Econometric and Statistical Response Model Applied to Socio economic Careers at UAEM CU Valle de Mexico.

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Resumen
La presente investigación tiene como objetivo analizar el rendimiento académico de los alumnos del noveno semestre de las carreras económico-sociales del Centro Universitario UAEM Valle de México. Se estima un modelo de respuesta cualitativa en el que la variable dependiente se refiere al rendimiento académico y las variables explicativas seleccionadas se clasifican entre académicas, económicas y socio-demográficas. Entre los principales resultados, las variables académicas fueron estadísticamente significativas. En este sentido, variables como materias recursadas (o reprobatorias), carga de materias, elección de carrera, expectativas profesionales y horas de estudio influyen en el rendimiento académico. Se concluye que estas variables pueden explicar un alto o bajo rendimiento académico. El mejoramiento de dicho rendimiento debe centrarse en la instrumentación de políticas educativas institucionales. En particular de la disminución de la incidencia en el recurse o reprobación, así como en la revisión de la carga de materias.

Palabras clave: Rendimiento académico, factores académicos, políticas educativas y mejoramiento de los programas educativos.

Abstract
The objective of this investigation is to analyze the academic performance AP of the ninth degree students of the socio economical careers in the Centro Universitario UAEM Valle de Mexico (CUUAEMVM). For that purpose we have estimated a qualitative response model having an independent variable that is a measure of the AP and dependent (explanatory) variables classified as academic, socio economic and socio demographic. From the analysis we found that the academic variables were statistically significant especially: the failed (retaken) courses, amount of courses taken, career election, professional expectations and hours to study after classroom. As a conclusion we may say that these variables explain a high or low academic performing. The improving of such performance must be centered on the application of educational (institutional) policies, particularly the decrease of retaken or failed courses, and the review of the bulk courses to take in a semester.

Key words: AP, academic factors, educational policies/educational programs improving

1. Introduction

The economic globalization impacts to all the countries in the world. The educational sector is widely participating in this global process. It is demanded a better educational quality to all countries and address more resources in investigation, scientific development and technological innovation. Mexico is playing an active role as a player in the economic world. It is required the academic training of young scientists, to develop original investigation to contribute tom the better economic performing of the country. To get that proposal is necessary identify the problems get along to the lower level of education.

This study was based on the CUUAEMVM university community, to analyze the academic performing of students coursing careers at the socio economic area. To get the information we designed a questionnaire includes a set of academic, economic and socio demographic variables that -we consider- may be affecting the student´s AP. The purpose was to detect weaknesses in the teaching-learning process and take some actions to improve the curricula. We applied the Investigation-Action (IA) methodology, to find the hints for a integer and permanent improving of the academic. The IA is featured by giving a vision centered on higher education, as well as the methods, the preparation of the new professionals and generally the community/society concerns. Essentially this study applies a qualitative response or linear probability econometric model to let us identify the statistically significant variables affecting the AP.

2. Relevance of the study

The future of higher education is on debate around the world. Among the themes under discussion, the transformation of the educational systems is underlined to face the challenges of the global world. According to ANUIES (2006), in Mexico those challenges are related to the quality of educational services to the students` preparation to integer humanist and cultural elements to their technical and scientific preparation. The university undergraduate students "egresados" would be better prepared to get into the development of our country, promoting a scientific-technological culture but having in mind the other values learned as: sustainable development, democracy, human rights and the combat to poverty. The efforts to improve the higher educational system must include a group of activities focused on the comprehensive attention to the students (ANUIES, 2000).

The economic globalization demands more resources to education by every country. Mexico is one of those that have been done so extensive economic reforms to reduce the educational lagging and becoming an open and commercially integrated economy in the

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world, so the challenge is higher. The formerly said means that the internal and external educational competitiveness must be more necessary, therefore it is imperative to know the problems related to higher education, our focus is on the identification of those problems specially in the case of socio economic university courses having as a universe the students in the CUUAEMVM.

This study is looking for those academic, economic and socio demographic factors having a strong effect on the AP of the universe of students analyzed. Doll y Lyon (1998) consider that it is important to know the school problems faced by students along their career, the improvement of an educational quality means a better student. In this sense is very important to define a measure of the AP of students along their career from the enrollment to the graduation.

