

THE DEGREE OF UNDERSTANDING BASIC ECONOMIC CONCEPTS ON THE 1ST GRADE OF THE GREEK JUNIOR HIGH SCHOOL

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Abstract— The main purpose of this research on the 1st grade of the Greek junior high school is to understand students' attitudes and the degree of knowledge for basic economic concepts. More specifically, the questionnaire answered by 203 junior high school students and it examined economic terms such as scarcity, unemployment, entrepreneurship, factors of production, budgeting, exchange rates, taxation. The purpose of triangulation, a closed-ended and open-ended questionnaire was sent to the 23 teachers of the lesson. The findings show that junior-high-school students in Greece display a low level of financial literacy and comprehension of economic concepts. This is an under-researched matter with no such studies conducted on this specific age group in Greece, but it is a crucial issue for long-term economic and social sustainability. Thus, this paper pushes towards the direction of introducing a greater focus on financial literacy in the Greek junior high school curriculum.

Keywords— Greek Junior High School, Greek Secondary Education, Financial Literacy, Financial Education, Financial Behavior of Teenagers, Long-Term Economic Sustainability

1. INTRODUCTION

The 1st grade of the Greek Junior High School is the first step in secondary education for 12-year-olds in Greece and a crucial point where children become teenagers. Therefore, matters of financial literacy start becoming increasingly relevant. Besides in modern society, with its ever-growing complexity, financial literacy is necessary, and thus it must be an integral part of education [1].

That part is called financial education and it is a process aiming at increased understanding of students on financial concepts and products, through information, education, and advice [2]. As such financial education promotes financial literacy.

Financial literacy itself is a concept that includes a range of notions from financial awareness and knowledge, financial skills, such as calculating compound interest payments, and financial capability in general, as in money management and financial planning [3].

The main purpose of this research is to understand 1st-grade junior high school students' attitudes and the degree of knowledge of basic economic concepts. More specifically, the questionnaire answered by 203 junior high school students and it examined economic terms such as scarcity, unemployment, entrepreneurship, factors of production, budgeting, exchange rates, taxation. Besides, it was interesting to examine whether the students

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understand the importance of terms like the hierarchy of needs, sustainability, social inequalities, and social responsibility.

The research took place among seven schools, one private and six public schools. The findings show many qualitative differences and similarities between the two groups of students. Generally speaking, the degree of understanding of basic economic concepts in the Greek junior high school is characterized as very low. For example, the students failed to answer very simple questions, like to convert successfully a specific amount of dollars to euros, or to calculate the annual income of the worker.

Taking into consideration the fact that only 1 out of 3 adults worldwide understand basic economic and financial concepts and that Greece shows low financial literacy for European standards, with a financial literacy rate of 45% [4], it becomes obvious that the comprehension of basic economic concepts by Greek students of the 1st grade of junior high school is, -other than an under-searched matter-, a matter of long-term economic sustainability. That is because finance and economics are present in every day human life and personal finances influence a country's economy on a very basic level [5].

2. LITERATURE REVIEW

As mentioned above financial literacy is a complex concept and as such there are varying perspectives on its definition. Huston [6] views financial literacy as the degree to which the individual comprehends and utilizes personal information about finance. Financial literacy is also viewed as a constituent of human capital [7], which is useful in financial decisions like savings, mortgage, pensions, *etc.*, [8]. There is also a relevant definition by [9] that includes objective and subjective financial knowledge, as well as the subjective skill of managing finance. Such a perspective is closely related to the idea of financial capability, which has been characterized as consisting of individual objective knowledge, perceived financial ability and performance of positive financial behaviors [10], [11]. The OECD [1], in a more inclusive definition, suggests financial literacy is the knowledge and comprehension of financial concepts and having the skills, willingness and confidence to apply the aforementioned to effectively decide and act on financial matters, to promote individual and collective financial well-being and to take part in economic life. Balabán *et al.*, [12] claim that financial literacy consists of knowledge, skills, and attitudes that allow citizens to ensure financial security for themselves and their families.

