A LOW SUCCESS EXPECTATION LEADS TO BREAKDOWN AND WITHDRAWAL FROM UNIVERSITY.

J. Esteban Fernández, University de Oviedo, vicecalidad@uniovi.es
Samuel Fernández, University de Oviedo, samuel@uniovi.es
Alberto Álvarez, University de Oviedo, suarez@uniovi.es

ABSTRACT

The European Union has put forward the proposal or reducing university withdrawal rates to 10% by 2010; on the basis of previous research, we know that the factors associated with this issue develop out of multiple causes, which range from the psychological, social and educational characteristics of students on the one hand, to low teaching and institutional efficacy, on the other.

The present study analyses certain processual, intermediary and/or model variables leading to academic achievement and efficacy, such as student expectations of success in a given subject or the existence of subjects considered difficult.

In order to find out the main circumstances linked to withdrawal, we have analysed the 57 degrees of the University of Oviedo and tried to identify the factors which establish the difference between degrees with high and with low withdrawal rates; these two groups had previously been determined by cluster analysis.

The contrasted analysis of these two groups shows significant differences in variables concerning student success expectation in the subjects and also in the percentage of low-success subjects.

In order to complete the portrayal of student expectation as a university withdrawal measuring variable, the elements of this expectation have been analysed by means of linear regressions; which has allowed us to conclude that 87.7% of it is accounted for by the subjects' success and efficacy.

1. Background and foregrounding.

The interest in the analysis of delayed graduation and university withdrawal in Spain stems from a state of social uneasiness caused by recent data which show that 30% of Spanish university students never complete the degrees for which they enrolled, as opposed to 16 % average drop-outs in the UE, prior to the enlargement (Michavila, F., 2006). Spanish students seem to be amongst the most hard-working in Europe, in terms of the amount of time they spend in class; in spite of this, they drag on the highest failure rates. According to the National Plan for University Quality Assessment (Plan Nacional de Evaluación de la Calidad Universitaria (PNECU), only 26% of them graduate within the expected time-frame, and 60% of the drop-outs take place in the first grade.

In order to plan actions which can contribute to minimizing this problem, it becomes necessary to carry out studies with the purpose of identifying the causes of withdrawal and of long permanence in tertiary education; since student “desertion" is a clear indicator of low quality for the educational system and it reflects important failure in the processes of adaptation, orientation and follow-up of the university student.

Previous studies point to a wide variety of circumstances as the main causes, including low previous knowledge (Zubieta and Susinos, 1986), an inadequate choice of field of study (Corominas, 2001), difficulties related to learning strategies (Ryan and Glenn, 2003), inadequate academic and social integration (Tinto, 1975) and other psychological reasons, such as the inability to wait for a delayed reward or of overcoming obstacles (Landry, 2003), low self-esteem (Masjoan, 1989), and other family or social factors (Latiesa, 1992; Sinclair and Dale, 2000).

There have been several attempts at the construction of theoretical models to explain university withdrawal. On the whole, the analyses focus on three groups of variables: students, teachers and the institutions; but the influence granted to each of these groups differs in weight. Bean (1990) considers students alone to be responsible for university withdrawal, since he claims that their capacity to integrate in the academic system depends on their own positive or negative conduct. Other student factors have been highlighted, such as the lack of abilities to face the demands of the degree: unsuitable previous knowledge, inadequate attitudes towards learning, mismatch between student expectations and the characteristics of the selected degree, inability to adapt to the academic structure, or learning styles which do not suit the chosen degree, etc. (Kirton, 2000; Wasserman, 2001; Landry, 2003; Gonzalez et al, 2004, among others).

Pedagogical inefficiency is highlighted amongst *teacher factors*, in the form of scarce exposition clarity, insufficient knowledge of the subject, lack of reflection and critical analysis, as well as scarce personal involvement in teaching. Other issues which can be pointed out are: a lack of individualized attention to students and scarce dedication to their professional tasks, which were expressed by students in surveys carried out by Escandell, Marrero and Castro (2002) and in the analysis developed by Van Ours and Ridder (2003).

Other issues appear amongst *the factors related to the institution*, such as, lack of clearly defined objectives from the university, its departments and educational centres, lack of coordination amongst the teachers within each degree, as well as the university admission system, with restrictions to admission in some degrees, etc.