2. 1. Justification

Generally calling the educational supply has not been relevant because most of the academic programs are not considering the particular needs of the students, i.e., the vulnerable students. The evidences to support the fair preparation of elemental (primary school) and high school are not enough to assure that, nevertheless it is possible to get a hint –under certain degree of accuracy- that most of the students enrolled in a higher education (university) program, have neither the basic abilities nor knowledge to put on their studies and get a good AP.

One point of discussion is the low level of graduate degree or low AP observed in some of the analyzed socio economic careers. Considering this we are willing to know the factors (internal and external), that produce that kind of performance, therefore we are looking for a continuous improvement to increase the efficiency on the student`s AP (knowledge and labor competence)

2. 2. Objective and hypothesis

This study is addressed to achieve the following objective:

2. 2. 1. Objective

Analyze the AP of students coursing ninth semester of socio economic careers (Actuarial science, Administration,
Accounting, Law, Economics, Administrative computer applications and International economic relations), to detect the weaknesses in the learning process as well as the improvement/reinforcement of the curriculum, to let the enhancement of the academic management at the CUUAEMVM

2. 2. 2. Hypothesis

To prove the following:

The AP of socio economic careers is explained by academic, socio economic and socio demographic variables. Otherwise it means how those variables make a variation on the AP of ninth semester students?

3. Theoretical approach

The human capital theory (Lucas. 1988), related to the relationship between education and productivity -therefore the economic growing-, give us some fundamental theoretical arguments to be a base for the present investigation. Our approach is based on the studies of Estrada y Lasa (1995). The human capital come up from the individual decisions related to available time, it is assumed that the accumulation of human capital generates positive external effects over the aggregated productivity of the economy. The assumptions are mentioned as follows:

a) The labor force is divided by categories depending on the individual degrees qualified in a scale from "0" to infinite. At this point it is important differentiate between available workforce and effective workforce;
b) Every individual in a category of labor force spends a fraction of active time to the productive activity and the time left to the accumulation of human capital out of the production environ;
c) The production conditions are shown by the known production function *Cobb-Douglas*;[1]
d) The average level of abilities (human capital) is supposed to grow in an exponential pattern.

The accumulation of knowledge is based on the fact because individuals spend part of their time in activities to increase abilities by either learning or training out of the labor journey, nevertheless this increase is not for free but the cost is based on the spent of time on those activities or the opportunity cost.

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[1] $Y = AK^{\alpha}L_e^{1-\alpha}$

Where,
Y = total product;
K= fixed capital assets;
Le = effective labor force.

4. Methodology

The Investigation-Action (I-A) method is applied to education because contributes to the development of integer and permanent improvement of the curriculum and services. Bartolomé (1992) considers that the objectives of I-A method (identify action strategies). The proposals of such method are related with our investigation because our objectives are involved in the identification of internal/external factors mentioned before that may explain the AP of the segment of students included in our study.

Hernández y Fernández (2014) presents the phases of the I-A method. The stages are:

a) Detect the investigation problem, clarify and diagnose;
b) Formulation of a plan to solve problem;
c) Implement plan/program and evaluate results;
d) Feedback.

Once the methodology was applied the next procedure is needed:

a) Design of simple test and questionnaire (with defined variables);
b) Conduct the survey (field work) and analyze information;
c) Generate continuous improvement alternatives to increase the efficiency levels of the AP of students

4. 1. The model

The I-A models consider the dependent variable (y), could be qualitative or quantitative while the explanatory variables could be either quantitative, qualitative or a mix of them. The quantitative dependent variable is set forth by a group of identified qualitative variables, which are codified by dichotomy options with values 0 or 1. The model is under the linear probability classification (Pindyck *et al*, 2001; Gujarati, 2004; Riascos, 2005). Because of the nature of that kind of models, the I-A model fits perfectly our investigation purposes.

The operational way of our hypothesis is shown by the regression equation below:

$$RA_{ij} = \beta_0 + \beta_i X_i + \mu_{it} \quad (1)$$

Where,
RA_{ij} = student´s AP i from 9th. semester of socio economic career j. Therefore the student could be a regular student (average marks from 6 to 10 and no failed courses) or irregular at least one course is failed (or courses retaken);
X_i = academic variable, economic or socio demographic i (i = 1, 2, 3, 4, 5, 6, 7, 8, 9 , 10, 11, 12 y 13). Otherwise, with 1 = academic support; 2 = burden of courses; 3 = age; 4 = career chosen; 5 = marital status; 6 = career expectations; 7 = study hours (after classroom); 8 = labor condition; 9 = retaken courses; 10 = study options; 11 = prestige; 12 = enrollment reason and 13 = location.
μ_{it} is the term of error.

