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Between Income, Savings and Investment, How Do College Students Perceive Money Management?

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Abstract

The aim of the study is to evaluate the factorial solution that explains financial knowledge in the topics of income, savings, investment and how students perceive money management. For this purpose, the EFA and the SEM methodology are used. To obtain the information, a non-probabilistic sampling by self-determination was carried out, applying the instrument in electronic format and for the analysis; the EFA and SEM methodology was used. At the end of the estimated time for data collection, 596 participating students were achieved. The items of the variables income, savings, investment and money management from the scale used in Contreras (2016), were used. The main finding is the structure obtained from the confirmatory analysis, which presents acceptable indices of absolute goodness of fit, structural adjustment, and parsimony that allows us to understand how the student perceives income, savings, investment, and money management. The values obtained are acceptable based on the suggested theoretical criteria (RMSEA = 0,054; CMIN/DF = 2,749; GFI (,951), AGFI = ,926; PGFI = ,634; TLI = ,906; CFI = ,929; and parsimony: PRATIO = ,762; PNFI = ,681; PCFI = ,707). The result has practical implications for educational institutions, considering that in the academic training of students it is essential to encourage habits related to money. Considering that, economic income is a resource that they will have in their future when they work, then it is related to the habit of saving and investing, to this, we add the good and proper management of their personal finances, and finally, the cycle of promotion to savings.

Keywords: saving, credit, investment, money management.

1. Introduction

At the international level, the importance of providing access to the entire population to the use of available financial services is observed. That leads to promoting the increase in financial education (FE) worldwide to contribute to this purpose. However, despite the joint efforts that

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have been made, it has not been possible to increase the population's banking use as planned. The importance of the financial literacy (FL) and financial education (FE) in the international context is due to the current need to address the problem of poverty. Undoubtedly, the issue of FE continues to be in the academic discussion of researchers on the subject throughout the world.

Agasisti, Barucci, Cannistrà, Marazzina and Soncin (2023) recently carried out an experiment with college students in Italy, which consisted in the implementation of an innovative course on financial education topics. The course was applied online and after was compared to a traditional conference on the campus of the University. After a week in the tests prior to the course, an increase in the score of four points out of 10 was identified. In addition, they did not find the existence of significant differences between online and face-to-face learning, which evidently suggests that digital learning has a positive effect.

With the same idea, Sconti (2022) carried out an experiment on students (n = 650) of Generation Z also in Italy, which also involved the implementation of a FE program that they called "Futuro Sicuro" (sic). With the experiment, they obtain data in two experiments, one of them from the traditional FE program with an advisor and the other, derived from a digital FE program with web applications based on game-based learning. Subsequently, after three weeks, they evaluated the results and demonstrated that in both cases the level of knowledge increased, with a notable increase in the financial skills of all the participants.

On the other hand, Lusardi et al. (2021) reported that only 3 % increased FE in a 3-year study period (from 2017 to 2020), given that only this percentage managed to correctly answer topics related to their financial knowledge (FK). The increase in FE was observed more frequently in the female gender, as well as in people with a lower educational level and young people; Furthermore, in people who receive a low salary and in those who had a disability. Jamie (2019) also reported agreement with this study.

On the issue of FE, there have undoubtedly been constant changes in the globalized world, which brings with it risks that are difficult to foresee and consequently important measures must be taken in this regard. At the time, Lusardi and Mitchell (2011) developed a study in which they stated that financial decisions must be highly reasoned and must be informed. In their study they report important findings in this regard, for example, they point out that people who have greater financial education increase the probability of planning their retirement plan, but not when other instrumental variables intervene, in which retirement plans are dismissed by the people. Another important fact that they expose is the low level of FE in women, as well as that of the young and the elderly, all this compared to men and middle-aged people and, those with greater knowledge of financial issues.

In the Latin American context, Frisancho (2023) evaluates the effect of an intervention on behavior in the financial education class. At the end of the course, notable progress was observed by the students in financial topics. One of the significant changes was reflected in financial behavior measured by financial autonomy. In Mexico, significant changes are proposed in terms of school education, since in August 2023, materials alluding to FE will be included in textbooks, according to Wilfrido Pera Curiel, senior director of Condusef (by its acronym in English National Commission) for the Defense of Users of Financial Services in Mexico, in his speech in the week of Financial Education. The proposal is that the didactic materials of the educational offer of the Condusef be included in schools throughout the country as soon as possible (Torres, 2022).

A couple of years before, this proposal had been proposed to be carried out, but the phenomenon of the Pandemic caused by Covid-19 changed the plan, although it was possible to implement it in the CONALEP system and the Technological Universities, which was already an important advance. In this regard, we can point out that FE is a key or determinant issue in people's lives and very particular to young people, which will undoubtedly allow them to have more reasoned decisions in the management of their personal finance in the short, medium and long term. According to these arguments, and considering that the students are in advanced school cycles in the different careers, emerge the next question.

Question Research: What level of FK do university students have? In the specific case of savings, investment, income and money management? In addition, what is the confirmatory factorial model that best explains the relationship between income, savings, investing and money management?

Objective: Evaluate the factorial solution that explains FK in the income, savings, investment and money management. As well as, evaluate the best fit of the measurement model, from the absolute fit, structural fit and parsimony.