Nonetheless, most of the authors have focused the analysis on the relationships between variables to explain university withdrawal. For Tinto (1975, 1993), a student's decision to change or pursue his/her education is determined by the degree of satisfaction he/she has achieved in response to the demands of the university. In this line of thought, the decision to go on studying is related to a better capacity to respond effectively to demands; and on the contrary, the lack of positive outcomes triggers a situation of academic breakdown and wish for a change.

The research carried out by Thomas (2002) proved that much of the responsibility lies on the interaction between the academic institution and other social factors, such as the social groups to which students belong and their social support; similarly, Levy-Garboua (1986) has claimed that academic success or failure in tertiary education depends on two main factors: the effort and initial capacity of the candidates, and the human and material resources provided by the institution. Accordingly, efficacy could be guaranteed if the institution was aware of the students’ initial capacities at the beginning of their university education, if it carried out a detailed follow-up and adapted its structures and resources to those characteristics.

On the whole, all the previous research mentioned above supports the idea that university withdrawal stems from a variety of causes. This hypothesis has been corroborated by Corominas (2001), who found different kinds of evidences in the course of the same study, including inadequate student learning potential, doubts concerning the adequate choice of discipline, lack of quality of the teaching, as well as other circumstantial aspects, such as financial issues or incompatibility with a working position, etc.

Regardless of its origin, it is evident that high withdrawal rates and delays in the pre-established time-period to obtain a degree are amongst the most serious problems in want of a solution in the endeavour to improve the quality of higher education programmes. The European Union has proposed the reduction of university withdrawal rates to 10% by 2010; therefore, Spain will have to reduce its current rates by 20 percentage points in order to meet the European average. (Michavila, 2006).

Within the analysis of the previous context we must highlight the great importance of a set of variables concerning student aptitude, effort and fulfilment, which we shall consider basic; and also the variable of quality education, which has frequently been under scrutiny lately, since it is a complex variable joining together didactic aspects and teacher competences.

Another approach to the analysis of university withdrawal derives from the study of the consequences of this social problem. Thus, any student pursuing tertiary education in a public university is Spain pays for 15-20% or the total cost of his/her tuition; the rest is financed by the state through the university public funding system.

The indicators used to analyse the cost of university education contain two main components: an internal one concerning *efficiency*, which measures the degree of adequacy of the outcomes obtained by the university in terms of all the human, material and financial resources available; and an external component, which measures the "social" efficiency as regards the employment perspectives of the graduates, the contribution of university research to social and economic development, and the degree of educational satisfaction.

The most frequent indicators for cost analysis, from the point of view of efficiency, are the amount of graduates, graduation rates, performance and success rates, the average delay in graduating, the amount of drop-outs, the public and private costs of delay and the public and private costs of withdrawals.

However, to establish the costs, it must be taken into account that tuition fees may vary according to the number of credits and to whether the degree requires experimental practices as well as the surcharge applied when students enrol for one or more subjects for the second time and in subsequent occasions. Therefore, the cost of the first grade at Spanish public universities may be estimated between 500€ and 750€, while for the rest of the degree it will depend on the academic performance of the student; that is, on whether he/she fails and needs to repeat any of the subjects, which would be subject to surcharge. Thus, a student with an average performance could pay between 600€ and 850€ for the second and subsequent grades; consequently, the cost of graduating in a four-grade degree may reach approximately 2,400€ - 3,400€ in tuition fees.

In our opinion, it is difficult to modify these variables in the short term, because they are basically personal, social and political in nature or because they are subject to cultural structures and are teacher-oriented rather than learner-oriented. In this understanding, we think that it is useful to analyse certain processual, intermediary and model variables leading to academic achievement and efficiency, such as student expectations of success at a given subject or the existence of subjects considered difficult. The first of them is a variable that summarises most of the student's personal circumstances and his/her relationship with the success values of a given degree. The second variable will be analysed because it reflects inadequate pedagogic procedures which cause educational failure, such as the accumulation of students who fail a given subject.

2. Methodology.

The main purpose of this paper is to analyse the variables of student expectation and subject difficulty, because we consider them susceptible to the possibility for both students and teachers of making improvements in the way they handle those issues. The methodology we will use to face this challenge requires several stages: context description, definition of the relevant variables, analysis of relationships among variables, degree classification (into two groups: with high or with low withdrawal rates) and the study of the most significant differences between those two groups.

