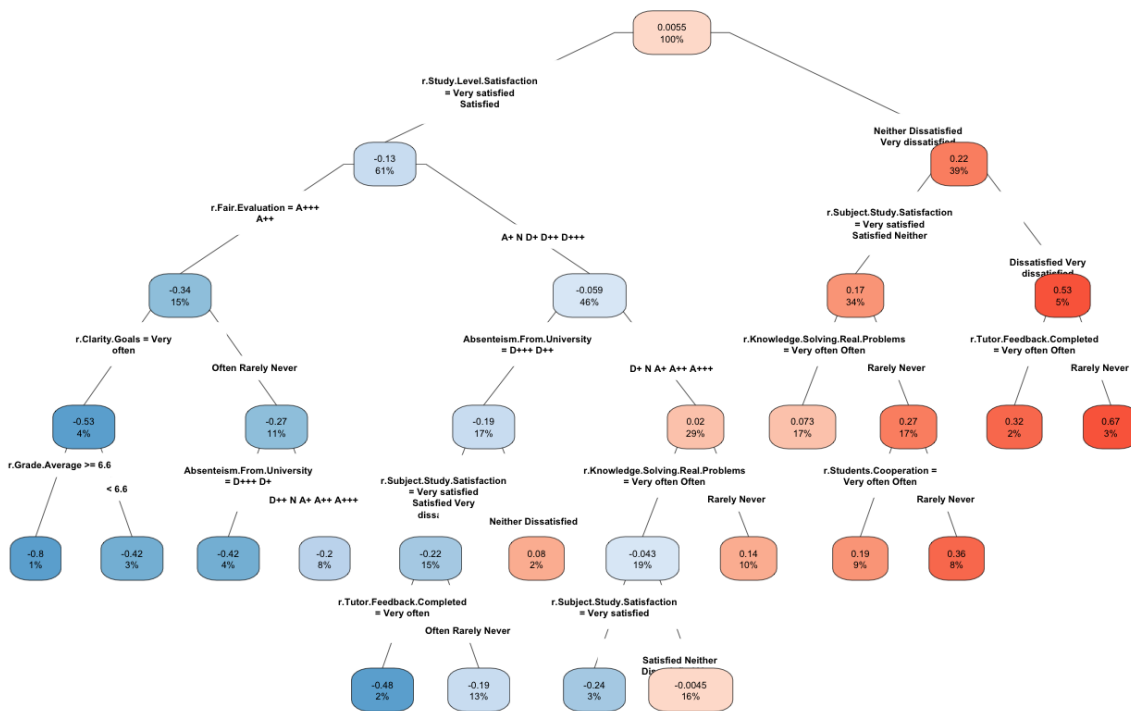
Moreover, the research was conducted on students who have not dropped out definitively and therefore exclusively the tendency to dropout was examined consisting of further limitation. Therefore, this work in future could be extended with a student sample having irreversibly dropped out allowing comparisons accordingly between the dropout rates.

#### 4. Numerical Results

In order to investigate the sequence of influence of certain factors on the change of a variable, a technique often used is the hierarchical regression tree via which the dependent variable is decomposed into a number of independent variables (Breiman, 2017). In this research, the Rpart library of R (Therneau et al., 2018) was used towards the implementation of the hierarchical regression trees. Additionally, an appropriate pruning procedure was implemented so that the cross-error rate is minimal and at the same time the final hierarchical tree optimal.