Hypothesis:

H1: There is a relationship $> .5$ between economic income and money management

H2: There is a $> .5$ relationship between saving-investment and money management

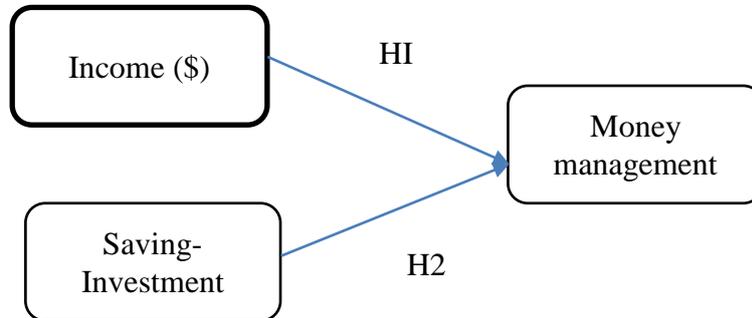


Fig. 1. Conceptual model

2. Literature review

There are various studies that have addressed the issue of financial education, one of them is a systematic and bibliometric study in which they evaluate 502 scientific articles that were published between 2000 and 2019 (Goyal, Kumar, 2020). The purpose of the study focused on identifying the most relevant aspects that have been documented in terms of financial education from three lines:

- a) The level of FE in different cohorts;
- b) The influence of the FE on planning and financial behavior;
- c) The impact of the FE.

The findings report evidence of a significant gap in some aspects, which are summarized in: financial planning and behavior, digital financial education, as well as tax and insurance knowledge.

The lack of financial knowledge towards certain basic products and services is undoubtedly a very delicate absence in people's knowledge, since they can make erroneous decisions that lead to an economic affectation. This can be slight or even very serious, since that can lead them to sell their most valued property, such as their home (Xue et al., 2020). In fact, financial concerns are closely related to financial illiteracy, which has led to greater indebtedness among people. In addition, it has been documented with significant results that financial education makes the difference between financial behavior and the use of financial instruments, the latter related to the level of financial inclusion (Swiecka et al., 2020). In the same way, it is related to savings, since, having a low level of financial inclusion, it is indicative that savings suffer a decrease and in many cases, a total absence of this. Although people with greater financial knowledge increase the probability of having formal and informal savings, they also prepare for retirement and acquire long-term financial plans, with the probability of acquiring private pension insurance (Niu et al., 2020).

It has been shown that sociodemographic factors influence in attitude, behavior and financial ability. An example of this is the work of Sahul and Jia (2020), who carried out a study in Malaysia. In their result, demonstrate that the socioeconomic factors, like marital status, income level, number of credit cards they have, ethnic origin and educational level, have influence the decision to pay credit cards. Douissa (2020) presented similar results in the study carried out on students at the University of Sharjah in the United Arab Emirates. The main finding show that the socioeconomic factors such as gender, educational level, financial inclusion, family income, among others, have influence in the behavior and financial ability.

On the other hand, compared to the Mexican student, Colombian students have high levels of financial knowledge about the use of credit cards, investments, savings, the topic of inflation, saving for retirement and diversification of risk (Ramos et al., 2020). The gender gap at an early university age has also been reflected in the American context, since prior to this they failed to develop financial skills within the home (Al-Bahrani et al., 2020). Some studies report a good level of FE, denoting that people between the ages of 15 and 16 have a medium to high range of financial knowledge, being 45,3 % and 43,8 % for each case (Swiecka et al., 2020). In relation to savings, the

perspective of economic income that will be had in the future, has been reported as a favorable attitude towards the care of personal finances in high school students ([García-Santillán, 2020](#)).

Other efforts to study these financial aspects is the work of Dinc, Cetin, Bulut and Jahangir (2021) who take up some important aspects that were suggested by DeVellis (2003) and carry out a study in which they design a scale to measure financial inclusion, which aligns with the requirements of the Islamic financial sector, including other sectors not related to the financial field, as well as those who are not familiar with financial practice. In the United States, Lusardi, Hasler and Yakoboski (2021) show that financial fragility is related to financial education and a large part of the American population is not prepared to face financial decisions to face a financial crisis such as Covid-19. The groups most susceptible to this financial fragility are African Americans and those with low incomes.

The relationships between demographic factors such as age, level of education, marital status and economic income have provided significant evidence, in the case of the pension plan ([Sembiring, Leon, 2021](#)), however, it has been shown that people with a higher level of FE tend to be more reckless ([Kawamura et al., 2021](#)). Likewise, sociodemographic factors such as age, gender, income level, marital status and education have an influence on the level of financial education in the young population; in addition, it is directly related to financial attitude and behavior ([Garg, Singh, 2018](#)). On the topic of FE, studies are frequently developed where parental income is integrated as a variable. These works have shown that students tend to have a better level of financial knowledge, which improves their financial attitude, since the learning they receive from their parents allows them to have less worry about paying student loans ([Aydin, Akben, 2019](#); [Fan, Chatterjee, 2018](#)).

Furthermore, financial socialization influences financial attitude and the teaching learning from parents to young people generates a favorable impact on the behavior of their children ([Zhu, 2018](#)). It is evident that there are still gaps to address in relation to financial knowledge, not only in developing countries, but also in those with greater development ([Klapper, Lusardi, 2019](#)) since studies have shown that only one in three adults have FK. However, not only sociodemographic factors have influenced, but also the characteristics of the context in which people develop ([Cucinelli et al., 2019](#)).