Firstly, we need to calculate the withdrawal rates for the three academic years from 2003-2004 till 2005-2006; and, for the study of relationships between variables, we will make use of a correlation matrix, setting the significance level at 95%.

The classification of degrees will be done by cluster analysis, which will allow us to establish the amount of groups to consider and the degrees included in each group.

In order to study the differences between the groups and to identify the incidence of the variables under consideration on university drop-out rates, we will use nonparametric tests on two independent samples.

The study is structured to fulfil the following objectives:

- To determine the withdrawal rates for several academic years.

- To classify the degrees according to their withdrawal rates.

- To describe the groups of degrees according to the factors which determine high withdrawal rates for some degrees and low rates for others.

Bearing in mind the social and economic circumstances in which the university is now-a-days immersed, and after having discussed the conclusions of previously published research, we set out from the premise that the factors associated to drop-out and graduation delay stem from a variety of causes, ranging from psychological, social and educational characteristics of students, on the one hand, to low teaching and institutional efficiency, on the other. Having established this point, we shall now focus on the analysis of the following variables:

- Withdrawal rate: percentage of students who, in spite of not having graduated, have failed to register in the two previous years. We will analyse the data from the academic years: 2003-2004, 2004-2005 and 2005-2006.

  In coherence with the above definition, the subsequent variables will be calculated for the two previous academic years.

- On-time Graduation Rate: percentage of students in a cohort who earn their diploma in the targeted time established by the curriculum.

- Average Credits Earned: average amount of credits earned by each student in a given degree in an academic year.

- Delay: amount of years required by a student to complete a university degree, in addition to the officially established in the curriculum.

- Efficiency Rate: relationship between the amount of credits earned by students and the total amount of credits they have needed to enrol for in order to complete the degree.

- Expectation Rate: relationship between the amount of credits for which the student has taken exams and the amount of credits he/she enrolled for.

- Success Rate: percentage relationship between the total amount of credits earned by students and the total amount of credits for which they have taken exams.

- Difficult Subjects: percentage of subjects that a large amount of students fail. A subject is considered difficult if the amount of students repeating it (at least for a second time) is more than one third of the total of students who have enrolled for it (i.e. a lot of students have failed it and need to repeat the subject).

- Low Efficiency Subjects: percentage of subjects whose Efficiency Rate is lower than 50%.

- Low Expectation Subjects: percentage of subjects for whom student expectations of success are below 50%.

- Low Success Subjects: percentage of subjects whose Success Rate is below 80%.

The study was carried out with data from degrees of the University of Oviedo and the information obtained has been arranged under the following criteria:

a) The information about degrees from the University of Oviedo is filtered to include public centres and leave out second cycle degrees.

b) The data to be used come from degrees whose curricula have been completed by at least two cohorts of graduates.

d) The information under consideration concerns only compulsory subjects of each degree.

3. Results

We have analysed 57 of the degrees offered by the University of Oviedo, 5 of which belong to the field of Experimental Sciences, 9 to the Humanities, 4 to the Health Sciences, 18 are integrated in the area of Law and Social Studies and 21 are Technical or Engineering degrees. This study analyses 26 long-cycle degrees and 31 short-cycle degrees.

WITHDRAWAL RATES

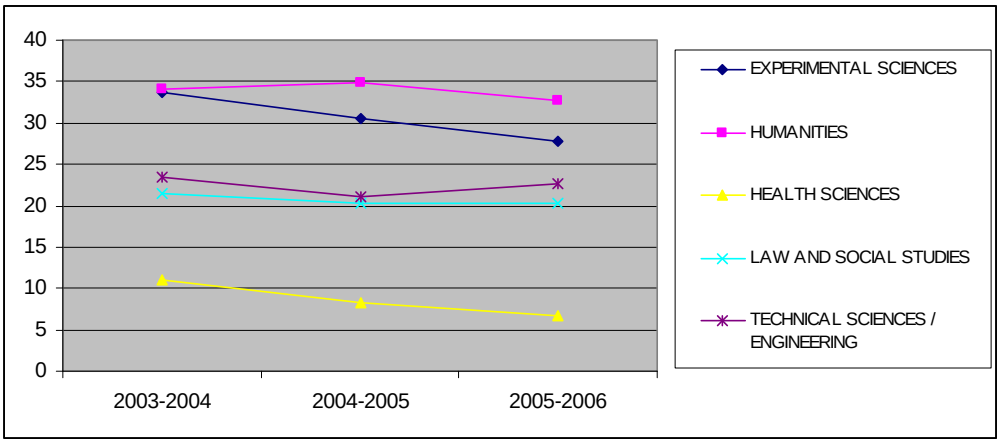
The withdrawal rates (percentage of students in a cohort who have not graduated nor enrolled for any subject in the last two academic years) were calculated.

