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SOME ASPECTS ABOUT FINANCIAL KNOWLEDGE OF UNDERGRADUATE STUDENTS

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ABSTRACT

The purpose of study is to measure the level of financial literacy of accounting students at the Universidad Veracruzana; campus Mocambo, considering that financial education is the knowledge that people have on financial issues in order to solve everyday problems regarding financial management. The variables analyzed include age, gender, race, socioeconomic status, learning styles and student's perceptions on financial services, the way they take care of their money and their knowledge of five key financial issues. Three hypotheses were raised, therefore, in order to test H1 we performed a factorial analysis with an extracted principal component; to H1.a the statistical procedure of linear correlation of Pearson r and t test are applied, and to H2 a Z test is performed. Although the theory suggests that the level of higher education gives the student a better understanding of the financial issues, this research however, proves otherwise. In fact, the range of "excellent money management" is below 50%. The findings suggest that there is no a good level of financial literacy in the population studied. This fact is contrary to expectations, because the student who studies public accountant is expected to have financial knowledge in these subjects, all this, in considering the subjects which integrates the curriculum related to the field of finance. Therefore this finding should be an important indicator for the academic authorities of the Universidad Veracruzana for corrective actions in this respect.

INTRODUCTION

Financial education and education in general are considered the driving force of a country's social

development by helping to generate financially competent human capital among other virtues; in consequence, its effect will be making better decisions for the benefit of its economy (Ruiz, 2011). It is therefore considered an important issue of global concern for developing and emerging economies, since these lack financial inclusions, the latter being "the population`s continued universal access to diversified financial services, proper and formal, as well as the possibility of their use in accordance to their financial needs to contribute to their development and well-being" (Heimann *et al.*, 2009).

In Mexico, the Central Bank, the Ministry of Finance and Public Credit and CONDUSEF (National Commission for the Defense of Users of Financial Service) bet on a strategy to promote financial education to a greater number of people and thereby creating conditions to better fulfill legal mandates, the diffusion of issues such as determining interest rates or the growth of monetary aggregates. Today, central banks want their discussions on monetary policy to be known and understood by a significant number of people, this is why since 2011 every note is made public on this subject. A growing financial education can support and reinforce some of the tasks of the Central Bank of Mexico; as would be the fact that the users of financial services may have the required information. For example, that the banks comply with the provisions on legal fees charged and inform the users about their payment systems, costs, advantages and limitations. An indicator of the population's interests on financial education is the use of electronic media. The web portal and social network accounts from the Bank of Mexico are frequently visited by a diverse audience; more frequently to know interest rates, exchange rates or inflation, among others. Financial education also helps to fight crime, such as counterfeiting; the public helps to get them out of circulation, the same public that acquired the information through the promotion of the Bank of Mexico on banknotes and coins, thus achieving low rates in this offense in Mexico.

The government's role is very important to achieve these goals, because its function is to coordinate efforts and measure impacts of stakeholders (private sector, social sector and government) to define an agenda for financial education. Globally, according to the latest annual report of the United Nations Secretary-General's Special Advocate for Inclusive Finance for Development (UNSGSA), about 2,700 million people still do not enjoy the benefits of having access to saving accounts, loans, insurance, payment systems, pension plans and remittance services. Those most affected, and disproportionate, are the world's poorest communities, for example, only 19% of families in sub-Saharan, Africa, have bank accounts. In 2009, leaders of the Group of Twenty (G20) recognized this problem, and in December of 2010, the Global Alliance for Financial Inclusion (GPFI) was created. In 2012, Mexico as leading representative of this group, emphasized the great importance of this strategy and since then continues developing actions in order to promote financial inclusion, financial education and consumer protection. The lack of financial benefits for a large part of the population is more often present in marginalized sectors, mainly due to little or no financial education and by the lack of interest of financial

services to provide or bring these benefits. It is clear that the vast majority of banks prefer people or companies with large amounts of capital, allowing them to achieve more quickly their lucrative goals (McVicker, 2007). The term bancarization is frequently used to refer to the percentage of population with or without access and use of banking services, normally neglected by commercial banks (Heimann *et al.*, 2009).

The exclusion of a large percentage of the population of a country's banking process, widens the gap of not having access to a better life; while the user with access to financial services is able to (with a basic level of financial literacy) plan for a dignified retirement, by taking advantage of the financial instruments offered by the bank (Lusardi and Mitchell, 2007). Financial education then becomes a process where benefits can be achieved gradually, leading to personal, family, social, and economic growth (Coates, 2009). According to Condusef (2010), 62 out of 100 Mexicans lack some sort of financial education, 80% of the families save outside the financial system and 31% of Mexicans spend more than their income level. These figures demonstrate the lack in education and financial planning (Ruiz, 2011).

