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School Achievement and Backwardness Analysis Model at the Metropolitan Autonomous University—Cuajimalpa Unit

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Abstract

This work stems from the need to develop a line of institutional policy recommendations to improve school performance and to reduce the backlog in the graduation of students in the Cuajimalpa Unit of the Metropolitan Autonomous University.

The school backlog of students of this university is one of the main institutional concerns, due to the existence of "bottlenecks" in the different careers educational process, preventing the completion of studies at the time established by the educational programs.

At the same time, the improvement in the students' academic achievement, represented by the increase of the school averages, is an approximation of knowledge assimilation as a substantive part of the University's activity. Thus, the study analyzes the determinants on which the University can exercise institutional policies to improve student's achievement rates and lower rates of backwardness in this university student's graduation.

Keywords: educational process, social mobility, school backlog, grade point average

1. Introduction

The educational process is essential for society's economic and cultural development; therefore, there are great efforts of all the economies of the world to improve and make more efficient the investment in this institution of society (Ruiz Durán, 1997). The educational process can be understood from different perspectives of study from psychological, educational and social processes to economic decisions. However, despite the existence of multiple studies at different scales, there isn't a consensus view to understand the phenomenon of teaching-learning process.

The final product of educational process and its measurement is one of the main difficulties; what is really expected of a long educational process that can culminate in an individual's different training stages. Bowles (1970) identifies two expected outcomes from the educational process: selection and socialization.

- The selection of individuals, according to their skills and efforts, focuses on relating the acquired skills and the results expressed in standard assessments, that distinguish these acquired skills and point them out in the workplace;
- Socialization understood as the process by which young people are prepared to take adult roles, according to the society they belong to.

Education is a crucial element in the processes of social mobility; since the position of a person in the system of social stratification, is becoming increasingly less dependent on its social origin and increasingly of his career.

As mentioned by Luhmann (2002), this is largely a result of the selection process of educational development. That is to say, that the future labor trajectory depends on the decision of the university education, where the educational system acts as a network of formalized social selection; Luhmann characterizes it as (Note 1):

a) The selection is disconnected from social stratification; the success of a test do not depends on social origin, although children from wealthy families are more likely to succeed in the tests.

b) The selection results make a systemic memory that allows forgetting the individuals' other limitations.

c) The system's ability to forget allows a bad student to be transformed into a good one; since only school grades are recorded, forgetting the rest. Changing these bad grades is accepted in the course of schooling.

d) The results of the selection process serve as early indicators of success or failure of education in the future working life of the individuals.

e) The educational system is a process full of uncertainties; because at any stage of the process, a good student can become a bad one and vice versa. The selection process does not guarantee with certainty individual results.

f) While education operates under the concept of what is good and right, in the selection process it becomes visible the decision which may be better or worse justified, but is always present as a choice between several possibilities.

g) The results of the selection can always be criticized. However, given that there is no certainty on the reasons to justify them, transparency of the results rests on the subjectivity of the decision-making process, which is of a personal nature.

The decisions of the selection process allow the student to understand college education as the first part of his career (Rodriguez & Torres, 2008). This means that if a student assures a favorable position in the career selection process, he can have a favorable position for his later career.

This in turn should consider the socialization process as part of the educational schema; since the selection modes of the educational system are different from the economic ones. Besides, professional work is developed within this economic system; and it is here where the socialization process is part of two processes, the recruitment and protection of employment. This implies that unemployment can be present in spite of the educational system selection process.

As a conceptual framework for the educative process' analysis, the economic literature uses the production function approach from "Coleman et al." report (1966), whose objective was to analyze the availability of resources at the school, linked to different population groups. In this work, named "Coleman Report", it was found that the availability of resources generated uncertain outcomes on educational performance and that the socio-economic environment controlled the results (Di Gresia, 2007, p. 3).

The production function of the educational process goes beyond the school facilities and teacher's skills (Fuller & Clarke, 1994), and must include other factors within the process understanding. In this case, households try to maximize results of the educational process by choosing the school or university that meets, among other characteristics, the requirements of infrastructure; access facilities (closeness); socio-economic, educational and cultural characteristics of the user group; the parental involvement in the educational process; the economic costs; and the probability of generating income due to this decision (Harbison & Hanushek, 1992; Hanushek, 1995).