The different degrees were then grouped by fields of study, so that the following values were obtained:

	2003-2004	2004-2005	2005-2006
EXPERIMENTAL SCIENCES	33,70	30,51	27,81
HUMANITIES	34,00	34,78	32,73
HEALTH SCIENCES	11,08	8,31	6,77
LAW AND SOCIAL STUDIES	21,43	20,37	20,33
TECHNICAL SCIENCES / ENGINEERING	23,40	21,06	22,74
TOTAL	24,95	23,24	23,51

Chart 1: Withdrawal rates 2003-2006.

Chart 1 shows that in each of the areas studied, withdrawal affects about one fourth of the students who had registered for the previous academic year. The highest withdrawal rates correspond to the degrees in Humanities (about 30%) and the lowest to the Health Sciences (between 6 and 12%).



Evolution of the rates

The evolution of the rates shows stability for the most of the fields of study, in spite of the slight decreasing trend in the fields of Health and Experimental Sciences, as well as in the Humanities.

3.2 VARIABLE RELATIONSHIPS

The variables whose relation to withdrawal we want established were calculated for the two previous academic years (in coherence with the definition of withdrawal) and they are as follows:

- On-time Graduation rate.
- Average credits earned.
- Delay.
- Expectation rate.
- Success rate.
- Efficiency rate.
- Percentage of low-efficiency subjects.
- Percentage of low-expectation subjects.
- Percentage of low-success subjects.
- Percentage of difficult subjects which generate clogging.

The correlation table with data from the year 2005-2006 shows that there is a significant correlation (p=0.01) between Withdrawal Rates and Expectation and Efficiency Rates. However, this does not imply that drop-outs are not a consequence of other variables as well (and maybe even more so); it implies that the correlation with the other variables is not lineal.

PEARSON'S CORRELATION	ON-TIME GRADUATION	DELAY	AVERAGE CREDITS	EXPECTATION.	SUCCESS	EFFICIENCY	% SUBJECT EFFIC<50	% SUBJECT SUCCESS <80	% SUBJECTS EXPEC<50	% DIFFICULT SUBJECTS	WITHDRAWAL RATE
On-time grad	1										
Delay	-0,43	1									
Average Credits	0,644(**)	-0,405	1								
Expectation.	0,507(*)	-0,194	0,658(**)	1							
Success	0,673(**)	-0,379	0,371	0,215	1						
Efficiency	0,776(**)	-0,388	0,780(**)	0,859(**)	0,623(**)	1					
Subjects Efficiency <50%	-0,361	0,486(*)	-0,412	-0,592(**)	-0,298	-0,710(**)	1				
Subjects Success <80%	-0,544(*)	0,448	-0,251	-0,238	-0,887(**)	-0,587(**)	0,467(*)	1			
Subjects Expect <50%	-0,086	0,195	-0,142	-0,707(**)	0,119	-0,428	0,496(*)	0,014	1		
% Difficult subjects	-0,173	0,064	-0,075	0,011	0,002	0,025	-0,035	-0,001	-0,125	1	
Withdrawal rate.	-0,539(*)	0,118	-0,515(*)	-0,648(**)	-0,077	-0,556(**)	0,286	-0,072	0,301	0,117	1

* : The correlation is significant from the (bilateral) value 0.05.
** : The correlation is significant from the (bilateral) value 0.01.

3.3. DEGREE GROUPING

Prior to the analysis of relationships between drop-outs and the dependent variables, we have carried out cluster analysis to group the degrees according to the values obtained for withdrawal rates (whether high or low) in the years from 2003 till 2006.

WITHDRAWAL RATES	NUMBER OF CASES	HIGH RATE DEGREES.	LOW RATE DEGREES.
2003-2004	54	17	37
2004-2005	56	23	33
2005-2006	56	15	41

Chart 2: Degree groupings according to withdrawal rates

Initially, the cluster analysis identified twelve degrees which remain in the high withdrawal rate group for the three relevant years, and thirty-three which maintain a low withdrawal rate.