Industrialized or first world countries are no exception in this great effort to bring financial education to minorities; as an example, we can refer to the case of the United States, which through the Treasury Department in 1992, established the Financial Education Office, whose purpose is to provide information on financial issues to Americans. Later in 2004, the Financial Literacy and Education Commission was created, with the main objective to make this idea a national strategy to disseminate financial education in all the states. Financial markets have grown at alarming rates, frequently offering new products to satisfy their client's needs and to attract potential customers. However, so many tools and options can be overwhelming due to the complexity of the financial markets, especially to non-experienced population who are at a continued risk of abuse (Mandell and Klein, 2007). It is important to note that financial education contributes to make wise decisions, but beyond that, Gnan *et al.* (2007) and Mandell (2009) suggest that it contributes to the general wellbeing of the economy. According to Gnan *et al.* (2007), economic and financial education softens the functioning of financial markets to the extents that the citizen's best decisions as a whole, contribute to the reduction of economic crisis and promote stability in the financial system. Even more, economic and financial education encourages a sustainable economic policy, as citizens are more educated in economic and financial matters and are able to take sides in any issues adopted by their government Lacker (2009). Meanwhile, Mandell (2009) believes that the consumer's poor financial decisions have a negative effect on the economy, such as a low savings rate and capital formation, a low level of retirement savings, and a higher rate of unequal distribution of income and wealth. Therefore, the problem is more a matter of education rather than culture, because if definitions are analyzed, culture is "a way of life and customs of an age or social group", while education is a "process of socialization and learning aimed at intellectual and ethical development of a person" (Diccionario de la Lengua

Española, 2005). Culture is a result of and education is a learning process, the first cannot be achieved without fulfilling the second; in other words, you cannot get the desired result without having been in a learning process in order to obtain or collect these results. Therefore, financial literacy will be achieved by carrying out an arduous process of financial education, to be permanently adopted and carried out on a daily basis as a national strategy.

Due to the importance of financial education in social dynamics, it is intended by this empirical study, to determine the degree of financial literacy in a specific segment of the student population with economic and administrative training. In order to obtain empirical evidence designed to show at which degree financial education is present in this population and that also is likely to allow comparison with other areas of knowledge in subsequent studies, as referred in O'Connell (2007). The following describes the approach of the object of study in the context in which it subscribes.

Problem Statement and Study Questions

Society has changed its values, for example by not giving importance to a quiet and austere life for preferring a more hedonistic and instant gratification of their desires. This trend makes people see their respective debt and financing costs as part of their life. However, these debts can affect their home environment. Unfortunately, this way of thinking, is the reflection of the lack of financial education, which mainly threatens lower income classes and young people, due to their bad financial decisions Denegri *et al.* (1999), McElprang, (Haskell and Jenkins, 2005), cited in Denegri *et al.* (2009). Financial education can be developed in a formal environment, for example through the school system. Teachers in this area are a major instrument for achieving this objective, hence the importance to train them and to include this type of education in the curriculum, that enables graduates to understand, confront and better resolve the financial situations they encounter, and thereby promoting decision making in this area (Singer, 2008). The above argument leads to the following question that guides this research and allows setting the goal of this study:

Formulating the Question

RQ1: What is the level of financial education that college students in economic and administrative areas have at the UV, Veracruz Campus?

Aim of the Study

To determine the level of financial education that is present in college students of the economic-administrative bachelor degree in Public Accounting from the Universidad Veracruzana, Veracruz Campus.

Delimitation of the Study

The geographical boundary is limited to the suburbs of Veracruz-Boca del Rio, university education sector, specifically the School of Accounting at the Universidad Veracruzana. Below is a theoretical approach on the studied issue, an analysis and discussion of theoretical and empirical variables related to education and financial inclusion.

Theoretical Approach and Research Hypothesis

Lusardi and Mitchell (2008), found that people with less finance knowledge have the tendency to apply for more loans, accumulate less wealth, and pay more fees for financial products. They tend to invest less, face difficulties with debt and ignore the terms of their mortgage and other loans, moreover, that the most limited segments in financial education are represented by certain economic and racial minorities, in general women and people with less education. This lack of knowledge causes many people to pay fees and surcharges that could be avoided, for example credit card late fees, pay only the minimum, exceed the credit limit or withdraw cash. Clearly, not every person needs the same financial education. The degree of financial literacy varies widely by age, race, sex and socioeconomic status. To create good financial education programs, these variables should be considered in addition to personal preferences and learning styles.

Financial education should be available to consumers, introducing topics relevant to the needs of potential users (CNMV, 2007), (OCDE., 2005). There are studies that prove the understanding of economic and financial concepts in children at an early age, in fact, there have been developed effective methods for teaching and these results show that the interest and attitudes of students often get improved after the teachers are trained on how to develop classroom programs in economy, the above according to Kourilsky and Laney (1983, 1989) cited in Rodgers *et al.* (2007), cited in Huchín and Simón (2011). Meanwhile, the Mexican Banks Association, (ABM) believes it is important to focus on financial education efforts, from the beginning, in to two groups: those directly linked to the financial sector and those that are not. The ABM based on the premise that more information and financial education are a matter of equity. The program states the following, among its objectives: a) To create awareness among Mexicans on issues of savings, credit and money management, b) Stimulate the children's interest in these issues to discuss them in their home, c) demonstrate that the financial system is their ally in accumulating assets. The most important activities carried out by the ABM, to meet the outlined objectives are: Creation of an area for financial education in June of 2007; an agreement with the National Council for Economic Education of the United States to translate two of the most important books in financial education (one for youths and another for parents/teachers); a children's savings program AEM-SEP; and an agreement signed with UNAM to boost the forming of specialized trainers or educators.