As Luhmann (2002) mentions it seeks to maximize educational outcomes expressed in the selection and socialization process, according to choose the right career to start students' working life. This can be expressed as the process that maximizes the individual's future utility. This depends on:

MAX Utility (L, C) (1)

Subject to:

- The "education production" function, L = *f* (Education system quality, time spent studying, parent's education, etc.) (2).
- The "household consumption" function, C = *f* (consumption of other goods, time spent on consumption, parent's education, other) (3).
- The household budget constraints—(education system expenditures, including time spent on the giving attention to the system) + (expenditure on the consumption of other goods and time to consume the goods) = expected potential income.

According to the prior selection process, carried out by the student, families decide which will be the educational system and the career chosen by him/her. That is, they make decisions according to the results of the previous educational process, the perceived quality of the chosen college (reputation), parental educational level, household consumption levels, the available time for the educational process, and the household income level (Becker, 1960; Dewey, Husted, & Kenny, 2000; Glick & Sahn, 2000; Ibrahim & Jamil, 2012).

Thus, the education production function will depend on the level of household income, expenditure of resources and time on the educational system, the parents' educational level and quality of the chosen education system (Dewey, Husted, & Kenny, 2000). As mentioned at the beginning of the discussion, one of the process difficulties is the product to be evaluated as a result of this issue.

Generally, the selection and socialization processes only could be assessed at the end of the person's working career. So, it is necessary to generate an approximate measurement system that allows a glimpse of this professional trajectory. In this sense, on one hand the averages of student assessment in college life are taken as an approximation of the selection system.

On the other hand, the lag in the output of the university is taken as an indicator of social requirements; this includes characteristic such as stress management, punctuality and commitment. All of them required at the workplace (Bowles, 1970). The economic literature indicates that the use of resources in education has had an impact and cost to estimate production functions, regarding these two ways of measuring educational outcomes. However, it remains being a process widely studied but not yet completely understood (Hanushek, 2007).

For this reason, the presented starting point of analysis, proposed by Burkhead and Hennigan (1978), is based on the definition of production services function focused on persons. This proposal decomposes this service in two large groups of vectors: inputs and consequences. Thus, the analysis of this function will allow us to have a reference to understand the measurements that have been made with regards to education.

Thus, it expresses the content of education as a service differentiated from other types of service. It differs, above all, in the production of goods, according to the theoretical proposal developed by Hill (1977), which defines education as "*a change in the physical or mental condition of the consumer; which is direct consequence of the producer activity*, *such as a change in consumer's demand*" (Hill, 1977, p. 321).

This definition highlights the complexity that implies measuring learning, involving many subjects: the student, the professionals giving knowledge, relatives who influence knowledge and the society as a whole with its customs and traditions affecting learning outside the educational system. Hanushek (1989), on the other hand, focuses on the educational system relationship between inputs and processes of the educational system and the results they produce.

The importance is that by identifying this relationship, one can predict what will happen if resources increase or decrease and study which decisions should be taken if prices of educational resources suffer a change. In this sense, efficiency does not imply a cost reduction, but get better results with a better resources distribution (López, Navarro, & Ordoñez, 2009). Hanushek concludes that "there is no strong or consistent relationship between school expenditures and student performance" (Hanushek, 1989, p. 47).

Meanwhile, Hedges, Lane and Greenwald (1994) conducted a review of Hanushek's work in order to demonstrate the existence of limitations on the analytical method used as well as on the nature of the studies developed by this author (seniority, cross-sectional studies, etc.). They said that, depending on the different variables analyzed by Hanushek, the proposed stated conclusions do not have sufficient empirical evidence to say that there is no statistically significant evidence on students' performance.

Thus, it is necessary to bear in mind methods of more powerful analyses, which will include positive and negative effects of resource variables in understanding the productive role of educational services (Hedges, Laine, & Greenwald, 1994, p. 80; Mizala & Romaguera, 2001).

The authors commented that the multiplicity of variables that come into play in the educational field sometimes causes no consensus on what variables are of context, input, process or outcome to conduct them into a relationship. This fact has resulted in the need to further develop the subject from different perspectives, contexts and positions, enriching the topic and giving greater elements to address the production function in the educational service (See Table 6 in Appendix I).

