

## Analysis of financial literacy in high school education: case of study Bucaramanga – Colombia

Jose Alonso Caballero Márquez<sup>a</sup>, Andrés Mauricio Moreno Zarta<sup>b</sup>, Martha Liliana Torres Barreto<sup>c</sup>

<sup>a</sup>Industrial Engineer, M.Sc. in Industrial Engineering, PhD (s) Science of Administration. Professor and researcher at Universidad Industrial de Santander. Bucaramanga, Colombia. E-mail: jose.caballero@correo.uis.edu.co, <sup>b</sup>Industrial Engineer, Universidad Industrial de Santander. Bucaramanga, Colombia. E-mail: andresmmz07@gmail.com <sup>c</sup>Systems Engineer, M.Sc. in Industrial Economics, PhD in Economics Sciences. Professor and researcher at Universidad Industrial de Santander. Bucaramanga, Colombia. E-mail: mltorres@uis.edu.co.

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### Abstract

*Financial literacy is well-known as a crucial skill today. Since an early age, people are exposed to the management of financial products and digital platforms, which have facilitated access to financial services. However, there is a prominent lack of knowledge about how to manage them wisely. The lack of financial knowledge and proper education in this regard boost people to make financial mistakes that finally impact their decision making process. For this reason, the teaching of financial issues has taken on an important role in the educational policies in many countries. This process is quite important for young people because it will provide them the proper tools to making the right decision about managing financial products and services in their adult life. Therefore, the present research aims to study the level of financial literacy among high school students. To this end, an internationally validated diagnostic tool was identified for determining the level of financial literacy, to establish a baseline as recommended by several authors. This tool was applied to high school students in the city of Bucaramanga (Colombia) and its metropolitan area. Higher education institutions involved contemplated in their Institutional Educational Project (PEI) a training in economics and finance to determine students' levels of financial literacy. Based on the obtained results, the level of financial literacy of the students was assessed. The findings show the need to join forces in the implementation of financial education in Colombia, through the articulation of stakeholders in the development of a comprehensive educational program to achieve the desired objectives, as well as the important role of parents' involvement in the implementation of these programs. Consequently, the research recommends*

*the implementation of new policies to evaluate the performance of financial education in the country and its real effect on people's knowledge and financial behavior.*

**Keywords:** *Financial literacy, Financial education, High school education.*

**Topic:** *Education in Economy, Management and Marketing*

## **Introduction**

The teaching of financial subjects has become a crucial topic for the educational policies of many countries, due to the benefits that it provides, which has been driven by economic organizations in school scenarios (European Commission, 2007; Fernández-Larragueta, Almagro-Lominchar, & Fernández Sierra, 2019). This seeks to make people financially literate, ensuring the long-term growth and stability of economies, which leads to an increase in the quality of life of those who make them up.

This type of literacy is recognized as a basic skill, indispensable for the individual of the 21st century (Kubak, Tkacova, Androniceanu, Tvaronavičienė, & Huculova, 2018; Lusardi, 2015; OECD, 2012). It is considered that a financially literate person will make correct decisions about his/her resources, due to he/she is well informed and aware about his/her interests in long term (Bruhn, Leão, Legovini, Marchetti, & Zia, 2016; Lusardi & Mitchell, 2013). This will enable him/her to develop positive attitudes towards fundamental issues such as savings and planning, thus minimizing his/her risk of impulsively acquiring informal loans at high interest rates (Xiao & O'Neill, 2016). In contrast, people with a low level of financial literacy are less likely to save, invest and think about their economic future (Lusardi, 2015; Villagómez, 2016).

At the international level, the Organization for Economic Cooperation and Development (OECD) stands out for its leadership in studies related to Financial Literacy. OECD's studies in different regions around the world seek to provide information to each government to the establishment of public policies in educational terms. This information is intended to be aligned with the real needs of each population, in order to promote the inclusion of a financial education subject in schools (Collins & Odders-White, 2015; Lusardi, 2015; Solomon, Nhete, & Sithole, 2018). It is well-known that financial inclusion is not only needed in developed countries, but also is required in the developing countries, due to their greater needs in economic terms, quality of life and financial stability. For researchers, it has become crucial to provide financial education to young people, due to adolescence is the stage where habits and customs are created in every aspect of life, and where teenagers are most of his time focused on their education (Batty, Collins, & Odders-White, 2015). In that sense, having financial skills will be quite important for their adult life to face the challenges posed by an advanced financial system made up by a great diversity of products and services.