This program apparently uses a single material, the translation of U.S. programs designed to

provide financial education to youths and adults. It's a program that has advanced slowly and has faced great challenges to achieve the objectives it has set (Gómez, 2009). Another important participant in the task of transmitting financial education in our country is the National Savings Bank and Financial Services, National Credit Society (BANSEFI). It was established on January 2, 2002, with the aim to promote savings and financial inclusion. BANSEFI is committed to promoting financial education in Mexico.

The bank trains and certifies, by permission of the Ministry of Public Education (SEP), educators in this area and offers annual workshops to about 20,000 poor people in their own localities. They also created the website "finanzasparatodos.org.mx" for anyone who wants financial education and offers three levels of an online course. To improve financial education, it is important to consider that G20, as a priority, established to boost financial inclusion; looking forward to continue the work of past presidents of this organization to establish the right strategy to generate new public policies to achieve the goal of greater growth and stability.

Related Studies

A study by the Consumer Protection Agency in El Salvador reveals that 68.8% of respondents claimed not to have used any financial services during the last year, while those who did use financial services, 25% used the services for savings account, followed by debit and credit cards and personal loans. The same study reveals that the level of access to financial services increases to the extent that education levels increase (Cartagena, 2008).

A statement from the Federal Deposit Insurance Corporation published on the web September 22, 2004, revealed in a study by Hilgert *et al.* (2003), that there are clear and important differences statistically generated by the demographic characteristics of an area shared by a certain groups with different kinds and levels of financial education needs. From the forementioned, it is clear that financial educators should consider the demographic and cultural elements of their students in order to develop an adequate program of this kind. However, there are studies that state that financial and economic education is only effective at the short term (one year) for students.

This also agrees with Mandell (2008) who comments that the financial behaviors of young people will not change over time. Other studies prove otherwise, as Bernheim *et al.* (2001) and Tzu-Chin *et al.* (2007) who demonstrated that a financial education program implemented in the seventies and eighties to intermediate students in the United States, resulted in a greater accumulation of wealth in the long term (20 years), compared to students who did not attend this program.

Subsequent studies by Mandell (2009) concur with these two positions, the first hypothesis is that financial studies remain "dormant" in the minds of students until it is needed, for example when they start working and have a better steady income that allows them to apply the acquired

knowledge. The second hypothesis explains that due to the economic environment during the period in which they take this training (economic crises and devaluations or market stability), determine the financial behavior of young people, that is, they'll give more or less importance to the learning. In this regard, a program in Colombia called "Finance for Change", applied in intermediate level, determined that it had a positive impact on the development of economic and financial knowledge, without this being considered optimal because the results are expected in a long term (García Bohórquez, 2012).

In another study conducted at the *Universidad de la Frontera* in Chile, there was an emphasis on the variable: gender. They believe that women have been excluded from the various public processes and instead have engaged in traditional activities in their home, preventing them from further development in this sector. Finally, Denegri *et al.* (2009) say that in order to generate an educational process that prioritizes financial education; it would be advisable to promote and place financial products on college campuses. It is likely, that by not taking these steps, contributes in creating people (future users of financial services) who lack the knowledge in financial matters, hence the importance for educational institutions to implement a tool in favor of economic and financial literacy that gives the students the knowledge and facilitate decision-making in financial instruments, just like the studies of Lusardi *et al.* (2009).

 For the theoretical and empirical arguments outlined above, this study seeks to measure in the population studied, the degree of financial education and thus assess the importance of extending this analysis to other careers, even the ones not related to economics and/or finance, just like the studies done by Tennyson and Nguyen (2001).

Finally, to make the results known by the authorities of the Universidad Veracruzana, with the purpose to spread awareness on the need to incorporate financial education at all areas of knowledge. Thus, it raises the following:

Hypothesis
Hi: The structure of the latent variables as age, race, sex, socioeconomic status, personal preferences and learning styles determine the level of financial literacy in college students.

This hypothesis is tested through the follows:
H1: The learning style of the student currently enrolled in Public Accounting is: theorist, reflective, pragmatic and active
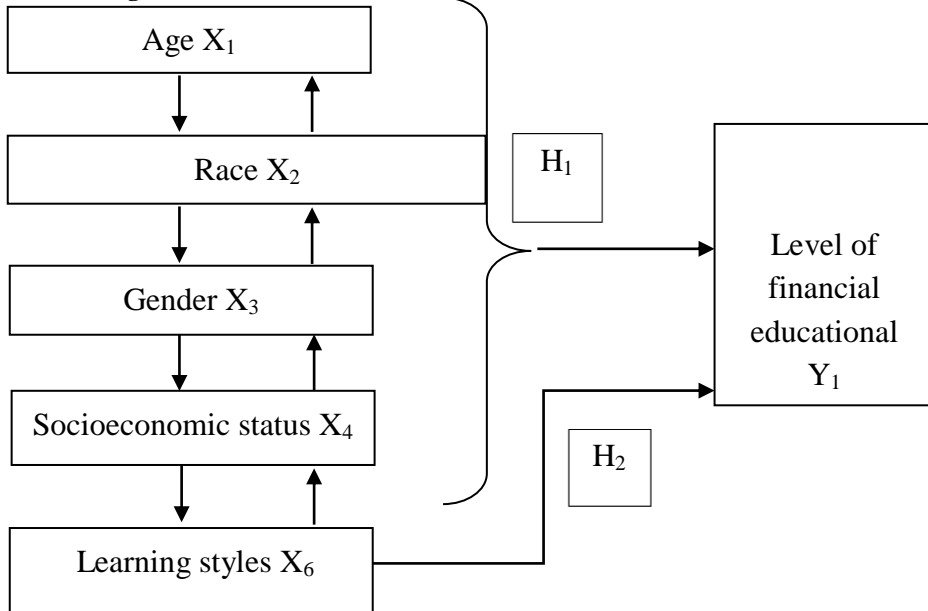As an extension of the H1:
H1.a: The learning style is correlated to the student's financial education level.
H2: The majority of undergraduates show an "excellent care of money".
The variables involved in the problem are shown in figure 1