Unemployment, low-income level and lower educational level in single people are undoubtedly factors that determine financial illiteracy. Evidence of this is the work of De Beckker, De Witte & Van Campenhout (2019), in which they cover 12 countries (Belgium, Canada, Croatia, Estonia, Hong Kong, Jordan, Latvia, Malaysia, Netherlands, New Zealand, Thailand and the United Kingdom) whose findings suggest that single people, with the characteristics previously referred to, have low levels of financial literacy. Otherwise, people with a higher educational level have greater knowledge, better behavior and a better financial attitude, as demonstrated by the results in the case of participants from Belgium, Canada, Hong Kong and New Zealand.

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Estonia, Hong Kong, Jordan, Latvia, Malaysia, Netherlands, New Zealand, Thailand and the United Kingdom) whose findings suggest that single people, with the characteristics previously referred to, have low levels of financial literacy. Otherwise, people with a higher educational level have greater knowledge, better behavior and a better financial attitude, as demonstrated by the results in the case of participants from Belgium, Canada, Hong Kong and New Zealand. About the behavior in economies in transition, the literature provides evidence that suggests that FE is lower, compared to industrial economies. Again, the elderly, those with less education and income, have a low level of literacy and this result in the frequently financial mistakes.

A similar case is observed in women and people who do not speak the language of the country where they reside and their level of reading and writing is deficient (Karakurumet al., 2018), this results in a low level of financial knowledge. However, the literature has shown that self-employment influences the level of FE; otherwise, with a lower level, the tendency will be to work as a salaried employee (Ćumurović, Hyll, 2018). Similarly, some studies have measured the level of FK in managers or owners of small businesses. Their results did not prove that FK is related to the performance of their activities, although in decision making it was shown that it affects knowledge, at the EF level (Eniola, Entebang, 2017).

These arguments allow us to understand the existing gap in FE, which has several edges. On the one hand, the difference between genders has been documented, including the knowledge acquired at an early age from home, the effect of socioeconomic variables on FK, just to name a few aspects. Therefore, for this study it is relevant to be able to understand the relationship that exists between the incomes that the person will receive in the future, savings and investment and money management, in the particular case of students. Now the method to develop the empirical study is presented:

Design and method

The study is of a non-experimental, cross-sectional, exploratory and confirmatory design, which focuses on evaluating the factorial solution that explains financial knowledge in relation to income, savings, investment and money management, in order to evaluate the best fit of the measurement model, based on absolute fit, structural fit and parsimony. The context in which the research is carried out is in Mexico, in a higher education institution, where authorization was given to apply the survey.

Using a non-probabilistic self-determination sample, the instrument was designed in electronic format and the link was sent to the students so that they could answer the survey. At the end of the term for the application of the test, 596 cases were obtained.

The items of the variables under study, were taken of the scale used by Contreras (2016), which was validated using global Cronbach's alpha ($\alpha=,742$), for each items $>,7$ (see annex 1) and multivariate normality is verified with asymmetry and kurtosis according to Kim's (2013) criteria. The database is analyzed using AFE with Varimax rotation and principal component extraction. Subsequently, with the factorial solution of the exploratory model, the confirmation of the model is carried out using the SEM methodology. In addition, Bayesian analysis is used to verify the maximum likelihood of the parameters of the variables under study. IBM software, SPSS AMOS v23, is used at all times.

3. Data analysis

The descriptive results of the participants' profile are shown in Table 1.

Table 1. Descriptive of the profile

Variable		Frequency	Percentage
Gender	Male	307	51,5
	Female	289	48,5
Age	17 years old	1	0,2
	18	61	10,2
	19	130	21,8
	20	167	28,0
	21	134	22,5

	22	65	10,9
	23	21	3,5
	24	8	1,3
	25	2	0,3
	29	7	1,2
Civil Status	Free union	62	10,4
	Separate	14	2,3
	Divorce	1	0,2
	Marry	9	1,5
	Single	502	84,2
Labor Status	Only study	425	71,3
	Study and work	169	28,4
	Looking for work	2	0,3
Income \$\$	Less to 3 thousand	143	24,0
	from 3 to 4,999	21	3,5
	from 5 to 7,999	7	1,2
	More than 20 thousand	3	0,5
	NA	422	70,8
Medical Services	IMSS	321	53,9
	ISSSTE	172	28,9
	Hospital Pemex	7	1,2
	Without	11	1,8
	Unknown	85	14,3
Family relationship	Husband or Wife	28	4,7
	Song	393	65,9
	Grand song	34	5,7
	other	45	7,6
	Without relationship	38	6,4
	NA	58	9,7

Table 2. Bartlett test of sphericity

Measure Kaiser-Meyer-Olkin of sampling adequacy		,793
Aprox. Chi-squared		4180,675
Bartlett Test of sphericity	<i>df</i>	595
	<i>Sig.</i>	<,001

Table 3. Rotated component matrix

Items of the rotated scale	Income\$	Money management	Saving and investment
V5. Do you consider that the main source of income for students is provided by a part-time job.	,731		
V3. The tax increase affects the stability of the companies and increases the instability of the employees.	,733		
V2. Taking extracurricular training courses, in a job, results in earning more money because it is more valuable to your company.	,713		
V4. One of the main sources of income for adults between the ages of 20 and 35 are wages, salaries and tips.	,674		