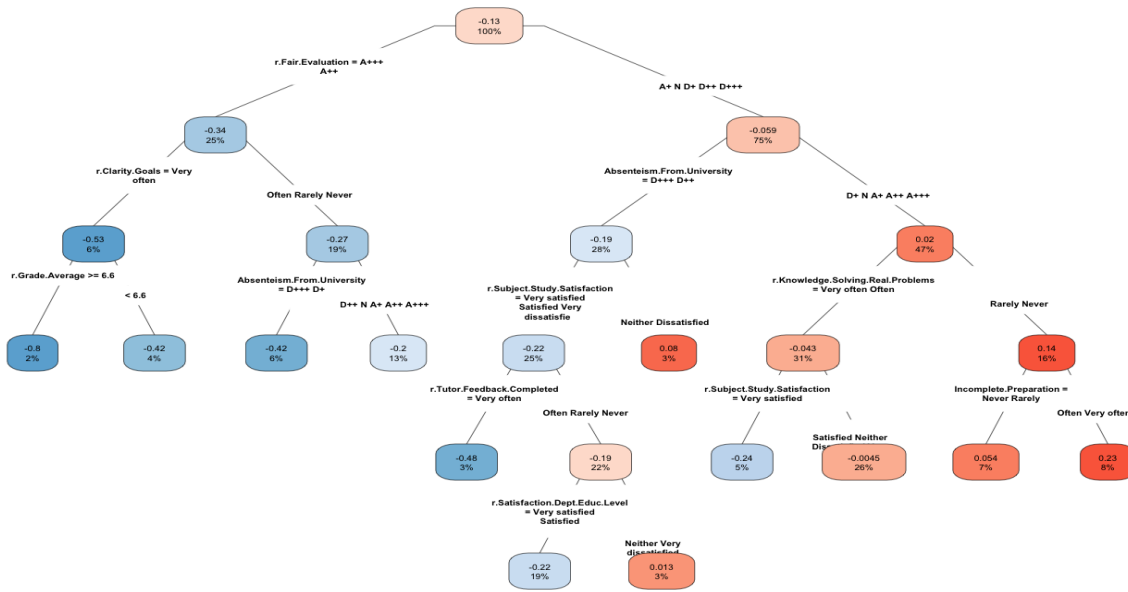
The analysis via the academic factor's hierarchical regression tree and its twenty-three (23) independent variables led to the optimal tree shown in Figure 1.

**Figure 1 Academic Factor's Hierarchical Regression Tree**



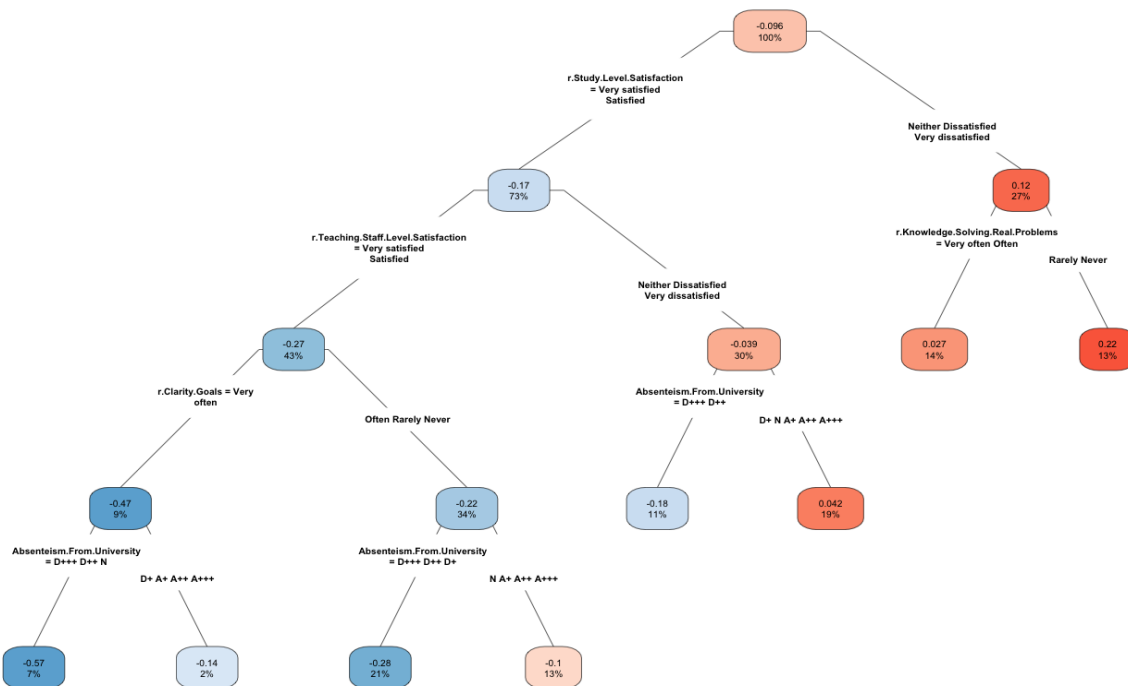
From Figure 1 it follows that a student's satisfaction with the level of studies is a key factor to dropout since the dissatisfaction (right part of the tree) leads to dropout rate's values higher than the average. The right part of the tree where the dropout rate increases is mainly affected by the subject of study and additionally the provision of knowledge for solving real-world problems as well as the professors' feedback on students' completed tasks. Meanwhile, the left side of the tree where the dropout rate decreases is affected by the student's perception of justice and reward within the academic environment followed by the clarity in educational goals and course requirements. Therefore, a clear distinction can be noticed between the factors that aggravate the tendency to dropout and those that improve it. The items shown in Figure 1 with their importance in the hierarchical regression tree are illustrated in Table 1 along with those presented in the rest of Figures.