Figure-1. Variables Involved and the Route of the Theoretical Model

Source: own

METHOD

This is a descriptive study, and the aim is to determine the level of financial education of a specific group of students. This study is non-experimental, there is no manipulation of independent variables, and it is transversal, data is collected at a particular time (2011-2012).

Finally, it seeks to measure the influence of the independent variables (age, race, gender, socioeconomic status, preferences and learning styles) on the dependent variables (degree of financial education), for this, we used a correlation.

Population and Sample

The target populations of this study are current students of the Bachelor of Accounting from the Universidad Veracruzana assigned to Mocambo Campus, Veracruz region in the 2011-2012 school year. The registered population amounted to 878 students. To calculate the sample, the procedure is as follows:

$$ n = \frac{4\,NPQ}{d^2\,(N-1) + 4\,PQ} \qquad \text{n = sample} $$

Where:

N = total enrollment

P = Probability of the event for 80%, this would equate to 0.8

Q = Event against 20%, equal to 0.2, Accuracy = | p - p | ≤ 05 = d = d2

d^2 = allowable error or decision 0.05, equal to 0.0025;

$$n = \frac{4(878)(0.8)(0.2)}{0.05^2(878\text{-}1)+4(0.8)(0.2)} = \frac{561.92}{0.0025(877)+0.64} = \frac{561.92}{2.8325} = 198.383054$$

Substituting the values into the formula:

The result is 198 students. Depending on the number of generations during this study, it was carried out a stratification of the enrolled population to generate a proportional sample, as shows table 1.

Table-1. Determination of the application of the survey by generation

Generation	Population Proportion by generation		Sample Proportion by generation	
	nominal	relative	nominal	relative
2008-2012	158	18.00%	36	18.00%
2009-2013	156	18.00%	35	18.00%
2010-2014	189	22.00%	43	22.00%
2011-2015	176	20.00%	40	20.00%
2012-2016	199	22.00%	44	22.00%
Total	878	1	198	1

Source: own

Instrument

Was designed a questionnaire which is divided into four stages: The first seeks to obtain general information about the respondent, the second to obtain data on socioeconomic status; the third meets individual learning styles and finally the financial literacy. The instrument was applied face to face to 198 college students.

Statistical Procedure

For variables: age, race and gender, a descriptive percentage is done. For the variable socioeconomic level, we take the index of the Mexican Association of Market Research Agencies and Public Opinion (AMAI), it has been a standard reference point since 1994 for the industry's standard measurement of Mexico's market.

This indicator index is known as AMAI 10x6 Rule, as it classifies the socioeconomic level into 9 levels from a 10 variable category as shown in table 2 and level points and main features shown in table 3.

Table-2. AMAI Index 10x6

Indicator	Variables
Technology and entertainment	Number of color TV´s and computers
Practice Infrastructure	Number of spotlights, number of cars and stoves
Health Infrastructure	Bathrooms, showers
Basic Infrastructure	Floor type, number of rooms
Human capital	Education of the household health

Source: taken from AMAI

Table-3. AMAI index 10x6 socioeconomics score and grade

Level	Points	Main features
E	Up to 60	Nothing
D	Between 61 and 101	With no walls and Some Services
D+	Between 102 and 156	Basic Health
C	Between 157 and 191	Living Easy And Practical
C+	Between 192 and 241	Fullness Of Entertainment And Technology
A/B	Between 242 and more	Planning And Future

Source: take from AMAI

For the variable of personal learning styles, the Honey-Alonso scale was considered, consisting of 80 indicators that determine the style: theoretical, pragmatic, active and reflective. Two hypotheses were detached from this variable: For H1, we performed a factorial analysis with an extracted principal component. For this purpose, 80 indicators grouped in four dimensions of learning style. To H1.a the statistical procedure of linear correlation of Pearson r and t test are applied. To measure the variable level of financial literacy, it was designed a hybrid instrument that takes the input from the first national survey on financial literacy by UNAM for Banamex in 2008. Likewise, the entire test created by CONDUSEF is taken to determine how accurate the financial decisions that people make are.

Finally, five questions were included of a translated test that appears in one of the reports of FINRA (Financial Industry Regulatory Authority) to evaluate financial education. The aforementioned, five degrees or levels of financial education are considered: calculation of interest rate, inflation, bonds and interest rates, mortgage interest payments and risk diversification.