It is then becoming obvious that we can separate the concept of financial literacy into 3 parts:

a. knowing and understanding financial matters, as for one to change a behavior one would need to know. However, knowledge has a restricted effect on behavior [13], [14] and as such the next two parts are necessary.

b. having the skills, as the alteration of financial behavior presupposes some operational skills like budgeting.

c. being confident and having the appropriate attitudes. That is because there is a need for the necessary self-efficacy [15], [16] and motivation to apply knowledge out of the context in which it is acquired.

Related to this triad are the three pillars of financial literacy by [17], which include financial ability and behavior, financial knowledge and state support, as financial literacy needs educational and financial institutions and the state so that the 2 first pillars are constantly improved.

In a more schematic approach, [6] designed a model including relationships among financial literacy, knowledge, education, behavior and financial well-being. The inputs to

financial literacy are human capital and financial education, with demographics, family, and culture connected to financial behaviors the betterment of which are promoted by financial literacy so that a satisfying level of financial well-being is reached. There are also efforts for measuring financial literacy and knowledge, like the set of five questions by [18] aimed at measuring objective financial knowledge, as well as more extensive tests of 20 questions preferred by [19].

A relation between the ability to manage money and financial literacy is found by [20], while [21] correlates financial missteps like selection of high interest rate loans and excessive borrowing, as well as limited savings and investment, with limited financial knowledge, which is also blamed by [22] for less-than-ideal everyday financial management and a similar impact on long-term savings. On the other hand, heightened levels of financial knowledge are connected to positive financial behaviors like the possession of a checking account or an emergency fund and the timely payment of bills [13]. A study on Washington State residents' financial knowledge showed a positive connection with investing and long-term savings [23].

Also, with greater proximity to the age-group, this study interests itself with, it must be mentioned that children show more positive financial behaviors when they are more confident in their financial knowledge [9]. At the same time, they show to be more confident in mathematics with a curriculum that adopts self-directed learning [24]. By self-directed learning students' self-knowledge of capabilities seem to be increasing, so that they are not only confident in their capabilities but are also more able in the assessment of their knowledge. This was shown to make them more interested in mathematics, which in turn makes finance less intimidating, which is very important in addressing reports of decreased financial knowledge due to decreased interest in financial matters [25].

There are, of course, more specifically, many educational programs with different curricula and methods, that bring different results. A survey evaluating a wide range of financial programs for young people is presented by [26], while some programs address kids at an early age, like the promising pilot program evaluated by [27], that addresses 3rd-grade students. A critical summary of financial education programs for preschool children is presented by [28]. Concerning an age group more relevant to this study, there have been actions, like the quasi-experiment of [29], designed to study the outcomes of fictitious budget circumstances and role-playing-involving financial literacy classes in high school students. Another quasi-experimental design consisted of six-hour, DVD-based instructions called "Financing your Future", which were used by [30] and it included themes such as money management, savings, banking, credit, debt and investing. Participating students displayed elevated levels of finance knowledge in comparison to the control group.

A rather interesting specification is that of the increased effectiveness of financial education when targeting the specific needs of the students. An example of that is "Money Talks", evaluated by [31], which aims at teenagers in juvenile hall, migrant education programs, pregnancy, and parental programs, public schools and youth groups, that were interviewed on thematology, format and preferred time and space context in which to be financially educated. Subsequently, the course was carried out through 4 newsletters aiming at 13-18-year-old teenagers, which addressed savings, shopping tips, car costs, and money values and showed promising results in financial knowledge and behaviors. The positive results of targeting are also backed up by [25], who stresses the significance of being motivated and having objectives and goals to make financial literacy more relevant for young people.

Although there is a great correlation between economic and financial literacy and climate change behavior and policy, few researches are responding to this matter. In a survey held at Swedish upper secondary schools [52], the majority of students acknowledged the importance of tax and legislation measures to solve the energy and pollution problems associated with climate change, although there was a lower level of

willingness to adopt personal changes. A qualitative survey on 7th-degree students in the Midwest USA [53] show that there is a big effort between children but there is not enough knowledge about the matter. So, 30% of them did not correlate the climate change with destructive effects on human life and food chain. The above pieces of research underline the need for climate change education in schools in an interdisciplinary way including economics, social sciences, and physics. But there is not only a school matter in the international range. Very recent research examined the indexes of undergraduate's economic books [54], estimates that there is very little coverage of the climate change economics inside the books and it only presented as externalities of the economic activities, which underestimates the value of the matter.