These groupings also indicate that all the high-rate degrees have long cycles (four or more grades), and that most of them belong to the field of Humanities.

All the degrees in the Health Sciences field, as well as most of the technical ones rendered low withdrawal rates during the three relevant years. In addition, most of the low-rate degrees belong to this field of study and have a short cycle (3 grades).

Given that all the short-cycle degrees are included in the low-withdrawal-rate group, our analysis will now concentrate on the 21 long-cycle degrees; namely:

HIGH WITHDRAWAL RATE	LOW WITHDRAWAL RATE
Mining Engineering	Telecommunications Engineering
Industrial Engineering	Business administration
Classical Philology	Biology
French Philology	Law
English Philology	Economics
Philosophy	Medicine
Geography	Dentistry
Geology	Psychology
History	Chemistry
Art History	
Mathematics	
Pedagogy	

Chart 3: List of degrees by high/low withdrawal groups.

3.4 DIFFERENCES BETWEEN GROUPS

In order to find out the main circumstances associated to withdrawal, we have tried to identify amongst the variables under consideration the ones that mostly contribute to differentiate the two groups.

Since both groups contain few degrees, we decided that it would be more suitable to use non-parametric tests. Actually, since we are dealing with two separate samples, we have used the Mann-Whitney test to contrasts both samples and check whether they have the same distribution function, and we have applied the test to the data from the three relevant academic years.

- Academic year 2003-2004:

	U for the Mann-Whitney test	W for the Wilcoxon test	z	Asymptotic Significance (two-tailed)	Exact Significance [2* (one-tailed)
On-time graduation	25,000	103,000	-1,437	0,151	0,167
Average Credits	34,000	112,000	-1,080	0,280	0,305
Delay	20,500	48,500	-1,631	0,103	0,104
Efficiency	40,500	118,500	-0,579	0,563	0,571
Expectation	37,000	73,000	-0,849	0,396	0,427
Success	13,000	91,000	-2,700	0,007	0,005
% Low efficiency	44,000	80,000	-0,309	0,758	0,792
% Low success	22,000	100,000	-2,006	0,045	0,047
% low expectation	16,000	52,000	-2,473	0,013	0,012
Difficult subjects	26,000	104,000	-1,700	0,089	0,098

Chart 4: Group contrast. Academic year 2003-04

The analysis shows significant differences (p=0.01) in the variables related to student success expectations (Expectation Rate and Percentage of Low-expectation Subjects) and also in the Percentage of Low-success Subjects (p=0.05).

- Academic year 2004-2005:

	U for the Mann-Whitney test	W for the Wilcoxon test	z	Asymptotic Significance (two-tailed)	Exact significance [2* (one-tailed)
On-time graduation	29,000	107,000	-1,099	0,272	0,299
Average Credits	40,000	118,000	-0,995	0,320	0,345
Delay	33,500	61,500	0,719	0,472	0,482
Efficiency	38,000	116,000	-1,137	0,256	0,277
Expectation	42,000	87,000	-0,853	0,394	0,422
Success	22,000	100,000	-2,274	0,023	0,023
% Low efficiency	34,000	79,000	-1,421	0,155	0,169
% Low success	39,000	117,000	-1,066	0,286	0,310
% low expectation	42,000	87,000	-0,854	0,393	0,422
Difficult Subjects	30,000	75,000	-1,711	0,087	0,095

Chart 5: Group contrast. Academic year 2004-05

Expectation Rate is the only variable contributing to any difference (p=0.02) between the two groups, in this case.

- Academic year 2005-2006:

	U for the Mann-Whitney test	W for the Wilcoxon test	z	Asmptotic Significance (two-tailed)	Exact significance [2* (one-tailed)
On-time graduation	45,500	123,500	-0,604	0,546	0,554
Average	20,000	98,000	-2,160	0,031	0,031

Credits					
Delay	40,000	118,000	-0,169	0,866	0,902
Efficiency	38,000	116,000	-1,137	0,256	0,277
Expectation	39,000	84,000	-1,066	0,286	0,310
Success	18,000	96,000	-2,558	0,011	0,009
% Low efficiency	40,000	76,000	-0,617	0,537	0,571
% Low success	31,000	109,000	-1,635	0,102	0,111
% low expectation	21,000	57,000	-2,086	0,037	0,039
Difficult Subjects	47,000	125,000	-0,501	0,616	0,651

Chart 6: Group contrast. Academic year 2005-06

There are significant differences in the Expectation Rate (p=0.01), the Average Credits Earned by students, and the Percentage of Low-expectation Subjects (p=0.05).