V6. The amount paid in taxes is proportional to the salary received.	,508
V9. There is more life insurance coverage for women.	,624
V13. The income you obtain must be distributed for transportation, clothing, telephone service, and footwear	,588
V14. For savings, a percentage of the amount received must be allocated.	,583
V15. You consider that from the upper secondary education you should manage your money.	,558
V11. Consider that the health insurance you receive is from your parents.	,528
V10. Health insurance is suspended if the person is unemployed.	,508
V18. Do you consider that you are familiar with the financial products and services offered by Financial Institutions in terms of investments?	,730
V17. Saving is money that is reserved for emergencies.	,730
V16. Savings must be made depending on the price of what is to be purchased.	,627
V19. Investment fund operations are carried out in financial institutions	,525

As can be seen, in Table 2 the values of the sample adequacy measure (KMO) is significant (.793), as well as the Chi-square value (4180,675) with 595 degrees of freedom and p-value < .001 in the matrix of rotated component. Using the maximum likelihood method, the initial measurement model described in Table 3, was validated and confirmed (Jöreskog, Sörbom, 1986). For this process, the SEM methodology is used, understanding that there are several fit indices to evaluate structural models (Hu, Bentler, 1995; Hu, Bentler, 1999; Mac Callum et al., 1996). Some researchers suggests using the indicators $\chi^2=$ with *df*, p-value, CFI, GFI, TLI, RMSEA (Schreiber et al., 2006), without dismissing the rest of the indices obtained with the AMOS software, only that the theoretical criteria established in these SEM methodologies must be taken into account.

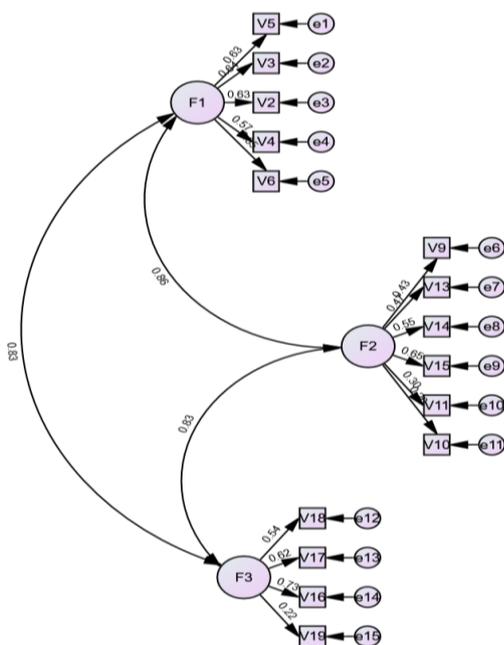


Fig. 1. Model 1

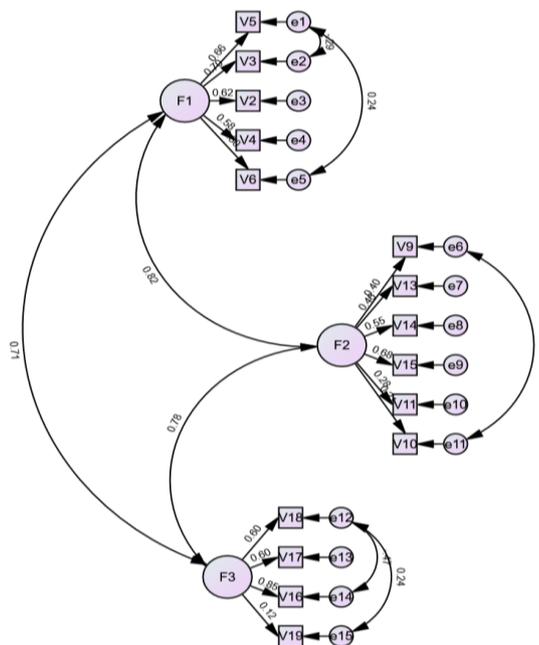


Fig. 2. Model 2

Figure 1 shows the trajectories of the three constructs with a significant relationship between the three constructs (> .8), however, the loads of the estimators in some cases are very low (v19, v11 and v10). As Carmine and Mclver (1981) suggest, CMIN/DF values should be in the range of 2,1 to 3,1, although there are criteria that have suggested that less than 2 represents a good fit (Ullman,

2006). In the case of model 1, the CMIN/DF value of 5,216, as well as RMSEA (0,084) do not represent a good fit, although the parsimony presents indicators $>.5$ (PRATIO ,829; PNFI ,646; PCFI ,673).

For model 2 of Figure 2, we proceed to correlate the errors e1 with e2, e1 with e5 of the construct F1 (called Income \$), in the construct F2 (money management) e6 is related to e11 and finally in the construct F3 (Savings) e12 is correlated with e14 and e12 with e15. The CMIN/DF values 3.437, as well as RMSEA (.064); do not adjust to the expected values, although parsimony does show values that exceed the threshold $>.5$ (PRATIO ,781; PNFI ,674; PCFI ,701).

As mentioned above, now a third model is run where e10 is correlated with e11 of the latent variable F2 (Money Management) and e14 with e15 of the latent variable F3 (Savings). Now CMIN/DF 2.749 values are obtained, as well as RMSEA (0,054); which show a better fit, parsimony shows values that exceed the threshold $>.5$ (PRATIO,762; PNFI ,681; PCFI ,707). The goodness of fit index (GFI) shows us the variability explained by the measurement model, which presents very acceptable values (.951). According to Jöreskog and Sörbom (1986), the closer to 1 its fit will be more perfect versus close to zero would show a poor fit of the model, hence any value $>.9$ is a fit that is considered acceptable.