In general, teenagers both want and are found to be wanting, when referring to financial literacy. For example, as per [32] German teenagers wish to be educated more on finance and economics, while per the [33] 75% of adolescent students prefer a heavier focus on finance and economics in school and 40% of them are willing to support the implementation of a corresponding subject. Of course, it is not only education but also parenthood that educates students on financial matters and has a positive effect on financial behavior in the long run [34]. However, in the study of [32], it was shown that female students and low-integration students show decreased levels of financial literacy, while it was found that basic financial literacy is connected to math skills and sophisticated financial skills to foreign language skills and cognitive ability. At the same time, 15-year-old Italians score way below the OECD financial literacy average [35] and less than one out of three American adolescents display basic financial literacy [36]. This is why the world seems to be adapting and as such financial education is becoming more and more present in high schools, colleges [37]-[39] and workplaces [40].

3. METHODOLOGY

3.1. METHOD

For the present study, a quantitative survey using a closed-ended questionnaire was selected. The decision to conduct quantitative research was helped by a large number of students, the distance between schools and the restrictions imposed by the Ministry of Education in terms of bureaucracy regarding the surveys of school students. E-mail invited professors who teach "Home Economics" at the first high school class in Greek schools so that the answers are geographically dispersed. The lesson's curriculum is analytically presented in Appendix A.

In addition to the students' responses, a closed-ended and open-ended questionnaire was sent to the teachers who teach the lesson. The choice of using a separate questionnaire was intended to triangulate the results of the research but also to further inform and deepen it by drawing on the professional experience of the teachers in the classroom. As for the teachers, the qualitative research was not selected through a semi-structured interview as it was hypothesized that they would find it difficult to respond to a face-to-face conversation and would feel that their effectiveness was judged.

3.2. SAMPLE

The research took place among seven schools, one private and six public schools between January and March 2019. A sample of 203 students was used. Most of the questionnaires were filled out by the students through the google docs online platform¹, some questionnaires were completed in paper form and passed to the platform by the

¹The research has been displayed in this form :
<https://docs.google.com/forms/d/1mSnoMGPEVUIwoZSRhruLOUIHhzjQqJ1BuYk7vlkW6Fw/pr efill>

researcher. The questionnaire was answered by 46,3% of boys and 53,7% girls. One-third of our sample was from private schools (73 students or 36% as a percentage) and the two-thirds were from public schools (130 students or 64% as a percentage). One out of four students said that at least one of his/her parents is an entrepreneur (26,1%). In addition to the students' responses, a closed-ended and open-ended questionnaire was sent to the 23 teachers. 91% of them work in public schools and 69.6% teach for more than 10 years. All of them are teaching home economics and the majority are teachers of the students who participated in the survey, except some few who could not be able to give the survey to their students.

3.3. DATA ANALYSIS

The students' and teachers' responses were processed through the google docs automatic extraction tool and were selected for easy and immediate use. Open-ended responses used the categorization technique. Unfortunately, despite the anonymity of the platform, the original assumption was confirmed and most teachers only answered closed-ended questions.

The student questionnaire (Appendix B) was designed to examine students' perceptions and knowledge of key economic terms such as scarcity, unemployment, entrepreneurship, factors of production, budgeting, exchange rates, taxation. Also, it was interesting to find out if students understood the importance of terms like a hierarchy of needs, sustainability, social inequalities, and social responsibility. The professors' questionnaire (Appendix C) aimed to develop teachers' perceptions of financial literacy and the role of the family, school, teachers and the entire education system.