CODING AND VALUES ASSIGNED IN THE SURVEY

Socioeconomic Status

For the coding of this variable, the score established by AMAI is considered.

Personal Learning Styles

To code this variable, a Likert scale was used where 5 is strongly agree and 1 is strongly disagree.

Degree of Financial Education

Three questionnaires were applied to measure the degree of financial literacy, the second, which is

from CONDUSEF will be coded according to the values assigned to each item, as shows table 4. Third test, it is taken from one of FINRA reports to assess financial literacy, valid responses are shown in table 5.

Table-4. Score of CONDUSEF survey

Scores	Qualification
$15 - 24$	Excellent care of money
$25 - 35$	Deficient care of money
$36 - 45$	Null care of money

Source: taken from CONDUSEF (2012)

Table-5. Coding FINRA test

Subsection	Correct response
Interest rate calculation	A
Inflation	C
Bonds and interest rate	B
Mortgage interest payments	A
Risk diversification	B

Source: taken from Financial Industry Regulatory Authority (2012)

Hypothesis Testing

Specifically, to test the working hypothesis, the following procedure is performed: To test H1: The learning styles of the currently enrolled undergraduate student are in order: theoretical, reflexive, pragmatic and active. Ho: = X1, X2 <X3 X4 and Hi: = X1, X2> X3 X4
Where: X1 Theoretical: Reflective X2: Pragmatic X3: Active X4.

The factorial load and its saturation contribute to eigenvalues and the commonalities (h) gives evidence of the variance proportion of each factor *m*, which represents that the total variance, which accounts for the studied phenomenon, is desirable that $\sigma^2 > .5 => 50\%$ in the sequence *X1, X2, X3, X4*. To validate the relevance of the factor model, it is estimated: X^2 and Bartlett test of sphericity KMO (Kaiser-Meyer-Olkin) and the value of MSA (Measure sample adequacy), so if KMO values are close to 1, MSA> 0.5 and higher calculated Chi square tables, then the factor analysis is relevant, hence the need for evidence of the rejection of *Ho*.

To test H1.a: Learning style is correlated to the student's degree of financial education. A statistical procedure of linear correlation, Pearson *r* and *t test* are conducted. The expression that helps to calculate the coefficients $\rho_{x,y}$ given that:

$$\rho_{X,Y} = \frac{\sigma_{XY}}{\sigma_X \sigma_Y} = \frac{E[(X - \mu_X)(Y - \mu_Y)]}{\sigma_X \sigma_Y},$$

And

$$r = \frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{n\left(\sum x^2\right) - \left(\sum x\right)^2}\sqrt{n\left(\sum y^2\right) - \left(\sum y\right)^2}}$$

Even more, *t value*:

$$t = \frac{r}{\sqrt{\dfrac{1-r^2}{n-2}}}$$

Decision: Not to reject *Ho* if $r_{xy} = 0$, p > 0.05; Reject *Ho* if $r_{xy} \neq 0$, p < 0.05

To test H2: The majority of undergraduates show excellent care of money. A *Z* test is performed to assert in stating that p> 0.5 so its representation is: Ho: p = 0.5, Hi: p> 0.5. So we take the percentage of cases that fall in the range of "15-24" referring to CONDUSEF and called "Excellent care of money", later transformed into the value of which is equal to: N (200 cases) * % frequency obtained in "15-24" = the number of cases that fall into that frequency.

Statistic test is
$$Z = \frac{\hat{P} - p}{\sqrt{\dfrac{pq}{n}}}$$

Valor P= 0.0001
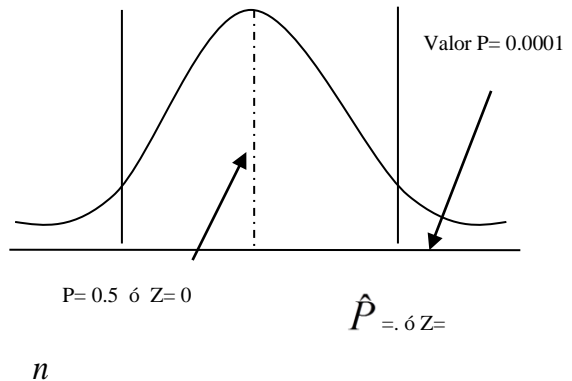
Where

X= proportion of the sample, n = sample

P= 0.5 ó Z= 0

$\hat{P}$ =. ó Z=

n

Analysis and Discussion of the Data

Frequencies obtained for each of the reagents of the instruments used in the research field are describing in Table 6.

Table-6. Descriptive "General data"

General data	**Age**	18 to 22	**87.50%**
		23 to 27	10.50%
		28 or more 47	2.00%
	Gender	Female	**64.50%**
		Male	35.50%
	Race	White	3.50%
		Black	1.0%
		Hispanic	**95.50%**

Source: own

The most representative age range was between 18 and 22 years (87.50%), just as the gender was predominantly women (64.50%), while the race with the most respondents identified was Hispanic

(95.50%). Socioeconomic status of the respondents are describing in Table 7.