4. 1. 1. Universe.

The total population of students to be analyzed is 343 which is the total number of people enrolled in 9th semester courses in the socio economic careers, as far as the study was started; therefore we are doing a census instead of a sampling research. Most of the students were concentrated in Law and Business administration programs, other group represented by International economic relations and Administrative computer applications, and a third group with less students integrated by the Economics and Actuarial science, from this last group Economics is also the career with the lowest level of graduated students (see Table 1)..

Table 1. List of students enrolled in ninth semester courses by career. (2014).

CU UAEM Valle de Mexico		
Socio economic programs	Students enroll	Percentage of total enroll (%)
Actuarial science	14	4.08
Administration	52	15.16
Accounting	52	15.16
Law	123	35.86
Economics	13	3.79

Administrative computer applications	47	13.70
International economic relations	42	12.24
Total students enrolled	343	100%

4. 1. 2. The variables

The dependent variable is quantitative and is shown as the average grades obtained by student as far as the previous semester coursed (eighth in this case), and is RA. The explanatory variables are qualitative. To obtain the needed qualitative information a questionnaire was applied to the respondents. The thirteen explanatory variables are described as follows:

Academic support. If the student obtained support and orientation to get a good AP. The values are: D = 1 (yes). D = 0 (other)

Burden of courses. If student considers that the courses taken by semester have been an excessive burden to get a good AP. The values are: D = 1 (Excessive burden) and D = 0 (other).

Age. The assumption is that the age at the enrollment at the CUUAEMVM (new student), may have an effect on his/her AP. We consider three intervals: : i) between 18 and 22 years old (base category); ii) between 23 and 25 years old; and iii) more than 25 years old.

Career election. We assumed that this variable may be important to determinate the AP. The values are: D = 1 (if the career currently studying was the first choice) and D = 0 (other).

Marital status. We assumed that this variable may interfere to the AP. The values are D = 1 (if the student is married) and D = 0 (other).

Career expectations. If currently studying career meets his/her professional expectations. the values are: D = 1 (yes) and D = 0 (other).

Study hours. The AP may vary according to the hours of study after class. We consider three intervals: i) between 0 and 1 hour (base category); ii) between 1 and 2 hours; iii) between 3 and 4 hours; and iv) more than 4 hours.

Labor. Arguing some opinions we found that the labor status may reduce the availability of time dedicated by student to study therefore could be an element to get a good AP. The answers are classified in the following intervals: I) have not been working yet (base category); ii) worked less than one year; iii) worked between 1 and 2 years; y iv) worked more than 2 years

Retaken courses. If student has failed or retaken courses at least once. The values are: D = 1 (yes) and D = 0 (other).

Study option. If the UAEM was his/her choice. The values are: D = 1 (yes) and D = 0 (other).

Prestige. If student is identified with the UAEM. The values are: D = 1 (yes) and D = 0 (other).

Enrollment reason. If he/she decided by him/herself enrollment to the UAEM. The values are: D = 1 (yes) and D = 0 (other).

Location. The transport from home or work site to the CUUAEMVM may be a reason to get a good or bad AP. The values are: D = 1 (if he/she lives/work close to CUUUAEMVM) y D = 0 (other).

5. Statistical Analysis

The general average grade is the most common indicator to measure the AP (Cándido *et al*., 2009), it reflects the student´s learning level (Cascón, 2000; Tonconi, 2010). According to Manzano (2007), the AP is understood as the result of the effort that the student have put on the learning process and is showing the acquired abilities or competences; this was the meaning that we have given to the AP in this study: we use the general average grade of every student to measure his/her AP, therefore we distinguish between regular (no fail nor retaken courses) or irregular (fail or retaken one course at least). The general average grade in the universe of students was 8.2 (from 1 to 10), some careers as Actuarial science, Accounting, Law, Economics and International economic relations shown an over average grade the others (Administration and Administrative computer applications were under.

5.1 Model of analysis. Description of the variables.

The 62% of respondents said yes to the Academic support received, the 38% said have not been received that. The students of Law evaluated with the highest (78 % yes), Accounting 40 % and Administration 37 %. Otherwise the students of Actuarial science (said have received less support/orientation), obtained one of the highest general average grades, this last finding is an indicator that the

academic support/orientation may be or not an element to get a good AP. In UAEM, the "Programa Institucional de Tutoría Académica (ProInsTA)" (tutorial program), is addressed to reinforce the student´s AP and overtake some learning difficulties.