Also, Mizala and Romaguera (1998), examine the factors that affect school performance in Bolivia; for this purpose, they use the results obtained in the first measurement tests of educational quality applied in this country. The estimations show that the socioeconomic variables are more important than to analyze the school performance; however, it was also found that the variables associated to the school and the teachers (experience, request of daily tasks to students, school size), are relevant to understand the school performance.

Caso-Niebla and Hernández-Guzmán (2007), regarding educational research in Mexico, studied educational performance in Mexico City, among other variables, starting from individual variables and study skills, which influence average scores. They also identify groups of variables explaining, at least in part, the values associated

with school performance: a first group that gather affective-motivational variables; a second group considers strategies for activities related to the study; and the third group which is represented by risk behaviors, especially by the consumption of health harmful substances.

Hernández and González (2011) and Backhoff et al. (2006), studied the differentiated effects that the economic, social and cultural factors have on academic achievement and proposed a model of causal relationship between the constructs or latent variables: social, cultural and economic status, economic level and cultural capital with school performance. These authors selected 19 observed variables from the EXCALE attached context questionnaire, concluding that these factors are evident in positive associations with learning. Another element to be highlighted refers that a cultural factor has a greater weight than the economic one.

On the other hand, the results of the 2006 PISA Report (Program for International Student Assessment), shows that the poor performance is not an automatic consequence of an unfavorable socio-economic environment. (Rojas-Ruiz et al., 2011). Also, Muñoz and Guzman (2010) reinforce the researchers' positions pointing out that the socio-economic characteristics, the physical conditions of the campus, the didactic resources; the teachers are the key explanatory variables to understand school performance.

Finally Reyes-Carreto et al. (2014) carried out an interesting research about the state of Guerrero and the school career of students in bachelor's degree. This study proposed an interesting method of multiple regressions, to explain academic performance related to the personal, economic and cultural variables and services available at home. It concluded that educational performance is mainly characterized by the student's personal factors and school process conditions.

As can be seen in the literature review, the central theme of analysis is the primary or secondary education, leaving aside the higher education, which makes more interesting the contributions derived from this work. Also, what will be addressed in the following study aimed to understand with greater analysis elements the relevant factors of the students' educative production function at the university in Mexico, having the Metropolitan Autonomous University—Cuajimalpa Unit, as a case of study.

2. Method and Empirical Development

This work stems from the need to develop a line of institutional policy recommendations to improve school performance and to reduce the backlog in the graduation of students in the Cuajimalpa Unit of the Metropolitan Autonomous University.

The school backlog of students of this university is one of the main institutional concerns, due to the existence of "bottlenecks" in the different careers educational process, preventing the completion of studies at the time established by the educational programs. At the same time, the improvement in the students' academic achievement, represented by the increase of the school averages, as mentioned in the literature review, is an approximation of knowledge assimilation and has an impact in the working career of the students'.

Thus, the study analyzes the key variables on which college can exercise institutional policies to improve student achievement rates and lower the backwardness rates in the graduation of this university's students. To achieve this goal, data about registration and students' performance collected by school services, have been used and complemented by the survey carried out on January 2015, by the Communication Sciences Career, using quantitative methods.

The conducted survey was divided into three sections: social environment, lifestyle and school data. The collected data were complemented with a database provided by the Autonomous Metropolitan University Cuajimalpa UAM-C., which presented useful information for the development of the research work.