Consequently, the analyses carried out show that success expectation is one of the most influential variables in determining whether the degrees belong to either the low-withdrawal or the high-withdrawal rate groups.

3. 5 BASIC COMPONENTS OF SUCCESS EXPECTATION

In order to round off the description of success expectation as a variable to measure university withdrawal, we now explore other variables, which are part of this expectation. For this purpose, we carried out lineal regressions in successive stages with some of the other variables included in the study (Efficiency, Success, Average Credits, On-time Graduation), for the three relevant academic years, incorporating values from teaching surveys carried out during the same academic year; this analysis was applied to all the 21 degrees under scrutiny.

- Academic year 2003-2004:

Pattern	Predicting variables	R^2	Typical estimation error.
1	Efficiency	0,611	4,850
2	Efficiency, Success	0,877	2,810

Chart 7: Main variables for the prediction of success expectation. Course-period 2003-04

The variables of Efficiency and Success Rates account for 87.7% of the Success Expectation during this academic year.

- Academic year 2004-2005:

Pattern	Predicting variables	R^2	Typical estimation error.
1	Average Credits	0,416	6,780
2	Average credits, efficiency.	0,551	6,117
3	Average credits, efficiency.	0,668	5,425

Chart 8: Main variables for the prediction of success expectation. Academic year 2004-05

In this case, the Average Amount of Credits Earned, and Efficiency and Success Rates account for 66.8 % of Success Expectation.

- Academic year 2005-2006:

Pattern/model	Predicting variables	R^2	Typical estimation error.
1	Efficiency	0,708	4,983
2	Efficiency, Success	0,779	4,443

Chart 9: Main variables for the prediction of success expectation. Academic year 2005-06

Again, 77.9% of the Success Expectation for the academic year 2005-2006 in the degrees under study is explained by the variables of Efficiency and Success.

4. Conclusions.

Bearing in mind the great variety of causes behind university withdrawal (personal, social, economic, psychological, etc.), the present study analyses the ones which are more closely linked to the teaching process and to its outcomes, with the aim of identifying the mediating variables that lecturers can act upon. Hence, we have looked for the influence exerted on withdrawal by indicators such as Average Credits Earned, Delayed Graduation, On-time Graduation Rate, Expectation, Success and Efficiency rates and the Percentages of Low-Efficiency, Low-Expectation and Low-Success Subjects, as well as the values for Difficult Subjects.

The importance of this kind of analyses comes from the fact that they provide evidence that graduation delay and university drop-outs involve a high cost in terms of quality, owing to the unbalance between the resources invested and the outcomes achieved.

Our conclusions, derived from our initial statements and from the analysis, are:

A student can be considered to have dropped out from university when, even though he/she has not graduated, neither has he/she enrolled for any subject of the degree during the year in which he/she was due to graduate, nor in the following year. As has become evident in the study, a student's decision to continue the degree or to drop out depends to a large extent on success expectations, so that when a student feels prepared to confront the examinations of the subjects he/she has enrolled for, he/she is more likely to pursue his studies (regardless of the actual grades obtained in the exams).

Similarly, if a given degree has many low-expectation subjects – in other words, when there are many students who do not sit the exams of those subjects – it will have a high withdrawal rate. In the University of Oviedo these circumstances are more frequent within long-cycle degrees (with four or more grades), particularly in the Humanities, as well as in the classical Engineering degrees (Mining and Industrial Engineering).

Success Expectation is a very important variable for the analysis of university withdrawal and its main components can be considered to be: academic success in the subjects, the amount of students passing the subjects and the efficiency rates, estimated according to the amount of times a student must enrol for the subject before he/she finally passes it, and also by the amount of credits students obtain each year. Since Success Expectation is related to withdrawal and simultaneously to the subjects' Success and Efficiency Rates and to the Amount of Credits Earned, we think that it is possible that withdrawal rates may be reduced if we manage to increase the values for those three variables.

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