We observed that the Burden of courses variable was no evaluated as excessive by the most of the respondents, which means that this element is not a problem for the students in general, nevertheless a minority considered that burden as a problem. Talking about the tutorial program, it is assumed as our own that the tutor is able to guide students through an specific area of knowledge where a student is having problems or get some support from an specialist, also the guidance is related well to procedures and rules, study programs, common learning problems, activities and available facilities in the CUUAEMVM, to support the tutorial function and encourage the good AP (PROINSTA, 2006: 453).

The third explanatory variable was the Age at the first enrollment of students to CUUAEMVM, the category 18 to 22 years old was represented by the 88% of the respondents, it was supposed that the lower age may negatively affect the AP. From those in the rank (301), 97 (28%) are from the Law program, 52 (15%) from Accounting, 47 (14%), from Administration 47 (14%), from Economic International Relations 41 (12%), from Administrative computer applications 40 (12%), from Actuarial science 12 and Economics 12 (3% each). Vargas (2001) considers that in some careers are significant differences among students due to the age. Galand *et al*. (2004) states that older students -in relation to the average age of one group in a course- affect their AP in a negative way. On the contrary Malmstrom (1984) did not find evidence of a predictive value.

Career election. Our assumption was that the decision of student to enroll in a career is commonly influenced by elements as the own values and expectations, also a material future benefit (employment and earnings) and other significant elements (Carpenter y Foster, 1977; Beyon; 1998). The statistical analysis shown that almost an 80% (272 students), said to have chosen the career by themselves, on the contrary a 21 % (71 students) said have been influenced. The next explanatory variable is the Marital status. Malmstrom (1984) found that been single or married as well as been father/mother was a significant predictable, but less important than others, this seems to be a non-significant variable because most of the students said that the marital status has not affected their performance. Just as an example, let us consider that the100% of students of Actuarial science, said not been affected by their marital status

In relation with the seventh explanatory variable (Career expectations), Pike y Simpson (1996) -by using a structural model- found that AP and satisfaction at high level studies are positively related. Therefore in this study 265 students (77 %) confirmed that the career that they are studying accomplishes their expectations of employment, professional development and achievements. On the contrary 78 students (23 %) said not been satisfied.

The hours of study (after class) is the eight explanatory variable. Rojo (1999) considers that the effort and time invested by the student influence his/her academic results. Theoretically, while more time is dedicated to study, a better AP is obtained, nevertheless is not clear if more time means 100% of it devoted to study, we may be under evaluating the result. In our study it was found that most of the respondents are investing from one to two hours a day to study after class. Other group –minority- said to study from three to four hours and the lowest number of respondents said to study more than four hours. We expected that the answer to "*una a dos horas de estudio*" and "*menos de una hora*" -both dichotomy variables- had some kind of incidence in the AP. As it was mentioned, "*una a dos horas de estudio*" (which most of the respondents said), was incident.

The "*ideal student*" profile is: dedicated to study, not working, because of economic needs or other reason, because is not desirable to loss time in other activities different to academic activities. If the problem is economic it could be solved by scholarships, however, they could not be benefited by the acquisition of abilities and experience obtained in the work field (De Garay, 2001; Guzmán, 200 4; Carr *et al.*, 1996; Béduwé y Giret, 2004; Planas y Fachelli, 2010). Regarding this topic we considered important to include in our study a "Labor" variable. Analyzing the results we found a decrease of the number of students working after one year and a considerable decrease in the "working after two years category". Studying while working needs a constant effort, the student must be more organized, methodical and disciplined. The retaken courses may influence directly on the good AP. We found that the most of the students were "irregular" (214) or 62 % have failed or retaken at least one course. The others (37%) were regular (not one course failed or retaken) and from these ones we expect a better performance.

Regarding the Study option explanatory variable, 187 respondents (54.5%) said that the career they are studying was their first option. The 45.5 % (165 students) said the opposite. The careers Administrative computer applications, Law. Accounting and Administration was the sudent´s first option. The others (International economic relations, Economics and remarkably Actuarial science), were in the opposite. Frenay *et al*. (2004), found that a cause of that decision was the *"taking decision before"* which means analyze the academic program and other elements prior to enroll. A 40% of students said that they decided some days before enrollment and a 64.3% said that they would like to study another career. The Prestige means identity with UAEM, 295 (86% of 343) students said to be identified with UAEM.