4. FINDINGS

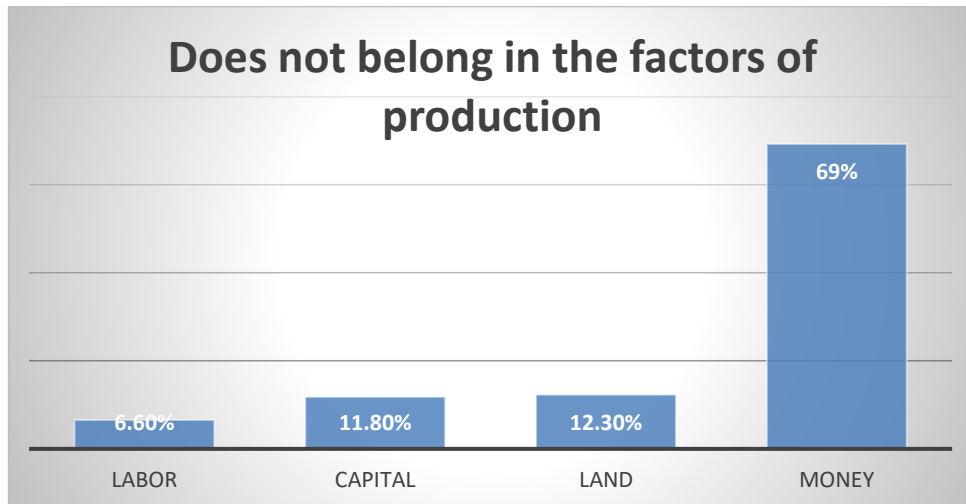
The general findings show the low degree of economic literacy among young students. For example, the students failed to answer very simple questions, like to convert successfully a specific amount of dollars to euros, or to calculate the annual income of the worker. Moreover, the majority of the professors did not answer the open questions and believed that the main problem is the poor financial literacy of the families, the low income and the educational system. Let us examine one by one the quantitative and qualitative data of the research.

First of all, there were some demographic questions about gender, the type of school, the parents' profession and the bank situation of the students. The questionnaire was answered by 46,3% of boys and 53,7% girls. One-third of our sample was from private schools (73 students or 36% as a percentage) and the two-thirds were from public schools (130 students or 64% as a percentage). One out of four students said that at least one of his parents is an entrepreneur (26,1%). This fact explains the low positive attitude of students for entrepreneurship, especially on students at public schools. At this point, it is crucial for the research to be mentioned, that there is different performance between the students at private and public schools. Respectively, the portion of parents who are entrepreneurs was about three times higher (48% vs 14%) at the private school. This means that there are income inequalities between private and public schools and qualitative differences in the economic perspective of the students in some cases.

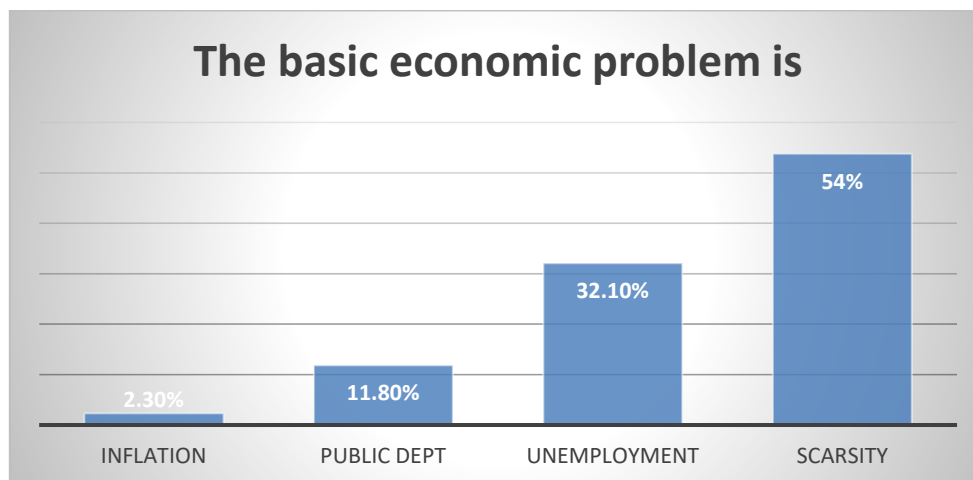
The majority of the students (54,7%) has not got any bank account. In contrast, this percentage in the private school was low because 63% of the students got bank accounts and only 37% of the participants state that has not got any bank account. One-third of the students say that have no interest (17,2%) or they have low interest (18,2%) to be entrepreneurs in the future. In contrast, one-quarter of the sample say that have very high (9,4%) and high (18,7%) interest to be an entrepreneur in the future. Likewise, there are differences between the two different groups of the students who attend the private and public schools. One-third of the students of private schools imagine their selves to be

entrepreneurs in the future. At public schools, only one out of four students is positive to be an entrepreneur.