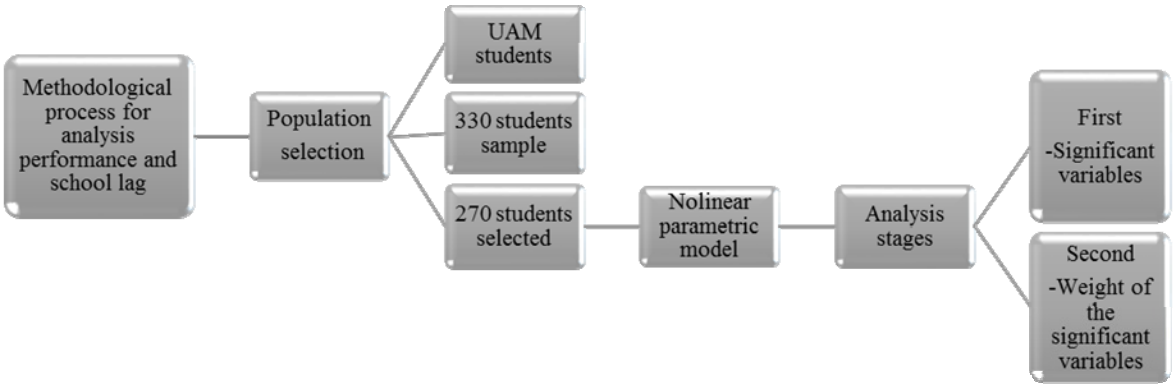

Figure 1. Methodological process for analysis performance and school lag

The type and universe of study used a non-experimental design of explanatory type (Figure 1). The study sample had a total of 330 active students in the educational system UAM-C, for educational cycle 2014. Which met with the characteristics of presenting the college entrance examination, be currently enrolled in at least to one subject of their career study plan and not have been out of school for more than a year. The total number of variables considered in the study was 55.

The survey included 330 active students, based on the characteristics of the questions and the collation of the database provided by the University, 217 students' surveys were selected. Students surveyed are distributed in the following way: 24% students of the Division of Social Sciences and Humanities; 45% of the Division of Communication and Design and 31% of the Division of Social Sciences and Engineering.

A plain and practical acceptance of academic performance, built from accumulated average grades of courses taken in the student's life at the UAM-C or Grade Point Average (GPA), was adopted. Besides, the educational backwardness was built from the number courses lost or abandoned by the student. Given the characteristics of the current modular system in the University, the loss or abandonment of a course, lags behind the student from a quarter up to a year, depending on the course not approved within the existing curriculum. For this reason, consecutive losses can lead to graduation times exceeding 8 years for undergraduate studies.

The procedure developed to explain the relationship between school performance and backlog, including the student's characteristics, is based on the study of the data distribution. This resulted in the development of a nonlinear parametric model in the specification of the statistical model. Then, it was estimated an index of dissimilarity and variance of the data from the calculation of two types of decomposition, through a system of widespread regressions and indexes of inequality for binary and continuous variables.

The first part of the construction of a multi-varied model provides information with regard to the significant factors that determined, on the one hand, the academic performance and, on the other hand, the lag. The second stage of analysis allows us to understand the levels of difference and weights that have each one of the variables used in the explanation of the phenomenon to be analyzed. In this case, it would be the backwardness in the graduation of students and school performance.

The variables involved for the development of the explanatory model on school performance, departed from the analysis of a significant set of variables that reveal the characteristics of individual and the context where that person develops. In this regard, from a theoretical point of view and on the basis of the previous studies of Hill (1977), Coleman et al. (1966) and Hanushek (2002), emphasis is placed on understanding the characteristics of the student and the context.

Table 1. Different methods to estimate ex-ante inequality of opportunity

	Ferreira y Gignoux (2011)	Ferreira y Gignoux (2011)	Paes de Barros et al. (2007)	Wendelspiess, Chavez, Juarez and Soloaga (2013)
Variable Type	Continuous, with inherent scale	Continuous, with arbitrary mean and dispersion	Dichotomous and ordered	Dichotomous and ordered
Example	Income	PISA score	Access to schooling	Access to schooling
Method to estimate E[y|C]	OLS	OLS	Probit or logit	Probit
Inequality measure I(y)	Mean log deviation: $\frac{1}{N}\sum_{n=1}^{N} ln(\mu/y_i)$	Variance: $\frac{1}{N}\sum_{n=1}^{N}(y_i-\bar{y})^2$	Dissimilarity index: $\frac{1}{N_0}\sum_{n=1}^{N}\lvert y_i-\bar{y}\rvert$	Modified dissimilarity index: $\frac{2}{N}\sum_{n=1}^{N}\lvert y_i-\bar{y}\rvert$
Absolute measure θ_a	Yes	No	Yes	Yes
Relative measure θ_r	Yes	Yes	No	No
Translation invariant	No	Yes	No	Yes
Scale invariant	Yes	Yes	Yes	No
Abbreviation used IOP	fgia/ fgir	fg2r	pdb	ws

Note. based on Wendelspiess, Chavez, Juarez and Soloaga (2013).

Among others, the key variables are: the parents' education, economic situation, the need to work and study at the same time, age, the time spent to go to school, marital status and the type of chosen career in college.