Table-7. Descriptive "socioeconomic status according test AMAI"

Socioeconomic status according test AMAI	D+	Basic Health	19%
	C	Living Easy And Practical	22.50%
	C+	Fullness Of Entertainment And Technology	**43%**
	A/B	Planning And Future	15.50%

Source: own

In relation to socioeconomic status, 19% have only minimal sanitary services at home and aim primarily to acquire goods and services that make their life more simple and practical. The remaining 81% are within a financially stable segment: 22.50% is above the normal level of wellbeing, 43% have some technology and entertainment, but still cannot afford to be spending in luxuries, while the remaining 15.50%, have the highest standard of living and income in the country. On the topic of Financial Literacy: Questionnaire data obtained from Banamex appears in Table 8a.

Table-8a. Descriptive Financial Education

Financial education (test 1, Banamex)	Which means saving for you?	Economic security	36%
	What do they do in the home to teach children to save?	Saving at home, not in banking institutions	45%
	Has any member of your household requested a loan in the last 12 months?	Yes	71%
	Who?	Banks	19% (however the 28% no answer)
	How do you prefer to manage your money?	Cash	65%
	Do you usually keep track of your debts, expenses, incomes and savings?	Yes	67%
	Do you know how to budget to plan for the distribution of your money?	Yes	78%
	What are your five budgeted priorities?	Feeding	91%
		Education	87%
		Healthcare	75%
		Saving	56%
		Debt payment	45%

Source: own

The questionnaire survey taken from Banamex about the financial education reveals very interesting aspects about the perception people have on financial services, as well as the main uses they give to their money. In table VIIIa interesting facts are observed, for example, 36%

considered that savings translates into economic security, 45% teach the smaller ones at home that it is better to save at home than to use whatever saving instruments offered by the bank, even if it means not getting any return. 65% prefer to manage their money in cash, and 78% report that they know how to budget and plan the distribution of their money. Finally, in the line of priorities, saving is in fourth place as indicated by 56%, with food, education and health, having a higher priority in the population. Continues the questionnaire in table 8b

Table-8b. Descriptive Financial Education

Financial education (test 1, Banamex)	How do you distribute your current budget?	Food	74%
		Clothing and footwear	69%
		Public transport	69%
		Education	65%
		Phone	61%
		Saving	51%
		Debt payment	45%
		Recreation	44%
		Dwelling (apartment)	31%
		Gasoline and car	14%
	Were the expenses during the last month within your budget?	Yes	80%
	When you have money left over (from your spending or your salary), what is it commonly used for?	Saving	47%
	What you consider to be the main reasons in order to save?	Emergencies	41%
	How frequently are you informed about savings accounts, investments, loans and retirement funds?	Occasionally, only when I need	68%
	During the last 12 months, did any household member participate in some of the following actions?	Tandas (is a way of saving)	41%
		I keep it at home	68%
		I loan money	44%
		Participates in a savings account familiar, neighborhood or a group solidarity	30%
		He gave money to save to a family member or someone you know	13%
	Do you use credit cards at home?	Yes	55%
	What are the main advantages of using credit cards?	Availability to buy when there is no money	35%

Source: own

Table 8b shows that 68% prefer to manage their money firstly under the scheme 'stash at home', which could be detrimental to the economy as it is removed from circulation, large sums of money without generating any profit (as returns) for the individual or the country's financial system. Secondly, we found that 44% lend their money, this scheme can generate returns though it is not regulated by any financial authority, so it is risky and can jeopardize their savings; and the third

option is participate in "tandas" 41% (this is a form of savings in Mexico) which generates no income and is a way to plan for future spending by forcing them to pay a certain amount, unfortunately you can lose the savings as it is handled by someone who just keeps track of who pays and who doesn't, there is no legal written agreement to protect the people involved.

An interesting fact is that 71% of respondents report that they requested a loan in the last 12 months, but only 19% requested these loans to banks. This lead us to conclude the rest probably asked a family member, or a neighborhood or community savings. However, 55% of the sample used credit cards as they consider the availability and advantage of purchasing with no money (35%). 67% of the sample keeps track of their income and expenses, equally referred as to know how to make a budget (78%).

On the issue of financial education, table 9 is presented with the data obtained from the second questionnaire from CONDUSEF. This instrument gives results showing that 49% of respondents making sound financial decisions and taking care of their money, and that despite of having made mistakes, they also learn from them and know that prevention is less expensive than making them. The 38.50% said that although they try to take care of their money, lack of information and neglect has caused them an additional cost to their pocket. The rest of the population (12.50%) did not answer or did not achieve the required score to qualify. Table 10 presents the data obtained from the third questionnaire from FINRA

Table-9. Descriptive Financial Education

Financial Education (Questionnaire 2, CONDUSEF)	Excellent care of money	15 to 24 points	49%
	Deficient care of money	25 to 35 points	38.50%
	Null care of money	36 to 45 points	0%
	Did not score reaches (NSR)	1 to 14 points	8%
	Did not answer (N/A)	0 points	4.50%

Source: own

Table-10. Descriptive Financial Education

Financial Education (Questionnaire 3, FINRA, Investor Education Foundation)	Interest rate calculation	148 rights answers	74%
	Inflation	107 rights answers	54%
	Bonds and interest rate	36 rights answers	18%
	Mortgage interest payments	83 rights answers	42%
	Risk diversification	55 rights answers	28%

Source: own

The last instrument to measure financial literacy (FINRA test) to determine the level of knowledge is structured in five key issues: regarding the "interest rate calculation" 74% gave the correct answer on the topics of "inflation" and "mortgage interest payments". The results were not as daunting as 54% and 42% respectively gave correct answers. Meanwhile on the issue of

"risk diversification" and "bonds and interest rates", the results were lower, with 28% and 18% respectively of correct answers of the survey sample.