**Figure 2** Hierarchical Regression Tree for Students Very Satisfied with Their Studies' Level



Focusing on the hierarchical tree of Figure 2 that illustrates the factors affecting the dropout rate when students are very satisfied with the level of their studies, it can be noticed that students' perceived fairness and reward emerges as the most important factor. Indeed, those students who are satisfied with the level of their studies may “give up” in case they perceive lack of justice and reward in the evaluation procedures concerning them. A reasonable question arises, is how can a student be satisfied with the level of his/her studies while the professors are not fair? The answer may lay in the broader meaning of the level of studies where other factors apart from students' perceived justice and reward do matter more. Nevertheless, the importance of students' perception of justice and reward is unquestionable in the frame of satisfaction with the level of study and therefore its inadequacy or absence can affect the student's overall satisfaction with the provided level of study.

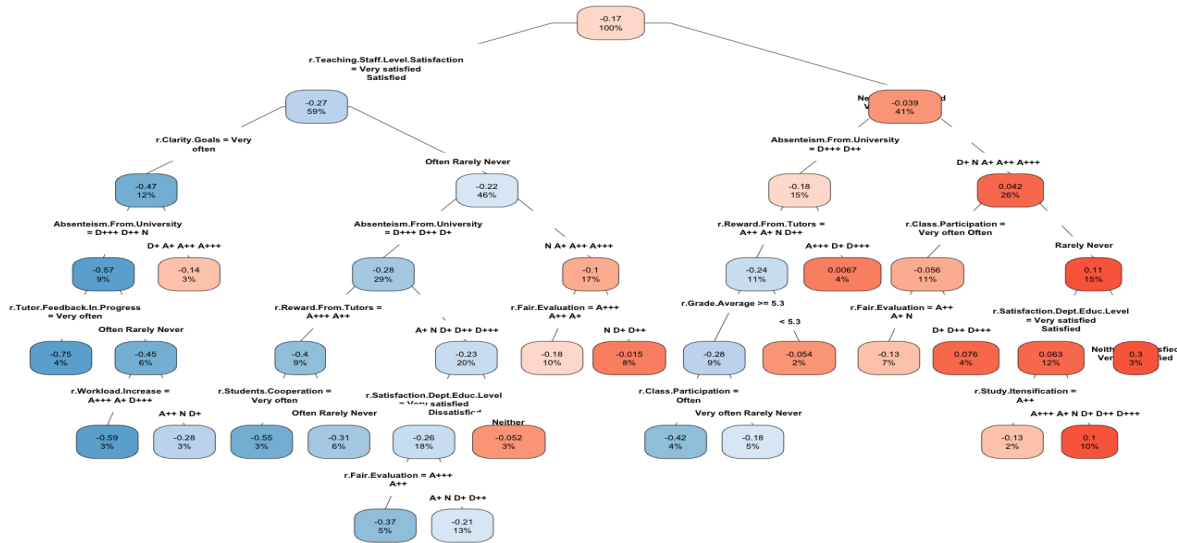
**Figure 3** Hierarchical Regression Tree for Students Very Satisfied with Their Studies' Subject