Table 1 shows different estimation approaches according to the type of variables to be considered. In the same way it displays the type of inequality measurement. For our case study, two proposals will be used: the first one for continuous variables with arbitrary average and dispersion, as it is the case of the academic performance. The second, meant to be for ordered and dichotomous variables, as is the case of to be or not to be a student with a lag in the time of graduation from college.

In the case of performance tests, there are inequality desirable variables, as hours of study and previous efforts carried out by students in other school stages, which are expected to generate a differentiation between those who made efforts and those who do not. Meanwhile, other variables such as household income are expected to not be the source of differentiation of performance test. In relation to the lags in the time of graduation, it is expected that the source of differentiation would be personal attitudes and lack of habits and not the individuals' social characteristics.

In order to develop these differences, we use Shapley decomposition. First, it is estimated the extent of the sources of inequality of all possible permutations of the variables included in the process of explanation. In a second step, is calculated the average of the marginal effect of each one of these variables.

Although it is an intensive process in calculation, there are substantial advantages in comparison to other methodologies. In the first place the decomposition is independent; secondly, the different aggregated components provide a total value that can be exposed and give an explanation relating in function to the components discussed.

As a note of caution, Ferreira and Gignoux (2013) argue that such decomposition should not be seen as causal, giving only an idea of the relative importance of variables to the observed phenomenon (Soloaga & Wendelspiess Chávez Juárez, 2013).

3. Results

According to the proposed methodology, the first stage analysis develops a multivariate model that provides information about the significant factors that influence statistically, in academic performance on the one hand and on the other hand, in the backlog.

As shown in Table 2, the factors influencing average grades in college (GPA) and in educational backwardness are different. While high school average grades, the student's travel time from home to college, marital status, college choice and entry age significantly influence average grades at college; time spent on leisure activities (social life, electronic games, parties, etc.), labor, the selected career and marital status, significantly influence the student's college studies completion.

Table 2. Estimation using the Generalized Linear Method (GLM)

VARIABLES	GPA college	Student lags of college
Student lags	-0.422***	
	(0.162)	
GPA from high school	0.333***	-0.0941
	(0.120)	(0.0715)
Selected career	-0.0175	0.0496**
	(0.0343)	(0.0202)
Job	-0.0992	0.202**
	(0.145)	(0.0832)
Recreational activities	-0.0317	0.0912***
	(0.0402)	(0.0219)
Age College Entrance	-0.636*	0.0989
	(0.325)	(0.164)
Age College Entrance squared	0.0134*	-0.00176
	(0.00737)	(0.00353)
Time travel to the University address	-0.232***	0.0314
	(0.0624)	(0.0412)
Time travel to the University address	-0.107	-0.0233
	(0.0676)	(0.0399)
Number of transfers	0.0613	0.000135
	(0.0839)	(0.0425)
Delegation of origin	-0.106	0.00453
	(0.171)	(0.131)
Number of entrance exams to enter university	0.0916**	0.00244
	(0.0439)	(0.0219)
Marital status	-0.246***	-0.0909**
	(0.0787)	(0.0381)
Household income	0.116	-0.0516
	(0.0817)	(0.0456)
Father's education	0.0630	0.0186
	(0.0469)	(0.0213)
Maternal education	-0.0511	-0.0106

	(0.0515)	(0.0268)
Minutes late on arrival at the first class	0.0297	0.0774*
	(0.0868)	(0.0404)
Home to go to college	-0.00757	-0.00864
	(0.0122)	(0.00721)
Type of high school	0.00483	-0.00339
	(0.0110)	(0.00728)
GPA from high school		-0.168***
		(0.0615)
Constant	14.05***	0.975
	(4.163)	(2.341)
Observations	87 - 217	87 – 217
Standard error in parenthesis: *** p < 0.01, ** p < 0.05, * p < 0.1		

Starting from the study of factors statistically significant and of the expected sign, obtained by the estimation of the Table 2, is proceeded to analyze the variance determinants, applying the methodologies of Shapley analysis, seen in the Table 1 and observed in Tables 3 and 4. The analysis of variance confirms the results obtained by the previous estimate, additionally providing the percentage of explanation of the model to the analyzed phenomenon.