## **Methodology**

The literature related to Financial Literacy identifies that it is divided into three main components: financial knowledge, financial attitude and financial behavior (Hung, Parker, & Yoong, 2009). It is therefore necessary to measure these components to evaluate an individual's financial literacy. As mentioned above, the OECD has taken the lead in global field studies about this topic, using a baseline survey called "OECD/INFE TOOLKIT FOR MEASURING FINANCIAL LITERACY AND FINANCIAL INCLUSION". In Latin America region, this tool has been used by several authors, such as Villagómez (2016) who through his research "Financial literacy in young high school students in the Metropolitan Zone of the Valley of Mexico", made an adaptation of the instrument used by the OECD, making it available in Spanish language, which avoids translation errors that can alter the results.

The survey evaluates the three components of financial literacy. The financial knowledge component is evaluated with seven questions about financial concepts such as savings, simple interest, compound interest management, diversification of risk and knowledge of the cost-of-living concept. In addition, within these seven questions, there are three used by Lusardi and Mitchell (2013), which have been widely used in many instruments at the international level, allowing the comparison of the results. On the other hand, the rating of the component is determined by giving one point per correct answer, so the rating scale for the financial knowledge component ranges from 0 to 7.

It should be clarified that within the answer options for this component, there is the "I don't know" option in each question. The aim of this answer option is to avoid random answers that conclude in a correct answer. Moreover, students are told that marking this option will not negatively affect the grade, so this option is more desirable when the student does not have a clear knowledge of the subject. Furthermore, the financial attitude is evaluated through three statements, where the student must assign a grade from 1 to 5, the rating of this component is the average of the three answers given in the statements. Finally, the financial performance component is divided into two sections. The first section consists of four statements rated from 1 to 5, where a point will be assigned per statement to the student who qualifies the statement with 4 or 5. The second section have five questions, where the point shall be assigned to the student showing good saving behaviour, a share in his/her family nucleus, good saving performance and good management of his/her financial resources.

The final score indicates the level of financial literacy the evaluated students. As mentioned above, it is the sum of the score obtained in the three components: Financial knowledge, financial attitude and financial behavior (OECD/INFE, 2018). The total rating scale ranges from 0 to 21, according to the OECD guidelines, those who achieve a score equal to or greater than 70% of correct answers can be considered financially literate. For the application of the tool, it was decided to work with schools located in the city of Bucaramanga and its

metropolitan area, in the region of Santander, Colombia. Likewise, the schools chosen for the study were those that include deepening academic components in accounting, finance and economic. At the end, a total of 514 surveys were applied, as shown in Table 1.

**Table 1. Sample characteristics**

	<b>Total</b>	<b>Percentage</b>		<b>Total</b>	<b>Percentage</b>
<b>Gender</b>			<b>Age (years old)</b>		
Male	207	40,27%	13	3	0,58%
Female	307	59,73%	14	47	9,14%
<b>Type of school</b>			15	178	34,63%
Public	403	78,40%	16	187	36,38%
Private	111	21,60%	17	84	16,34%
<b>School grade</b>			18	15	2,92%
Grade 10°	272	52,92%	<b>Socio-economic level*</b>		
Grade 11°	242	47,08%	1	51	9,92%
			2	137	26,65%
			3	204	39,69%
			4	91	17,70%
			5	20	3,89%
			6	11	2,14%

\*Socio-economic level 1 includes people with a minimum salary income a month. The socio-economic level 6 groups all people with the highest income in the country.

## Results

The results obtained of the application of the specialized survey to school students are presented below. These results are presented both by component and in general manner, in order to observe the panorama of financial literacy in the population under study.

### Financial Knowledge

As mentioned above, the financial knowledge assessment consists of seven questions and each question evaluates a different topic. Table 2 shows the percentage of students who were successful in each topic.

**Table 1. Percentage of successes by topic**

<b>Subject</b>	<b>Percentage</b>
Living costs	77.43%
Savings account	45.72%
Diversification	48.64%
Financial environment	19.26%
Inflation	56.81%
Interest rate	93.97%

Risk/benefit ratio 47.47%

It can be seen in Table 2 that only 19.26% of students correctly answered the question of financial environment. This question evaluates knowledge about compound interest use in financial institutions. On the other hand, in the questions related to savings account, risk diversification and inflation, a success rate of 45.72%, 48.64% and 56.81% was reached, respectively. In addition, in the question of the topic risk/benefit ratio there was a success rate of 47.47%.

### Financial attitude

For this component the respondent must determine if they agree or disagree with three statements using a rating scale from one to five, where one is totally agree and five totally disagree. The final score in this component is the average of the three answers given by the student. For the first sentence, 57.78% disagreed completely with the statement "I only think about the present; that someone else take charge of the future," which indicates that students have an attitude of planning for the future. On the other hand, taking into account the 18.48% that evaluated the statement with a four, we have that 76.26% of students disagree with the first statement, which is a pretty positive result.