The Enrollment reason explanatory variable reflected that the decision was made by 317 students (92% of 343l), they had not been influenced to decide. According to that it was expected a better AP. Finally the Location explanatory variable indicates that the transport from house/work site to CUUAEMVM has an indirect relationship with the performance. Nevertheless we found that 226 students (66 %) said not been affected by that element (transport). As a comment let say that in the questionnaire we did not

mentioned distance in neither kilometers nor elapse of time. The interpretation of the mentioned is that the distance and time spend in transport to CUUAEMVM may be a problem reflected in stress and tiredness affecting the performance.

6. Model results.

Some of the explanatory variables analyzed were divided by the answer options (i.e. study hours) reason why the total variables analyzed were seventeen instead of thirteen, from them six were statistically significant, the coefficient (R^2) is low (0.19), although this do not affect the application and fitting of the model. This means that the AP is explainable at a 20% by the significant explanatory variables. The Durbin-Watson (DW) test delivered a 1.8. indicator. A new analysis using a better model may give us more information to explain the AP. Ravelo (2013) as an example analyzes the relation among the AP and the demographic and socio-affective elements. His findings shown that the performance of students is explained by gender and socio economic stratus but not as a whole. Vargas (2014) considers that the AP is a highly complex and multiple cause element, emphasizing the institutional, educational and psychosocial factors associated to the AP. De Garay (2014) is focused on the knowledge of students by searching who they were and what they did while studying a superior education level, in both inside and outside the university site, his study establishes conditions to design and implant institutional policies to reduce the high desertion rates and increase the rate of graduate students and especially to bring up more professional people to have a productive work life

The results of the model are shown as follows:

Table 2. Dependent variable: AP. (General Average Grade).

Variable	Coefficient	Std. error	t-estadístico	Significant level
Explanatory variables				
C	8.35	0.18	47.14	0.0000
AA	-0.004	0.061	-0.06	0.9530
CM	-0.14	0.08	-1.77	0.0778
ED2	-0.02	0.09	-0.23	0.8215
ED3	0.20	0.20	1.01	0.3122
EC	0.13	0.08	1.68	0.0942
EDOC	0.11	0.09	1.26	0.2083
EXC	-0.13	0.08	-1.70	0.0906
HE2	0.19	0.08	2.44	0.0152
HE3	0.18	0.09	1.97	0.0494
HE4	0.15	0.14	1.08	0.2820
LAB2	-0.05	0.11	-0.46	0.6462
LAB3	-0.005	0.12	-0.04	0.9692
LAB4	-0.14	0.12	-1.14	0.2569
MR	-0.40	0.06	-6.65	0.0000
OE	-0.04	0.06	-0.66	0.5099
PRE	-0.06	0.09	-0.60	0.5475
RAIN	0.06	0.11	0.53	0.5965
UBI	-0.03	0.67	-0.51	0.6133
# of observations 343				

$R^2 = 0.19$
D. W. = 1.80

Note: The base categories are: Age, ED1 (between 18 and 22 years old); Study hours, HE1 (between 0 and 1 hour); and Labor, LAB1 (all students that even don not have a job).

6. 1. Academic variables

The academic variables are those related with the student and his learning and the university study environment, they are: Academic . support (AA), Burden of courses (CM), Career election (EC), Career expectations (EXC), Hours of study (HE), Retaken courses (MR), Study option (OE), Prestige (PRE) and Enrollment reason (RAIN).

The burden of courses was statistically significant with an acceptable level of negative coefficient of 14%. As it was supposed to find, the results shown a slight negative relation between the burden of courses and the AP, otherwise, more courses as a study burden increase the probability of variations on the AP, a higher coefficient the probability to affect the AP may be also higher, and then should be desirable adjust the burden of courses taken by a student in one scholar cycle. The observed in the reported figures does not indicate the need to adjustment but influence on the AP, which is the fact to demonstrate.

The career election was also statistically significant with a positive coefficient of 13%., -however we anticipated a negative-. The 13% indicates a slight positive relation between the AP and the career election, the probability of a favorable AP studying the chosen career is of 13%, otherwise the career election do not influence in a high magnitude the AP.