Table 3. Determinants of the variance of the GPA in college (Method Shapley)

Variables	Percentage of explanation	Expected sign (Level of significance)
Father's education	6.58%	Not significant
Ages College Entrance	8.83%	Inverse function U (*)
Time travel to the University address	25.22%	- (***)
Household income	5.03%	+ (Not significant)
Marital status	11.76%	+ (***)
Recreational activities	6.64%	- (Not significant)
GPA from high school	30.79%	+ (***)
Job	2.50%	- (Not significant)
Selected career	2.65%	- (Not significant)
TOTAL	100.00%	
Inequality Index GPA		
Ferreira-Gignoux (whitout scale)	0.508453	
Bootstrap standar error.	0.074543	

Table 3 lists in order of relevance, the most influential factors in the student's average grades at the University: previous average high school grades with 30.79%, the student's travel time from home to college with 25.22% which influence negatively in the expected results; the student's marital status with 11.76%, and the age for admission to the university 8.83%, the latter with a non-linear behavior. The analyzed index explains 50% of the phenomenon with a standard error of 7.45%. Figure 2:

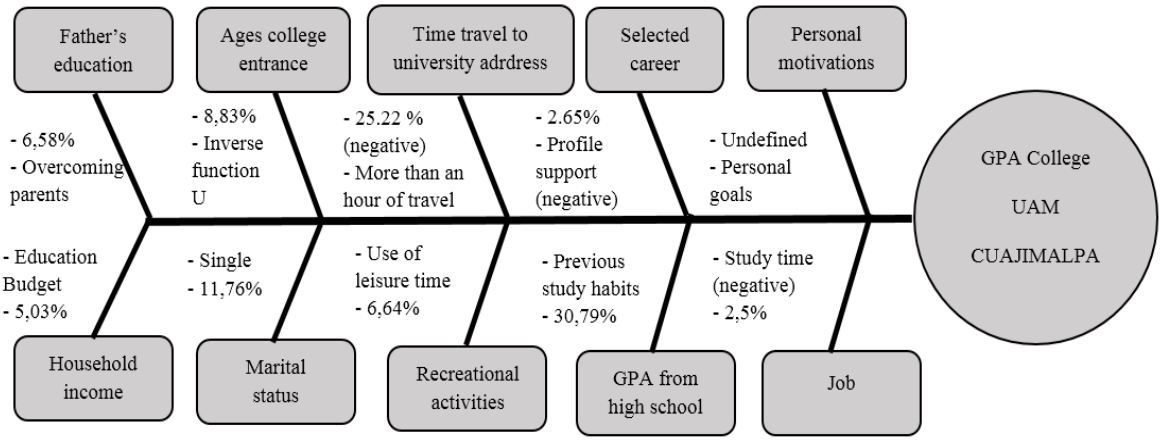

Figure 2. Factors influencing GPA of college students UAM Cuajimalpa (Note 2)

Note that neither the educational conditions of parents nor their income level affected the behavior of the variables analyzed. As mentioned in the previous section, it is expected that there may be differences between the students; but it is also expected that these differences come from their attitudes towards the college activities such as school attendance and their personal motivation to study, and not of their social and economic characteristics.

Table 4. Determinants of dissimilitude in student lag in the UAM—Cuajimalpa (Method Shapley)

Variables	Percentage of explanation	Expected sign (Level of significance)
Father's education	3.23%	Not significant
Age College Entrance	9.84%	Inverse function U (Not significant)
Time travel to the University address	7.73%	Not significant
Household income	7.72%	- (Not significant)
Marital status	2.63%	- (***)
Recreational activities	19.54%	+ (***)
GPA from high school	18.22%	- (Not significant)
Job	15.16%	+ (**)
Selected career	15.92%	+ (**)
TOTAL	**100.00%**	
Index of inequality in student lags		
ws (inequality index adapted)	0.602577	
Bootstrap std. err.	0.066293	

With regard to the analysis of variance on the dissimilarity in the student's lag, as can be seen in Table 4, the most influential factors in the backlog, increasing specially the stay of the students within the university are, the management of time in their leisure activities with the 19.54%, which among others we can observe alcoholic beverages influence in these activities, time spent on electronic games, etc.; the poor selection of a professional career or the existence of "bottle necks" in some careers, influencing all of them in the student's increased backwardness with 15.92%