The following questions have been examined the economic literacy of the students. More than one out of four students (30,7%) does not know clearly that the factors of production are labor, land, capital, and entrepreneurship. More specifically, 30.7% of the respondents replied that “money” is a factor of production.



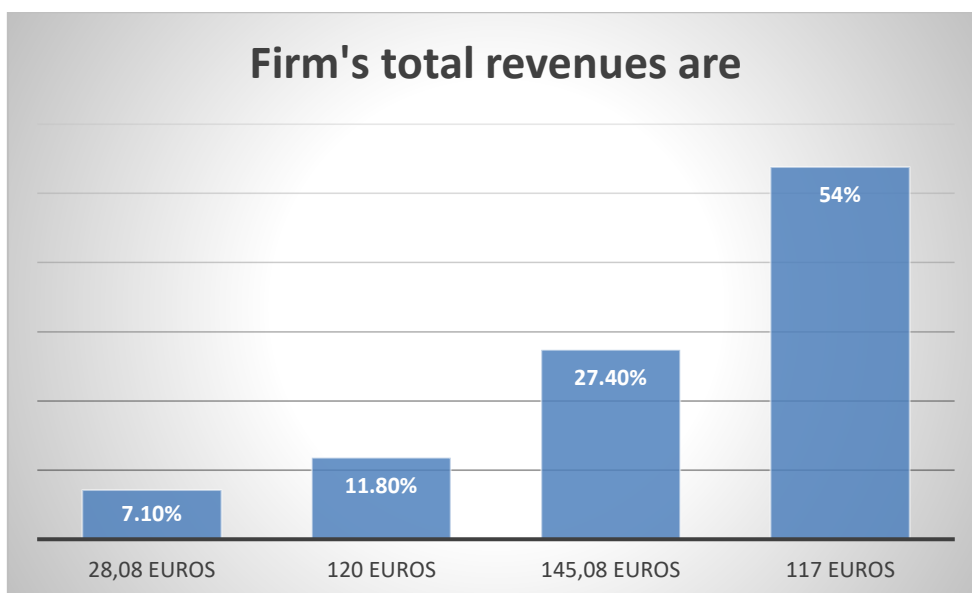
It is worth mentioning that half of the students (46%) did not know that the basic economic problem is the conflict between limited resources and unlimited wants.



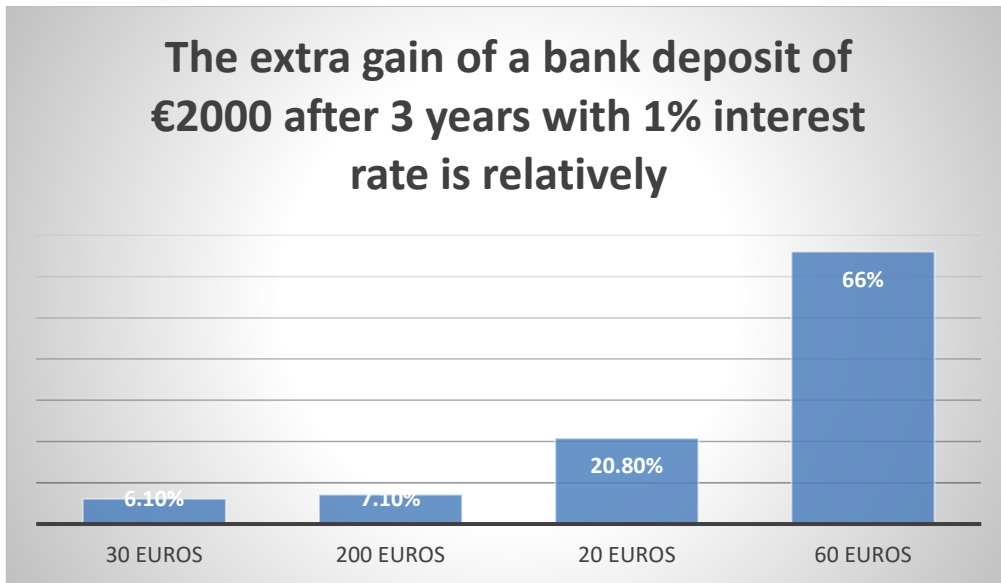
A significant percentage (32,1%) of the Greek students who attend on the 1st class of junior high school believe that the basic economic problem which every economy faces is unemployment. Another part of the students (11,8%) believes that the basic economic problem of any country is its international debt.