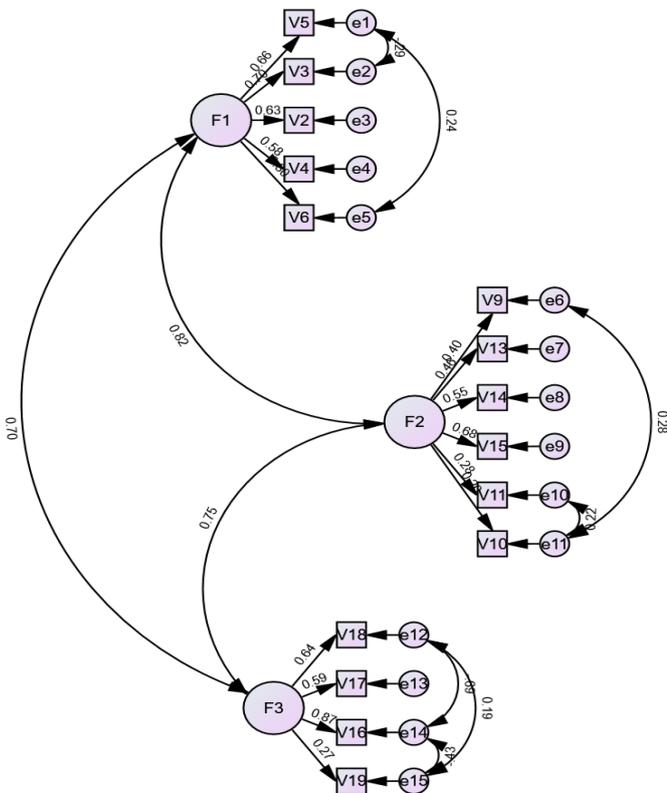


Fig. 3. Model 3

Table 3. Summary of the goodness-of-fit measures

	RMSEA	CMIN/D F	RMR	GFI	AGFI	PGFI	TLI	CFI	PRATIO	PNFI	PCFI
Model 1	,084	5,216	,097	,90	,862	,653	,774	,813	,829	,646	,673
Model 2	,064	3,437	,082	,93	,906	,640	,86	,89	,781	,674	,701
Model 3	,054	2,749	,071	,951	,926	,634	,90	,92	,762	,681	,707

According to the theoretical criteria, model 3 shows the best fit. The CMIN/DF indicator (2,749) is in the suggested range 2,1 to 3,1 (Carmin, McIver, 1981; Kline, 1998; Ullman, 2006), although less than 2 would also reflect a good fit. In relation to the GFI and AGFI, values $>.90$

close to 1 are suggested, otherwise it would indicate a poor fit of the model. Model 3 presents an acceptable GFI (.951) and AGFI (.926), as well as the RMSEA indicator (0,54), which represents the approximation error of the model with reality. We will remember that the RMSEA, also called RMSE, does not require comparison with a null model, it is even the least affected by the sample size, but when the samples are small, it overestimates the goodness of fit (Fanet al., 1999).

In this regard, some literature suggests other values, for example, Hu and Bentler (1999), suggest values $\leq 0,06$; Schumacker and Lomax (2004) refer that it is equal to or less than 0,05 for a perfect fit, however, in the literature there are different proposals, which establish ranges of $<0,10$ as adequate adjustments (Yilmaz, 2018; Yalçiner et al., 2019). For our study, the RMSEA value (.054) is good. In support, the mean square error rate (RMR) of 0,071 indicates a good fit as it is closer to zero than one, which is a good indication that the variances and covariance's differ from the estimates obtained in the final model. Finally, the parsimony measures exceed the suggested theoretical threshold of 0,5 to 0,7 PRATIO (.762), PVFI (.681) and PCFI (.707).

4. Discussion

To answer the question and to know, how students perceive the savings and investment, income and money management, we obtained the follow result: As demonstrated in the final measurement model that show the best fit, the factor called Income\$ represents the largest component. About Income\$, they consider that the main source of income for students is provided by a part-time job, as well, the tax increase affects the stability of the companies and increases the instability of the employees. In addition, taking extracurricular training courses, in a job, results in earning more money because it is more valuable to their company. One of the main sources of income for adults between the ages of 20 and 35 are wages, salaries and tips. The amount paid in taxes is proportional to the salary received. This study is consistent with the previous work of García-Santillán (2020) in relation to the perspective of economic income, who reported as a favorable attitude towards taking care of personal finances in high school students. About Hypothesis, H1: There is a relationship between economic income and money management ($> .5$), the final model show a significant relation between Income\$ and Money management (0,82).

About the hypothesis H2: There is a relationship between saving-investment and money management ($> .5$) the final model show a significant relation between saving-investment and Money management (0,75). The factor Money management, show how student perceive this variable. They refers that there is more life insurance coverage for women, also, the income obtained for transportation, clothing, telephone service, and footwear must be distributed. In addition, it is important to allocate an amount for savings from the income obtained, if possible from an early age when studying high school. It is convenient to manage the money since the insurance they currently receive comes from their parents and in the future, they will have to pay for it, otherwise if they are unemployed, they will have to suspend it. That is why the importance of money management, since priority is given to savings and health care insurance. In relation to insurance, the systematic and bibliometric study developed by Goyal and Kumar, (2020) report evidence of a significant gap in some aspects, including knowledge of insurance.