Other influence factors in the student backlog are the students' need to work with 15.16 %; the students' civil status, which affects their low school achievement as there is a difference, marginal but significant, between single and married students, the latter with higher propensities to lag in their studies. The tested index explained 60% of the phenomenon with a standard error of the 6.62%. Figure 3:

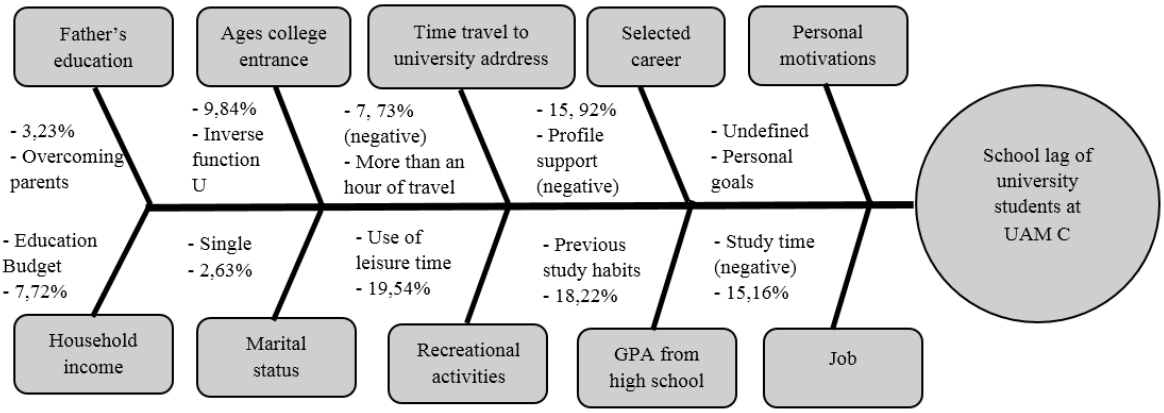

Figure 3. Factors influencing in school lag of university students at UAM Cuajimalpa (Note 3)

This analysis can establish institutional policy lines that can have a positive impact on improving the students' academic performance in the future. Among the policy actions you can see the change in the average high school grades weighting for university entrance. Increase the support for school transport to reduce students' travel times to the university facilities and review the weighting of the entrance age as a selection factor for students, may be policies easily applied to the improve the student achievement indicator.

Regarding the lines of institutional policies to deal with the student backlog, better handling of student social activities can be seen to influence in their free time, through the creation of appropriate conditions and the creation of clubs that allow to improve the students' leisure time management.

Reviewing the scholarship program to influence the number of students who study and work can impact favorably on reducing student lags within the university. The bottleneck analysis within the different careers can allow improving the indicators of this analysis variable, as can be seen in Table 5.

Although there are student backlogs in all the careers, there are two big groups of careers with really worrying backlogs, being the group of careers with more than 50% of the students left behind, a red focus that should be analyzed institutionally, in order to achieve the change of criteria for student's university admittance or for the improvement in the existing bottlenecks support.

Table 5. Careers UAM-Cuajimalpa with greater student lag

Careers	**Percentage of students lagging**
Computing	90.90%
Biological Engineering	81.30%
Molecular biology	64.70%
Applied mathematics	61.50%
Technologies	61.50%
Design	46.20%
Socioterritorial	45.80%
Humanities	45.50%
Communication	28.90%
Administration	17.60%

4. Conclusion and Policy Recommendations

Any educational system that seeks to direct its action guidelines towards achieving quality education cannot lose sight of the coherence of relations between the different elements of the system. Therefore, the coherence between the inputs, processes, and the expected product becomes a priority issue. Thus, the continuous analysis of this relationship must focus increasingly on empirical analysis of educational resources, characteristics of students and the results produced; aiming to center the axes on educational reforms that allow re-focusing the social function of the higher education in Mexico.

Market demands clearly are transforming the educational system in terms of efficiency and effectiveness; however, mainly the early levels (primary and secondary schools) have been worked, leaving aside the debate about the new college requirements, roles, and vision, and it is on this need that raises the proposed exercise.

To this end, we stop at the social function of the University, which has been characterized by being sensitive to its time and be committed to the society as the center of entertainment, as producer and transmitter of knowledge. Thus, the University has focused on associating scientific, technological, human and artistic knowledge produced in the context of its application with the local, national and global needs.