The career expectation is statistically significant at a negative coefficient of 13% the meaning of this is that the AP is affected by the career expectation but in a low level, in other words: the professional expectations of the student regarding his career influence slightly the AP

The hours to study (after class) was classified into four categories, being the HE2 (between one to two hours a day) and HE3 (two hours a day) statistically significant with a positive determination index. It was assumed by us that these variables were relevant to the AP, the results shown that the interval HE2 was statistically significant and "two hours a day" was resulted in a high significant level shown in the Table 2. The positive coefficients combined (HE2 = 19% plus HE3 = 18%) indicates a direct relation among AP and these categories, therefore the probability of a better AP studying two hours a day is 37%, to confirm this consider that the category HE2 "between two and three hours a day" was statistically significant at a level of ninety nine percent and the HE3 was 95%. The relevant to comment is that the incidence of study hours after class may produce a higher AP, as it was supposed at the beginning of this study. We also can see that the interval H4 (more than three hours) was not statistically significant therefore does not affect the AP, a reason of that could that only a 5.5% of the respondents said to study more than three hours a day after class..

The variable Retaken courses was also statistically significant at a ninety nine level. The negative coefficient is -40% which means that the effect of retaken courses should be negatively affecting the AP at the probability of 40%. Our assumption was in the same direction, the results confirm our initial concern, based on that we consider necessary in a further investigation evaluate the factors around the reasons of retaken courses, the possible causes and the possible solutions, among those is the high index of failing courses, and the burden of courses in a scholar cycle. As a hint we found that a combined probability of retaken courses and an excessive burden 54%, that is really high.

The Study option is a non-significant variable therefore does not influence student´s AP, the same is applicable to Prestige, because the identity student-university is not important, also the same assumption is valid to Enrollment reason variable, otherwise is not important to our study if the student has decided or not enroll by his/her own decision. Finally the variable Academic support -against our assumption- was not relevant, from where we assume that this variable must be addressed with the influence of others in a new study.

6. 2. Socio-demographics variables

There are three socio-demographic variables analyzed in this study: Age (ED), Marital status (EDOC) and Location (UBI). It was assumed that all were important to the AP.

The age was divided by two categories. ED2 (students between 23 and 25 years old), and ED3 (25 years old or more), both were not statistically significant according to the regression analysis and consequently are not influencing the AP. We wanted to prove the influence of both looking for a positive relation between age an AP, assuming that an older student could have different AP, finally we found that the age was irrelevant to the AP

Regarding the Marital status the evidence shown a non-statistical significance, then this variable is irrelevant, our assumption was that a married student may be more affected in his/her AP than a single because the limitations of the time of the married to dedicate to study in the classroom and after. The importance of the results is that the marital status does not influence the AP as it was assumed.

The Location was not significant. The assumption was that the transport and the time along house/office to the CUUAEMVM would affect the AP of students. The regression analysis showed that the location is not relevant to support our assumption.

6. 3. Economic variables

One of these variables to be analyzed is Labor which was classified in four categories: the base category plus LAB2, LAB3 and LAB4. None of the mentioned was statistically significant as a result of the regression analysis. Our assumption was that this factor may have a significant negative relation and impact on the student´s AP because the student will be sharing his/her time between the work and study hours and therefore will not be totally devoted to study, in the event of the situation "the student worked less than a year" tested in the study, we did not find relevance, the same results delivered in the other cases ("the student worked between one and two years" and "more than two years") from where we assume that Labor activities of the student does not influence his/her AP

7. Conclusions

From the econometric analysis we found that six from nine academic variables were statistically significant. The Retaken courses, the Burden of courses, the Career election, Career expectations and the Study hours influence the student´s AP. Regarding the Retaken courses and the Burden of courses, there is a high combined probability of 54% to affect negatively the student´s AP. A positive effect on the student´s AP is observed in the combined probability of the study after class hours in the intervals: one to two hours and two to three hours, which is 37%.

The economic and socio demographic variables did not produce statistically significant indicators, therefore those variables are important but not at the extent of our investigation. The relevance of our findings is that according to the kind of model we have worked on (I-A), only the academic variables let us explain the AP and other set of variables as age, labor an marital status -against our initial assumptions- were not statistically relevant to demonstrate the effect of them in the AP. Also other variables as academic support, study option, prestige, enrollment reason an location, were not relevant to our study.

We can underline that the problematic of the AP in the students of CUUAEMVM is more influenced by internal (academic) variables than external or out of the scope of this academic site, basically we consider that the focus of the CUUAEMVM related to the academic performance improvement of the students would be centered in the academic variables, defining the academic-educational policies, basically focused on retaken and burden courses to decrease the reprobation indicators.

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