In regards to Figure 3 it can be observed that the most important factor affecting the dropout rate for students who are satisfied with the subject of study, is the level of their studies. Therefore, if the level of study is not satisfactory if combined with lack of knowledge to solve real-world problems, then the situation is led to an increase in the dropout rate as shown on the right part of the tree in Figure 3.

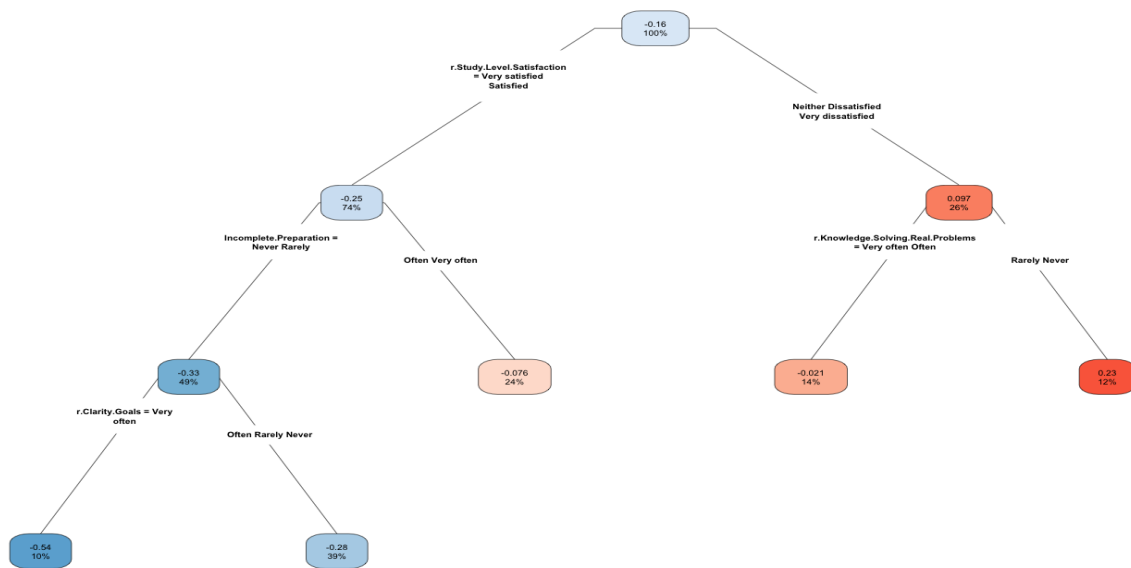
In further, focusing on students who are very satisfied both with the subject and the level of study, the corresponding hierarchical tree presented in Figure 4 emerges.

**Figure 4** Hierarchical Regression Tree for Students Very Satisfied with Their Studies' Level and Subject



In the case where students are very satisfied with both the subject and the level of their studies, someone would expect the dropout rate to be significantly below the average and therefore encompasses purely negative values. To become more specific, under the condition where students are dissatisfied with the work of the teaching staff, the “good background” -where students are very satisfied both with the level and the subject of study- can be eroded, leading in turn to medium level dropout rates. In further, when students’ satisfaction with their professors’ work is low then their absenteeism is consequent, leading to an increase of the dropout rate up to medium level. It is interesting that almost none factor is able to reverse the tendency to dropout when students are dissatisfied both with the level and the subject of their studies. In the same line of argument, the clarity of the educational objectives emerges as the critical factor that differentiates the low from the average levels of the dropout rate regardless of the existence of students' satisfaction with the work of the teaching staff.