However, academics, government and industry have posed several questions on whether: The University today, fulfills this function? Will the students have the same motivation to study as 20 years ago? And finally, if finishing college studies will be a strategy of social mobility?

This leads our gaze towards motivation as a central topic in higher education, because both are closely linked to explain the effort and cost of opportunities that university students face today. The motivation is given in an integrated taxonomy of dichotomous distinction (intrinsic and extrinsic). On the first one, we will define it as the curiosity, exploration, spontaneity and volitional interest (the pleasure of the study). And on the second, external motivation, by contrast, is defined by the commitment to an activity for a result that is expected of the activity itself; that is to say, it is expected a reward of it or because it evades a consequence.

Young people struggle between two positions: the first is related to the integration to adult's role activities through the structure of the labor force, and the second is focused on personal satisfaction. Given the serious problems which our society presents on lack of occupational expectations, with these two positions, the student faces ambivalence, taking the University as the traditional social mobility agent, and personal satisfaction.

At other times, good training was a protection against unemployment; today is hardly given *de-facto*. Young people are aware of the difficulties involved in labor insertion. They know that the career "in automatic" does not guarantee a good job. However they recognize that having it, at least opens to them the possibility to engage in better conditions.

Young people know that a career currently is not enough because there is high competitiveness, and therefore, they are aware of the current role of the University. They see the extracurricular activities as a space of skills development that can represent for them, an advantage when facing the employer.

Thus, one of the most important findings generated by the present study is, precisely, to look in the management of spare time as a key variable to understand the process of skills development for the preparation towards the roles in the labor market. In addition, through analysis of the management of spare time, we approach to understand the motivation that is currently enabling young people to play an active position in society, without forgetting his status as an apprentice in the productive process.

This position gives a different emphasis on understanding the utility function that represents education, because through this variable it opens as a trigger among student groups, because the election of activities creates skills that will enable them to integrate into the labor market, training, build social support networks with peers and will allow them to give an added value to meet current competences.

With the integration into working life, there is risk of having educational backlogs; however, the consolidation of new skills to perform adult roles will create in the student values of discipline, respect, and fulfillment. So, this variable could be treated as a space of positive motivation to provide future tools in the labor market, and at the same time, give the young attachment to the university and prevent dropping out of school. This could affect the pace of academic achievement of young people, but would be compensated with the learning and practical experience gained in the labor market related to the chosen studies.

With it, we could reaffirm knowledge and skills within the University; and allow developing the skills addressed to the student's career. This also could control one of the variables that has attracted most attention in this study,

which is the management of free time; giving the young the direction and focus on learning and the development of qualities of socialization towards efficient adult life.

In addition, it is clear that one of the attractions to enter adult life is work, since the transition, through the departure from home or the formation of a family, is not as attractive, probably due to the fact that running back is not as simple as entering or leaving the employment status.

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Notes

Note 1. Extracted from Rodríguez and Torres, 2008

Note 2. Delgado & Olivera, 2015

Note 3. Delgado & Olivera, 2015

Appendix I

Table 6. Analysis factors of school performance

Analysis factors	Authors											
	Dayuma Vargas, Nancy Galambos y Margie Lachman	Trond Beldo Klausen	Matthew Johnson, Julie Bruch y Brian Gill	Terri J. Sabol y Lindsay Chase-Lan sdale	Montira Watcharas ukarn	Brendan Mcelroy y Ann Kirby	Loris Perotti	Elisa Rose Birch And Paul W. Miller	Frances Stage And Don Hossler	Bob H. Suzuki	Barbara Kerkmann , Thomas Lee, Jean Lown And Scot Allgood	Babak Huseynpu r, Masoud Yazdani Moghadd a, Ghafour Rezaie
Parents' education.	***X***	***X***							***X***			***X***
Parents' age				***X***								
Trajectory	***X***					***X***						
Transport					***X***							
Sex	***X***					***X***		***X***				
Age	***X***					***X***						
Civil Status											***X***	
Status Socioeconómico	***X***	***X***							***X***			***X***
Household income									***X***			***X***
Place/area of residence		***X***		***X***				***X***		***X***		***X***
Cultural level		***X***					***X***					
Economic/ Education Scholarships			***X***									
Leisure activities.					***X***	***X***						
Education level						***X***						
Language												***X***