They also understand the issue of savings and investment, since they know the financial products and services offered by Financial Institutions in terms of investments. On the subject of savings, they consider that it is for emergencies, or for example, when they buy something, they take into account the lowest price to save something. In addition, they understand that investment funds are offers in financial institutions. Regarding financial knowledge, there are studies that have documented these findings on financial knowledge and how this favors formal and informal savings, retirement plans, pensions and insurance (Niu et al., 2020). Otherwise, studies have been documented that have explored financial behaviors, where low-income unemployed people lack financial knowledge (De Beckker et al., 2019), but not in people with a high educational level. , who show a high percentage of knowledge, financial behavior and financial attitudes. In addition, the existing gap between economies in transition and industrial economies has been reported, where the level of financial knowledge is different between them (Stolper, Walter, 2017). In these studies, age has been considered as a variable that has made a difference. In relation to older adults and low-income youth, they show low levels of financial literacy and, consequently, make financial mistakes more frequently.

5. Conclusion

Finally, each study contributes something important to be analyzed in its proper dimension. This work allowed us to know the financial knowledge that the students surveyed have, and how has favored the management of their personal finances. The findings on the subject of savings, the importance given to the subject of insurance, to name a few, are interesting, although these results differ from other studies carried out in other contexts in different study populations.

6. Future research

The results of the study allow us to identify the relationship between the variables economic income (Income\$), savings-investment and money management. It is undoubtedly a logical relationship, since on the one hand there is income and on the other the option of saving or investing, the money management variable being the link of this relationship. However, other issues can be integrated into the construct analyzed in this work, for example, including the variables: budgets, insurance, pensions and Afores in the case of Mexico, which will allow us to build strategies to redesign the plans of study within educational institutions.

7. Ethics statement

This study was carried out in accordance with the recommendations of Code of Ethics of UCC Business School and Tecnológico Nacional de México. The Ethics Committee approved the protocol for Research, of the Division of Graduate Studies and Research. In accordance with the Declaration of Helsinki, all parents gave written informed consent for student' participation in the study.

8. Conflicts of interest

The author declare no conflict of interest.

9. Author contributions

The author has made a substantial, direct and intellectual contribution to the work, and approved it for publication.

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This research received no external funding.

References

- Agasisti et al., 2023 – Agasisti, T., Barucci, E., Cannistrà, M., Marazzina, D, Soncin, M. (2023). Online or on-campus? Analyzing the effects of financial education on student knowledge gain. *Evaluation and Program Planning*. 98: 102273. DOI: <https://doi.org/10.1016/j.evalprogplan.2023.102273>
- Al-Bahrani et al., 2020 – Al-Bahrani, A., Buser, W., Patel, D. (2020). Early Causes of Financial Disquiet and the Gender Gap in Financial Literacy: Evidence from College Students in the Southeastern United States. *J Fam Econ*. 41: 558-571. DOI: <https://doi.org/10.1007/s10834-020-09670-3>
- Aydin, Akben Selcuk, 2019 – Aydin, A.E., Akben Selcuk, E. (2019). An investigation of financial literacy, money ethics and time preferences among college students: A structural equation model. *International Journal of Bank Marketing*. 37(3): 880-900. DOI: <https://doi.org/10.1108/IJBM-05-2018-0120>
- Carmines, McIver, 1981 – Carmines, E.G., McIver, J.P. (1981). Analyzing Models with Unobserved Variables: Analysis of Covariance Structures. In G. W. Bohrnstedt, & E. F. Borgatta (Eds.), *Social Measurement: Current Issues*. Beverly Hills: Sage Publications, Inc. Pp. 65-115.
- Contreras Rodríguez, 2016 – Contreras Rodríguez, B.A. (2016). La realidad de la educación financiera como elemento de inclusión en escenarios de educación media superior. Un estudio empírico en la región de Veracruz. [The reality of financial education as an element of inclusion in upper secondary education scenarios. An empirical study in the Veracruz region]. Doctoral Thesis, Cristóbal Colón University, Veracruz, México. [in Spanish]
- Cucinelli et al., 2019 – Cucinelli, D., Trivellato, P., Zenga, M. (2019). Financial Literacy: The Role of the Local Context. *Journal of Consumer Affairs*. 53(4): 1874-1919. DOI: <https://doi.org/10.1111/joca.12270>