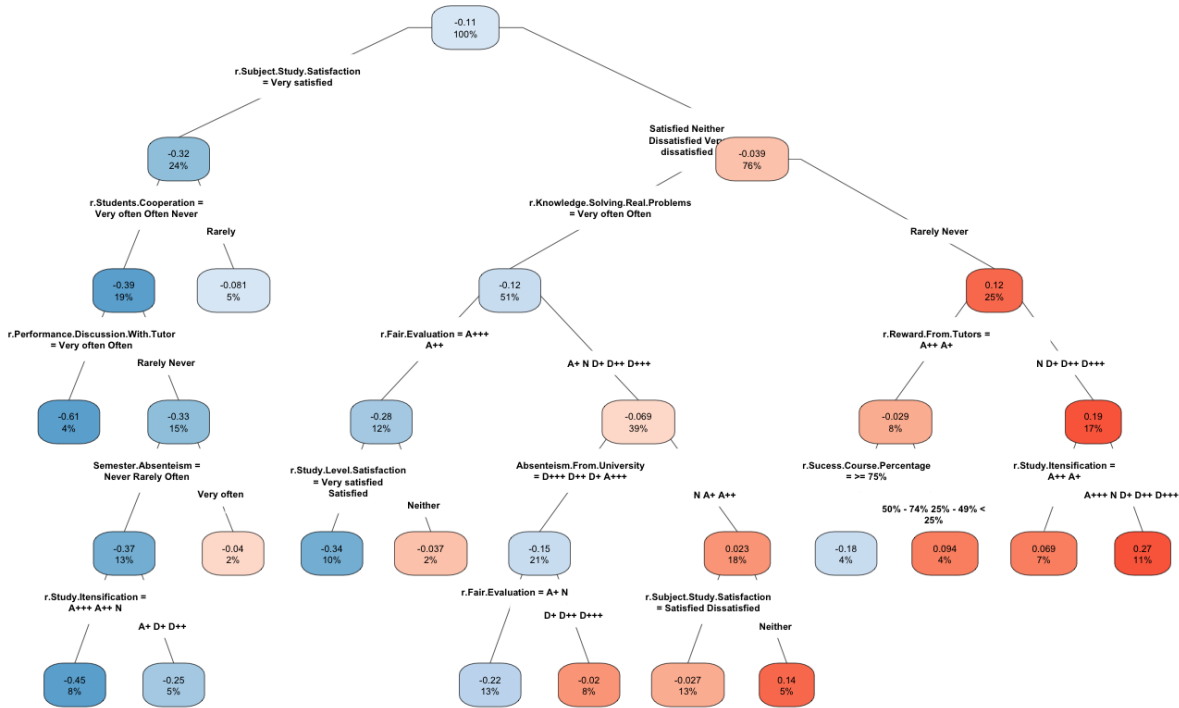
**Figure 5** Hierarchical Regression Tree for Students Considering Their Professor’s Judgment as Fair



From the hierarchical regression tree in Figure 5 it follows that in 40% of the student population who conceive their professors' judgment as fair, then the level of studies emerges as the main factor in terms of the differentiation of the dropout rate. That is, when professors’ judgement is perceived by students as “fair” then the only reason for a student to consider dropping out is his/her dissatisfaction with the level of studies whereas the subject of study does not play a role confirmed by the influence percentage of 5.49% shown in Table 1.

It appears that student’s perception of justice and reward is a “catalyst” in the framework of dropout “degrading” the influence of dissatisfaction with the subject study.