Furthermore, the 52.34% of the students evaluated the statement with four and five, which means that more than half of the students surveyed disagree with the statement "money is there to be spent", even if just over half show this positive result, the fact is that almost the other half of the students agree or are neutral with the statement is a warning sign because they see money as a resource that should be used in the short term. Finally, in the statement "I am more pleased to spend the money than to save it" we have that 62.26% of students disagree with the statement when evaluating it with four or five, this shows a positive attitude given that having this kind of criterion against this statement avoids the so-called ant expenses that affect the finances of many people in the long term. Table 3 shows the results obtained from the component.

**Table 3. Results of financial attitude component**

Rate	Percentage
[1,2)	2.72%
[2,3)	8.95%
[3,4)	33.07%
[4,5]	55.25%

It should be mentioned that 55.25% of students have a desired financial attitude, 33.07% obtained a score of 3 to 3.99, which is positive but can be improved, and just over 10% of students have a low financial attitude.

### Financial behavior

In this case, the first part was evaluated with four statements that are equivalent to four points, but contrary to the financial attitude component, this time the respondent is expected to fully agree with the statement. Anyway, it is sought in the same way that the respondent evaluates with the highest possible number each of the statements. This means that now the five is totally in agreement and the one totally in disagreement, while in the financial attitude component was the opposite. However, it should be clarified that the score of the first of this component is no longer the average of the answers given, now a point is given to the student who agrees with the statements, in other words, that evaluates with 4 or 5.

The remaining five points are obtained from five questions which are intended to identify the following: a) the respondent participation at home; b) if they display saving behaviors; c) their performance about their saving behaviors; d) if they are in contact with financial resources; e) and what decisions they make when they want to get something and they don't have enough financial resources. It is noteworthy that the participation of young people and the dialogue with their parents about economic issues has become a factor that affects their financial literacy, although it should be clarified that not all young people learn equally from their parents (Moreno-Herrero et al., 2018).

**Table 4. Results of financial behavior component**

Rate	Percentage
0	0.19%
1	0%
2	0.58%
3	1.75%
4	4.67%
5	10.31%
6	17.9%
7	26.85%
8	29.57%
9	8.17%

### Financial Literacy level

The financial literacy rating is the sum of the scores obtained in financial knowledge, financial attitude and financial behavior. Table 5 shows a breakdown by socioeconomic variables of the scores obtained on each one of the components evaluated in this research, plus the total score of the entire sample studied.

**Table 5. Overall results of financial literacy**

	Financial knowledge	Financial attitude	Financial behavior	Total Financial Literacy
<b>Gender</b>				
Male	3.78	3.80	6.81	14.38

Female	3.97	3.93	6.83	14.73
<b>Type of School</b>				
Public	3.77	3.89	6.86	14.52
Private	4.34	3.84	6.68	14.85
<b>School grade</b>				
Grade 10°	3.89	3.79	6.78	14.45
Grade 11°	3.90	3.98	6.87	14.75
<b>Age (years old)</b>				
13	5.00	3.57	7.00	15.57
14	4.06	3.83	6.68	14.58
15	3.83	3.92	6.87	14.62
16	3.96	3.83	6.80	14.58
17	3.87	3.93	6.90	14.70
18	3.27	3.85	6.47	13.58
<b>Socio-economic level</b>				
1	3.84	3.94	6.61	14.39
2	3.94	3.88	6.84	14.67
3	3.68	3.87	6.80	14.35
4	4.25	4.00	7.08	15.33
5	3.90	3.52	6.25	13.66
6	4.55	3.34	6.91	14.79
<b>TOTAL</b>	<b>3.89</b>	<b>3.88</b>	<b>6.82</b>	<b>14.59</b>

From Table 5 a positive financial attitude score can be observed, highlighting the willingness of students to make decisions. We also highlight the score obtained from the female gender, the students of the private school, grade 11, with 13 years of age and socioeconomic level 4, who have the highest overall scores in terms of Financial Education. However, unlike the results obtained at the international level by the OECD, we must work hard on each of the components, in order to strengthen them and support students to a better decision-making process about their resources. This could be achieved through the implementation of pedagogical strategies more in line with the needs previously identified in students, supported by technology, analysis and research, among others (Demkanin, 2020), which help to strengthen the curriculum of the various training programmes.

## Conclusions

Having a teaching approach on financial issues is not enough in the implementation of a financial education program. Should be set as a goal for the training of future high school graduates having the profile of a financially literate person. Likewise, the implementation of new policies that evaluate the performance of financial education in the country and its real effect on people's knowledge and financial behavior are necessary. This situation is an opportunity of improvement for all financial institutions to continue developing and supporting financial education practices of their customers, especially those who are starting their economic and financial life. Practices like accompanying and advising clients at the time of borrowing decisions are crucial to assure that the economic well-being of its clients

will boost national economic stability. Furthermore, financial institutions should use different methodologies to measure the impact of their educational programs, since the materials used for teaching sometimes are quite traditional (brochures, books, talks and seminars), their design should be align more towards the needs of each person.

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