- Ćumurović, Hyll, 2018 – Ćumurović, A., Hyll, W. (2018). Financial Literacy and Self-Employment. *Journal of Consumer Affairs*. 53(2): 455-487. DOI: 10.1111/joca.12198
- De Beckker et al., 2019 – De Beckker, K., De Witte, K., Van Campenhout, G. (2019). Identifying financially illiterate groups: An international comparison. *International Journal of Consumer Studies*. 43(5): 490-501. DOI: 10.1111/ijcs.12534
- De Vellis, 2003 – De Vellis, R.F. (2003). *Scale Development: Theory and Applications* (2nd ed., Vol. 26). Thousand Oaks, CA: Sage Publications.
- Dinc et al., 2021 – Dinc, Y., Çetin, M., Bulut, M., Jahangir, R. (2021). Islamic financial literacy scale: an amendment in the sphere of contemporary financial literacy. *ISRA International Journal of Islamic Finance*. 13(2): 251-263. DOI: <https://doi.org/10.1108/IJIF-07-2020-0156>
- Douissa, 2020 – Douissa, I.B. (2020). Factors affecting College students' multidimensional financial literacy in the Middle East. *International Review of Economics Education*. 35: 100173. DOI: 10.1016/j.iree.2019.100173
- Eniola, Entebang, 2017 – Eniola, A.A., Entebang, H. (2017). SME Managers and Financial Literacy. *Global Business Review*. 18(3): 559-576. DOI: <https://doi.org/10.1177/0972150917692063>
- Fan, Chatterjee, 2019 – Fan, L., Chatterjee, S. (2019). Financial Socialization, Financial Education, and Student Loan Debt. *J Fam Econ*. 40: 74-85. DOI: <https://doi.org/10.1007/s10834-018-9589-0>
- Fan Xitao, Lin, 1999 – Fan Xitao, B.T., Lin, W. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*. 6(1): 56-83. DOI: 10.1080/10705519909540119
- Frisancho, 2023 – Frisancho, V. (2023). Is School-Based Financial Education Effective? Immediate and Long-Lasting Impacts on High School Students. *The Economic Journal*. 133(651): 1147-1180. DOI: <https://doi.org/10.1093/ej/ueaco84>
- Garcia-Santillan, 2020 – Garcia-Santillan, A. (2020). Knowledge and application toward financial topics in high school students: a parametric study. *European Journal of Educational Research*. 9(3): 905-919. DOI: <https://doi.org/10.12973/eu-jer.9.2.905>
- Garg, Singh, 2018 – Garg, N., Singh, S. (2018). Financial literacy among youth. *International Journal of Social Economics*. 45(1): 173-186. DOI: <https://doi.org/10.1108/IJSE-11-2016-0303>
- Goyal, Kumar, 2020 – Goyal, K., Kumar, S. (2020). Financial literacy: A Systematic Review and Bibliometric Analysis. *International Journal of Consumer Studies*. 45(1): 80-105. DOI: 10.1111/ijcs.12605
- Hu, Bentler, 1995 – Hu, L.T., Bentler, P.M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling, Concepts, issues and application* (1 ed.). Thousand Oaks, CA: Sage.
- Hu, Bentler, 1999 – Hu, L.T., Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*. 6(1): 1-55. DOI: 10.1080/10705519909540118
- Jamie, 2019 – Jamie, W. (2019). Financial Education and Financial Literacy by Income and Education Groups. *Journal of Financial Counseling and Planning*. 30(1): 132-141. DOI: 10.1891/1052-3073.30.1.132
- Jöreskog, Sörbom, 1986 – Jöreskog, K.G., Sörbom, D. (1986). *LISREL VI: Analysis of Linear Structural Relationships by Maximum Likelihood and Least Squares Methods*. Mooresville, IN: Scientific Software, Inc.
- Karakurum-Ozdemir et al., 2019 – Karakurum-Ozdemir, K., Kokkizil, M., Uysal, G. (2019). Financial Literacy in Developing Countries. *Soc Indic Res*. 143: 325-353. DOI: <https://doi.org/10.1007/s11205-018-1952-x>
- Kawamura et al., 2021 – Kawamura, T., Mori, T., Motonishi, T., Ogawa, K. (2021). Is Financial Literacy Dangerous? Financial Literacy, Behavioral Factors, and Financial Choices of Households. *Journal of the Japanese and International Economies*. 60: 101131. DOI: 10.1016/j.jjie.2021.101131
- Kim, 2013 – Kim, H.Y. (2013). Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restor Dent Endod*. 38(1): 52-54. DOI: 10.5395/rde.2013.38.1.52

Klapper, Lusardi, 2019 – Klapper, L., Lusardi, A. (2019). Financial literacy and financial resilience: Evidence from around the world. *Financial Management*. 49(3): 589-614. DOI: 10.1111/fima.12283

Kline, 2005 – Kline, R. (2005). Principles and practice of structural equation modeling. New York: Guilford Press.

Lusardi, Mitchell, 2011 – Lusardi, A., Mitchell, O. (2011). Financial literacy around the world: An overview. *Journal of Pension Economics & Finance*. 10(4): 497-508. DOI: 10.1017/S1474747211000448

Lusardi et al., 2021 – Lusardi, A., Hasler, A., Yakoboski, P.J. (2021). Building up financial literacy and financial resilience. *Mind Soc*. 20: 181-187. DOI: <https://doi.org/10.1007/s11299-020-00246-0>

Niu et al., 2020 – Niu, G., Zhou, Y., Gan, H. (2020). Financial literacy and retirement preparation in China. *Pacific-Basin Finance Journal*. 59: 101262. DOI: 10.1016/j.pacfin.2020.101262

Ramos et al., 2020 – Ramos, J.J., Garcia, A., Molchanova, V.S. (2020). Financial Literacy Level on College Students: A Comparative Descriptive Analysis between Mexico and Colombia. *European Journal of Contemporary Education*. 9(1): 126-144. DOI: 10.13187/ejced.2020.1.126

Sahul, Jia, 2020 – Sahul, F., Jia, Y. (2020). Financial literacy, money management skill and credit card repayments. *International Journal of Consumer Studies*. 45(2): 235-247. DOI: 10.1111/ijcs.12614

Schreiber et al., 2006 – Schreiber, J.B., Nora, A., Stage, F.K., Barlow, E.A., King, J. (2006). Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *The Journal of Educational Research*. 99(6): 323-338. DOI: 10.3200/joer.99.6.323-338

Schumacker, Lomax, 2004 – Schumacker, R.E., Lomax, R.G. (2004). A Beginner's Guide to Structural Equation Modeling. Second Edition, and Lawrence Erlbaum Associates.