Hypothesis Testing

H1: The learning style of the student currently enrolled in Public Accounting is: theorist, reflective, pragmatic and active.

The load factor and contribute to its saturation commonality eigenvalue and (h) gives evidence of the proportion of the variance of each factor m, which means that:

Ho: $= X_1 < X_2 < X_3 < X_4$ and Ha: $= X_1 > X_2 > X_3 > X_4$

Where: X_1 Theoretical, X_2 Reflective, X_3 Pragmatic, X_4 Active

The results, first, note that the correlations between the variables are all significant (except: reflective / active, significance = 0.388 and r = - 0.020 and theoretical / active significance = 0.274 and r = 0.043) as shown in table 11.

Table-11. Matrix of correlations, KMO and Bartlett test

	Variables	Active	Reflective	Theoretical	Pragmatic
Correlation	Active	1.000	0.020	0.043	0.447**
	Reflective		1.000	0.725	0.336**
	Theoretical			1.000	0.516**
	Pragmatic				1.000
Sig. (Unilateral)	Active		**.388**	**.274**	0.000
	Reflective			0.000	0.000
	Theoretical				0.000
	Pragmatic				
Bartlett test of sphericity			264.742 (α=0.00) df 6		
Measure sampling adequacy (overall)			0.538		
** Correlation significance at level 0.01 (bilateral).					

Source: own

Contrast Bartlett values support the conclusion that the correlation matrix is significant (α=0.00) when all the variables are taken together. The measure of overall sampling adequacy (MSA) is 0.538 is within the acceptable value (0.50). However, table 12 shows the examination of the values of each variable and can be observed that one of the variables (Active 0.415) has a value less than 0.5, because it has the smallest value, it can be omitted in order to obtain a set of variables that may exceed the minimum acceptable levels of MSA.

Table-12. Measure sample adequacy and partial correlation

Variables	Active	Reflective	Theoretical	Pragmatic
Active	0.415[a]	–0.019	0.194	–0.497
Reflective	–0.019	0.582[a]	–0.675	0.065
Theoretical	0.194	–0.675	0.532[a]	–0.453
Pragmatic	–0.497	0.065	–0.453	0.559[a]
Measure sample adequacy[a]				

Source: own

Excluding variable (Active 0.415), now table 13 shows the fitness values. In the same table, it shows the correlation matrix for the revised set of variables with the measures of sampling adequacy and Bartlett contrast value. The values show that all the variables are significant.

Table-13. Matrix of correlations, KMO and Bartlett test

	Variables	Reflective	Theoretical	Pragmatic
Correlation	Reflective	1.000	0.725	0.336
	Theoretical		1.000	0.516
	Pragmatic			1.000
Sig. (Unilateral)	Reflective		0.000	0.000
	Theoretical			0.000
	Pragmatic			
Bartlett test of sphericity		208.947 (α=0.00; df=3)		
Measure sampling adequacy (overall)		0.583		

Source: own

Bartlett contrast shows that nonzero correlations exist at a significance level of 0.01. The reduced set of variables (collectively) reach a value of 0,583, and each of the variables reaches a value higher MSA 0.5 (Table 14). Finally, it is observed that the values of the correlations indicate the strength of the relationships between the variables of the reduction set. All measurements indicate that the set of variables are suited for factor analysis.

Table-14. Measure sample adequacy and partial correlation

Variables	Reflective	Theoretical	Pragmatic
Reflective	.575a	–0.684	0.065
Theoretical	–0.684	0.552a	–0.420
Pragmatic	0.065	–0.420	.678a
Measure sample adequacy[a]			

Source: own

Table XV shows only one factor composed of three variables: reflective, theoretical and pragmatic; and its explanatory power expressed by its eigenvalues (2.068). The values in the first column reflect the factor loadings of each variable and the second column reveal how each variable is explained by the components. Thus, we see that the variable with the greatest weight is *theoretical*, followed by the *reflective* and finally pragmatic.

Table. Matrix of components

Variables	Component 1	Communalities
Reflective	0.848	0.719
Theoretical	0.919	0.844
Pragmatic	0.710	0.505
Eigenvalue	2.068	
Percentage of variance	68.924%	

Source: own

The results presented in previous paragraphs lead to think that the students who attend accounting at the Universidad Veracruzana, have a learning style that goes in the theoretical, reflective and pragmatic. This could be an indicator suggesting a significant correlation with the degree of financial education they have, given their profile. However it was not so, the statistical tests gave no evidence of a significant correlation between learning styles: theoretical, reflective, pragmatic and active versus the level of financial education, from the CONDUSEF test used, which range from "excellent money management" which was less than 50% (only 49% achieved this indicator).