**Figure 6** Hierarchical Regression Tree for Students Very Satisfied with the Level of Studies within Their Department



In further, focusing on students who are satisfied with the level of study as illustrated in Figure 6, then, dissatisfaction with the subject of study emerges as the most crucial factor differentiating the dropout rate. In addition, on the left part of the regression tree it can be noticed that the average values of the dropout index are determined by students’ absence from lectures in conjunction with a lack of perceived justice and reward. On the right side of the regression tree it can be observed that the dropout index is determined by students’ perceived dissatisfaction with the provided knowledge towards solving real-world complex problems.

**Table 1** Academic Factors’ Item Description and Their Variable Importance Emerged in the Hierarchical Regression Trees of Figures 1 to 6

No	Variable Item description	Variable Importance of factors shown in Figures 1-6					
		Fig 1	Fig 2	Fig 3	Fig 4	Fig 5	Fig 6
1	r.Study.Level.Satisfaction What is the degree of your satisfaction with the level of your studies?	29.1 1	0.98	28.7 7	0.98	36.4 5	3.78
2	r.Subject.Study.Satisfaction What is the degree of your satisfaction with the subject of your studies?	15.7 7	9.67	0.50	0.98	5.49	19.1 8
3	r.Fair.Evaluation My professors’ judgment is fair.	9.43	28.3 7	2.77	4.17	0.63	10.4 1
4	r.Satisfaction.Dept.Educ.Level What is the degree of your satisfaction with the level of studies offered by your Department?	8.70	0.42	5.42	1.99	2.00	
5	r.Knowledge.Solving.Real.Problems To what extent has your university experience contributed to your knowledge skills and personal development in solving complex real-world problems?	7.47	7.22	4.26	0.64	6.67	12.8 7



6	r.Clarity.Goals During the academic year, to what extent did your professors clearly explain the objectives and requirements of the courses?	5.97	6.48	10.8 4	17.7 2	11.5 5	1.72
7	Absenteism.From.University I am often absent from my duties at university	4.97	16.1 1	12.4 5	24.3 6	2.73	10.1 7
8	r.Teaching.Staff.Level.Satisfaction How satisfied are you with the work of the teaching staff and their contribution to the completion of your studies?	4.32	0.80	18.1 0	29.2 1	2.50	0.16
9	r.Tutor.Feedback.Completed During the academic year to what extent did your professors provide feedback details on tests or assignments completed?	2.92	2.36	1.75	1.28	1.18	3.53
1 0	r.Reward.From.Tutors My professors reward my achievements and effort.	2.49	6.11	2.23	4.37	2.71	5.73
1 1	r.Tutor.Feedback.In.Progress During the academic year to what extent did your professors provide feedback on projects or assignments in progress.	2.01	2.10	2.02	2.56	1.26	1.53
1 2	r.Study.Itensification I work intensively to cope with my academic duties.	1.72	5.40	1.17	1.04		4.70
1 3	r.Class.Participation During your current academic year, how often have you asked questions or contributed to discussions through other ways.	1.53	0.49	1.67		2.55	1.30
1 4	r.Workload.Increase The workload has increased	0.94	2.96	0.33	0.64		2.80
1 5	Semester.Absenteism How many times have you been absent from lectures this semester?	0.77	2.43	2.29	4.47	0.99	5.09
1 6	r.Grade.Average What is the average of course grades you have passed this semester?	0.67	4.59	0.56	1.10	1.96	4.52
1 7	r.Sucess.Course.Percentage What is about the percentage of courses you have passed so far, in relation to the courses you should have passed in the same period?	0.42				0.50	2.71
1 8	Incomplete.Preparation During the current academic year, how often did you come to class without having completed your reading or homework.	0.36	1.13	1.68	3.28	16.9 0	2.03
1 9	r.Performance.Discussion.With.Tutor During the current academic year, how often did you discussed your academic performance with a faculty member;	0.23	1.66	0.49	0.96	0.63	4.04
2 0	r.Deadline.Pressure Has the pressure to meet the assignments deadline increased?	0.21	0.65			1.30	0.79
2 1	r.Students.Cooperation During the current academic year, how often did you collaborate with your fellow students on assignments or courses?			2.56			2.49
2 2	Attempt.Univ.Entrance On which trial did you succeed to enter university?			0.13	0.26		
2 3	Univ.School.Preference.Order On which preference order was the school you attend?					2.00	0.45