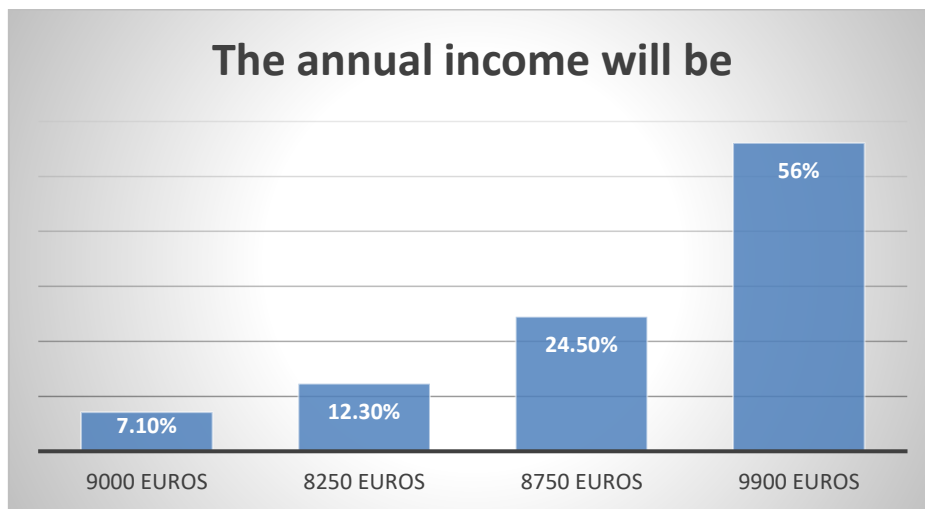
One out of four students believes that the price of the final product is equivalent to the marginal net revenue of the firm. The photo above is the receipt.



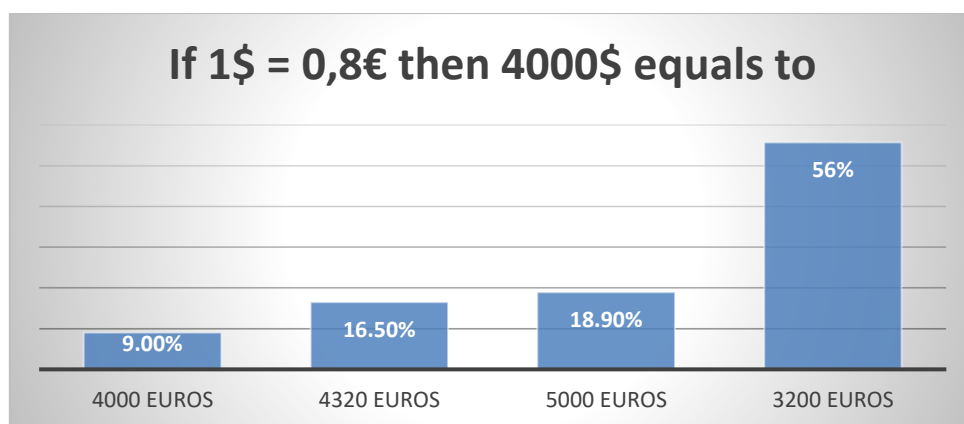
One-third of the students could not calculate a very simple exercise of the interest rate. For example, in the question “calculate the interest of €2.000 after 3 years if the interest rate is 1%”, a significant portion of students (33%) was confused.



The results were more sufficient in the question of the family budget. 73,4% of the students choose the most suitable due to family income island of Naxos as a destination for their family holidays. On the question: “A worker received €750 per month in the year 2018. If the worker in the year 2019 will receive an increase in his salary by 10%, calculate his annual income”. A very high percentage (44,3%) of the students gave a wrong answer.