Sconti, 2022 – Sconti, A. (2022). Digital vs. in-person financial education: What works best for Generation Z? *Journal of Economic Behavior & Organization*. 194: 300-318 DOI: <https://doi.org/10.1016/j.jebo.2021.12.001>

Sembing, Leon, 2021 – Sembing, M.R.P., Leon, F.M. (2021). The Influence of Demographics Factor on Pension Planning and Financial Literacy of Private Employee. *Business and Entrepreneurial Review*. 21(1): 131-152. DOI: <https://doi.org/10.25105/ber.v21i1.9230>

Stolper, Walter, 2017 – Stolper, O.A., Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *J Bus Econ*. 87: 581-643. DOI: <https://doi.org/10.1007/s11573-017-0853-9>

Swiecka et al., 2020 – Swiecka, B., Yesildag, E., Özen, E., Grima, S. (2020). Financial Literacy: The Case of Poland. *Sustainability*. 12(2): 700. DOI: <https://doi.org/10.3390/su12020700>

Torres, 2022 – Torres, Y. (2022). Incluirán educación financiera en ciclo escolar 2023-2024 [They will include financial education in the 2023-2024 school year]. *El Economista, Serie Finanzas personales*. [Electronic resource]. URL: <https://shorturl.at/avKNO> (date of access: 26.05.2023). [in Spanish]

Ullman, 2006 – Ullman, J.B. (2006). Structural Equation Modeling: Reviewing the Basics and Moving Forward. *Journal of Personality Assessment*. 87: 35-50. DOI: http://dx.doi.org/10.1207/s15327752jpa8701_03

Xue et al., 2020 – Xue, R., Gepp, A., O'Neill, T. J., Stern, S., Vanstone, B.J. (2020). Financial literacy and financial strategies: The mediating role of financial concerns. *Australian Journal of Management*. 46(3). DOI: <https://doi.org/10.1177/0312896220940762>

Yalçiner et al., 2019 – Yalçiner, N., Türkmen, S.N., Irmak, H., Tavsanli, N.G., Elma, F. (2019). The validity and reliability of the Turkish Form of Recovery Process Inventory. *Anatolian J. Psychiatr*. 20(1): 32-40. DOI: <https://doi.org/10.5455/apd.19601>

Yilmaz, 2018 – Yilmaz, H. (2018). Measuring egocentric, adaptive and pathological forms of selfishness: scale adaptation study. *J Acad Soc Sci*. 6(74): 45-57. DOI: <http://dx.doi.org/10.16992/ASOS.13889>

Zhu, 2018 – Zhu, A.Y.F. (2018). Parental socialization and financial capability among Chinese adolescents in Hong Kong. *Journal of Family and Economic Issues*. 39(4): 566-576. DOI: <https://doi.org/10.1007/s10834-018-9584-5>

Appendix 1

Table 1. Item Total Statistics

	Mean of scale if item is deleted	Scale variance if item is deleted	Total item correlation corrected	Cronbach's alpha if item is deleted
Gender	147.5798	265.635	-.140	.746
Age	128.7714	260.476	.006	.750
CivilStatus	143.6874	253.488	.144	.742
LaborStatus	147.7613	265.068	-.097	.745
Income\$\$\$	143.7361	257.861	-.014	.764
Medical Service	146.8134	267.381	-.119	.763
Family relationship	146.2252	269.491	-.159	.759
V1	147.2504	263.515	-.012	.744
V2	145.7176	244.822	.450	.727
V3	145.9261	244.382	.462	.727
V4	145.8874	245.417	.401	.729
V5	145.7176	244.449	.470	.727
V6	145.7513	251.036	.312	.734
V7	145.8723	258.798	.086	.743
V8	145.7597	254.166	.225	.737
V9	145.5294	246.317	.386	.730
V10	145.9445	252.780	.264	.736
V11	145.9395	250.596	.295	.734
V12	145.8706	252.345	.233	.737
V13	145.7395	246.728	.382	.730
V14	145.6723	250.025	.306	.734
V15	145.6034	246.011	.392	.729
V16	145.5193	244.523	.424	.728
V17	145.6504	247.888	.358	.731
V18	145.6420	246.725	.388	.730
V19	145.9664	251.511	.289	.735
V20	145.8252	249.239	.337	.732
V21	146.2571	258.747	.076	.744
V22	146.0891	251.566	.240	.737
V23	145.8773	249.677	.290	.734
V24	145.8891	250.728	.288	.735
V25	146.0521	254.656	.174	.740
V26	145.9529	251.334	.280	.735
V27	145.9227	248.573	.364	.731
V28	145.8773	251.219	.303	.734
V29	145.8992	250.862	.301	.734
V30	145.8555	251.208	.294	.734
V31	145.7496	250.279	.293	.734
V32	145.9782	252.893	.237	.737
V33	146.3311	257.686	.106	.743
V34	146.3277	255.268	.162	.740
V35	146.2689	251.507	.273	.735