## 5. Discussion

The complex phenomenon of student dropout is approached by the impact of various categories of variables, phenomena and factors (Díaz & De León, 2016) but the question of how these frameworks interact to predict students' dropout needs indeed further analysis (Bardach et al., 2019). In regards to the above, in the present study an attempt is made to investigate the hierarchical sequence via which the factors imparted to the academic context interact and affect students' tendency to dropout of university studies.

Therefore, one of the main findings of the present work is that students' satisfaction with the level of studies stands out as the most important factor throughout the academic "spectrum" differentiating significantly the dropout rates and highlighting its lack provokes dropout rates higher than the average. In addition to this, the present research indicates that the dropout tendency also increases under the circumstance of inadequate satisfaction with the provided level and subject of study.

In regards to the latter the importance of the subject of study emerged in this paper second in the hierarchy row following the significance of the level of study. The important role of the subject of study is not neglected and this is in line with Georg's study (2009) where the primary reason for student dropout is student's weak commitment to the university school or more precisely to the subject of study (Georg, 2009) which in term consists a predictor for the tendency of students' "early departure" from university (Truta et al., 2018). Accordingly, the wrong choice of the subject of study is one of the most common reasons expressed by students who dropout (Davies & Elias, 2003; Yorke, 1999, 2000; Zajac & Komendant-Brodowska, 2019). In regards to the above, the present work revealed a very strong combination in the frame of students' tendency to dropout where almost none factor can reverse it and that is students' dissatisfaction with both the level and the subject of study.

The present research also arises the case of students who are satisfied with the knowledge they receive for solving complex real-world problems where the dominant factor in differentiating the dropout rate is their satisfaction with the level of studies. In this case, the tendency to dropout is not aggravated unless the "lack of justice and reward" exists. It is noteworthy that students' satisfaction with the provided knowledge to solve complex real-world problems combined with their satisfaction with the subject of studies proved to be a strong barrier to the tendency to dropout. Interestingly, in the case of students who are satisfied with the level of their studies, it emerged that the dropout rate was unexpectedly increased led by the inadequate satisfaction with the provision of knowledge towards solving real-world complex problems.

The importance of the "knowledge to solve real world complex problems" has been accordingly highlighted in recent studies where the perception of quality in higher education -teaching, curriculum, learning resources- affects student's behavioral tendencies (Duque, 2011). However, there is also the view of the weak linkage between the possibility of dropping out of studies and the incoming level of knowledge and skills (Venuleo et al., 2016).

The present work reveals in further the significance of an additional factor that encompasses predicting power to dropout, namely the perceived by the student fairness and reward. The factor of fairness and reward particularly in the case of students who are satisfied with the level of studies acts as a booster against the tendency to dropout. The significance of the above factor is further indicated by the research finding that the lack of perceived justice and reward can push to dropout even students very satisfied with the level of their studies. It is interesting that when focusing on students who perceive their professor's judgment as fair, it was observed that the effect of the factor "satisfaction with the subject of study" was "degraded"; that is, students' perception of adequacy of justice and reward catalytically reduces the tendency to dropout "eliminating" the negative effect of the factor "dissatisfaction with the subject of study". This may explain why many students while not studying in the field-subject of their choice "surprisingly" complete their studies successfully.

Accordingly, studying in a field the student "dislikes" either due to a wrong choice of study subject or lack of achievement of the first choice consists of an influential factor to the tendency to dropout highlighted in research. Indicatively in Bernardo et al. (2016) research, in 80% of students who dropout of their studies, it was revealed that the "subject of study" was not their first choice due to either insufficiency of the required degree of admission or other factors such as motivation parameters (Bernardo et al., 2016).