H1.a: The learning style is correlated to the student's financial education level. Since the procedure of Pearson linear correlation calculating t and r, the following results were obtained (Table 16):

The results of the calculated statistical r y t, are not larger than the critical values of tables, so we do not have enough evidence to reject the null hypothesis, in other words, there is no correlation between learning styles and the degree of financial education.

Table 16. Statistical r y t

Indicator	r calculated	T calculated	r critical	T critical	Decision	
ACTIVE	-0.0272**	-0.0272**	0.196	1.972	No reject Ho	No reject Ho
REFLECTIVE	0.0715**	0.0715**	0.196	1.972	No reject Ho	No reject Ho
TEORETHICAL	-0.0536	-0.0536**	0.196	1.972	No reject Ho	No reject Ho
PRAGMMATIC	-0.1307**	-0.1307**	0.196	1.972	No reject Ho	No reject Ho

* Values of t with n-2 df.
**not significant

Source: own

H2: The majority of undergraduates show excellent care of the money.

Statements that identify:

        a). - Error Type I. b.) - Error Type II.

The decision criterion states:

        a). - Error type I. Rejects null hypothesis (Ho) P = 0.5

        b.) - Error type II. Do not reject null hypothesis (Ho) P> 0.5

Also reject *Ho* if: Calculated Z > Z critic (tables). Otherwise do not rejected

Then Null and Alternate hypotheses are represented:

        Ho: The majority of undergraduates do not show excellent care of the money.

Ha: The majority of undergraduates show excellent care of the money

Considering the results obtained in table IX, 49% is equal to: (200 cases * 49% = 98), resolving we have:

X= proportion of the sample, n= sample $\hat{P} = \dfrac{98}{200} = 0.49$

We obtain the Z value with the following equation:

$$Z = \frac{0.49 - 0.5}{\sqrt{\dfrac{(.5)(.5)}{200}}} = \frac{-0.01}{\sqrt{\dfrac{0.25}{200}}} = \frac{-0.01}{\sqrt{0.00125}} = \frac{-0.01}{0.035355339} = -0.28284$$

It takes the value of 0.3897 for Z = 0.28284 then we have 1-0.3897=0.6103, P value = 0.6103. The statistic test (Z=0.3897) is less than the critical level and since the P value of 0.6103 is greater than the significance level α = 0.05, there is no sufficient evidence to reject the null hypothesis. It is concluded that the university students analyzed, do not show an excellent care of their money according to CONDUSEF's test and statistical value Z.

Valor P= 0.6103

P= 0.5 ó Z= 0

$\hat{P}$ =0.49. ó Z= 0.28284
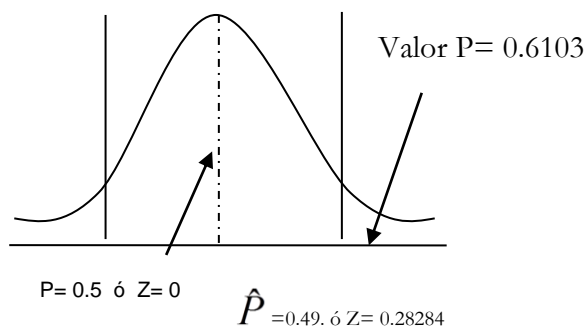
Research on financial education is becoming more frequent and has taken an important aspect of national and international agendas, because these times, of economic crises and instability of the markets, require better care of our assets, and the more scarce the tools, the greater the need to manage the resources properly. They play a very important role, those responsible for providing financial education; the universities, whether public or private, are who through their academics and scholars, many of them specialists in the field, are more likely to promote and develop ways to ensure equity of access to financial education. Financial education is very important and necessary to build confidence in the financial system, as it allows individuals to acquire basic skills that help them minimize the risk of being in debt, as well as their rights and obligations to acquire any financial instrument offered by banks. Thus it can be said that more financial education will generate an increase in asset accumulation and better management of these assets through proper and formal saving or investment systems, while promoting financial inclusion.

The results obtained in this research, show that there wasn't a significant correlation with an 'acceptable' level of financial literacy, neither an excellent management of money among students in Public Accounting from the Universidad Veracruzana, Mocambo Campus; despite prevailing theoretical learning styles, reflective and pragmatic, given the academic profile, age (18-22 years in 87.50% of the sample) gender prevalence (64.50% in women), race (the 95.50% Hispanic) and socioeconomic status (81% economically stable situation). The absence of an acceptable financial education is most likely due to the lack of an adequate approach to the formal financial system at an early age or information transmitted through the years by the people around them, in relation to non-users, generally due to ignorance of the instruments of the financial system.

Implications

The Universidad Veracruzana is the leading institution of higher education in the state of Veracruz. The public accounting student from the UV, as defined by the university itself, must be a professional with the knowledge and skills required to manage the economic resources of any entity. One might expect that a professional with this profile would have an acceptable level of financial education that would allow him or her not only to make the best decisions for their own benefit, but also for the overall economy. However, in this research the findings suggest that there is no a good level of financial literacy in the population studied. This fact is contrary to expectations, because the student who studies public accountant is expected to have financial knowledge in these subjects, all this, in considering the subjects which integrates the curriculum related to the field of finance. Therefore this finding should be an important indicator for the academic authorities of the *Universidad Veracruzana* for corrective actions in this respect.

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