On the contrary, students enrolled in universities or in subject of their first choice perceive positively the adequacy of their efforts and overcome the expected difficulties (Casanova et al., 2018; Vries et al., 2011). In the framework of the academic context examined in this work, the clarity of educational goals and course requirements emerged as an additional factor that works against the dropout tendency mainly in the case of students satisfied with their experience at university.

In a broader context, it is accepted that the inadequacy of information provided can lead the student to early “departure” from studies (Bardach et al., 2019; Heublein, 2014). Indicatively, the research of Zajac and Komendant-Brodowska (2019) emphasized that the insufficient information before the choice of the subject of study, the unexpected difficulty of certain courses not adequately described from the beginning, the complexity of both the study guide and admission criteria were crucial factors “triggering” the decision to “leave” (Zajac & Komendant-Brodowska, 2019).

Furthermore, from the present study it follows that students who are very satisfied both with the level and the subject of their study may show mean instead of low values in the dropout rate when not satisfied with the work of the teaching staff and thus be absent from the courses attendance leading the dropout rate up to the intermediate levels.

In regards to the role of student’s attendance and participation in the courses, it is of importance as it appears a significant connection with students’ retaining in studies mainly through student’s social and academic adaptation to the university (Bernardo et al., 2016; Tinto, 1997). Indeed, the attendance of the courses, the support and the quality of work by the teaching staff improve the learning academic environment and thus strengthen the retention (Hovdhaugen & Aamodt, 2009; Yorke & Longden, 2004).

Within the academic context, the present research arises additionally the role of the professors’ feedback to dropout tendency. Precisely, it emerged that if professors do not give feedback on the work done by students, the students’ tendency to dropout is induced especially if not satisfied with the level of the studies. Respectively, according to Hovdhaugen and Aamodt (2009) a close guidance and a good level of teaching were mentioned by students as the only ways via which their decision to leave university, might have changed (Hovdhaugen & Aamodt, 2009). Another issue raised in this work is the importance of the “satisfied student” throughout several cases in the process of dropout mechanism. On overall, the way students perceive the learning outcomes, the university experience, learning behaviors and attitudes exert a crucial influence on students’ holistic satisfaction; the more satisfied students are with the university, the less likely they are to dropout (Duque, 2011).

## 6. Conclusion

Evidently the phenomenon of student dropout is not simple but rather complex both theoretically (Casanova et al., 2018) and practically in regards to its measurement (Zajac & Komendant-Brodowska, 2019). The believed complexity of the dropout problem seems strongly to be not the consequence of a short, impulse decision nor of a single factor; instead, it is rather a process of accumulated factors leading to outcomes that make student withdrawal inevitable (Heublein, 2014).

The present study focused on variables in regards to the academic context with the purpose to study via the implementation of hierarchical regression trees the sequence and intercorrelation of their effects on students’ tendency to dropout. In this way, the separate “paths” of influence are examined, that is if one parameter works towards the direction of strengthening or the deterrence to the dropout tendency rate. In further, the present research highlights the diverse cases on the dropout rate according to students’ diverse status. Under the assumption that students are not an homogeneous population where one single intervention could uniformly be applied to all, the practical implications can be diverse.

In summary, the present research revealed that the subfactors of the academic index with a significant impact on the tendency to dropout are mainly the level of study followed by the subject of study, the provision of knowledge to solve complex real-world problems, the feedback by professors on students’ work completed, the students’ perception of justice and reward in their evaluation procedures, the clarity of educational goals and courses’ requirements as well as students’ satisfaction with the work of the teaching staff.

Consequently the research question posed in the present work is answered through the confirmation of the effect on students’ dropout tendency by the factors investigated above and simultaneously by the configuration of the exerted interactions. In respect to the democratization of education and the enlargement of access, this work could contribute in further to the thorough decomposition of students’ dropout phenomenon under the unceasing spectrum of theoretical and practical comprehension.

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