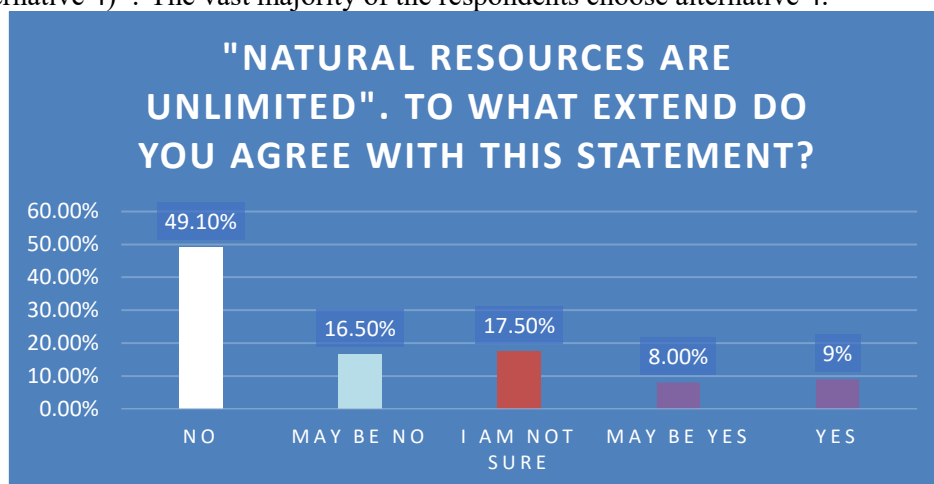
The next question examined the degree of comprehension of the progressive tax system. Unfortunately, only half of the students answer correctly a simple question for this progressive tax system. Besides, one quarter (25,1%) of the sample believes that it should be fairer for the classmates to have a proportional tax system. The following question provides more evidence. “An American couple paid \$4000 to visit the island of Mykonos for holidays. If the exchange rate between USD and Euro is \$1= €0,8 calculate the volume of euros which the Americans paid”. The percentage of wrong answers was 45,3%.



The next question had the purpose of researching the degree of understanding of the terms “wants” and “needs”. On the curriculum of “home economics” in 1st junior high school, there is a reference to Maslow’s hierarchy of needs pyramid. The question demanded from the students was to state their priorities for the goods “shoes – life insurance premium – I phone – a gift for a classmate”. In other words, the researchers examined if the differences between “physiological – safety – belonging and esteem needs” is clear. According to Maslow’s perspective, the rational order of consumption is “shoes - life insurance premium – a gift for a classmate – I phone”. The results were not based on Maslow’s rationale. For the majority of the students, the logical order was “life insurance premium – shoes – I phone – a gift for classmate”.

The next questions correspond to the “sustainability” research area. One third (33,5%) of the sample does not know the accurate number (17) of the “United Nations’ sustainable development goals”.

In the question “do you believe that our consumption choices in the present have consequences, in the quality of our everyday routine (alternative 1), in the natural environment (alternative 2), in the future generations’ life (alternative 3), all the above (alternative 4)”? The vast majority of the respondents choose alternative 4.



In the next question, the 65,1% of the students answered that the natural resources are not unlimited.

Recently, the Greek financial authorities (from 1st January 2018) imposed an indirect tax on plastic bags (€0,9 per bag). So, the 62,6% states that agree , on the other hand, one quarter (23,6%) of the sample states that disagree with the government’s decision.

In the same way, the next question demands the students to state to what extent they agree or disagree with London’s Mayor’s decision to ban fast food advertising on public

transportation. Half of the students (51,3%) state that agrees strongly or very much with the decision and one out of five (20,7%) that disagree strongly or very much with this policy.



The next question tried to examine if the students understand the term “corporate social responsibility”. Half of the students 53,2% agree strongly that firms are responsible to change consumers attitudes and one out of five (21,2%) disagree strongly or very much. Two thirds (68,5%) of the students recognized the three environmental R’s are Reduce – Reuse and Recycle and the one third didn’t recognize the question.

Also, in the question “to what extent do you agree with the perspective that developing countries face in a greater degree the negative consequences of environmental crisis”, the 54,2% of the students agree strongly (degree 5) or very much (degree 4). On the other hand, one quarter (24,2%) of the sample disagree strongly (degree 1) or very much (degree 2) with the statement above.

The next question was to examine the extent to which students relate to the main financial problem, limited productive resources - unlimited needs and the concept of consumer portfolio and opportunity cost with environmental problems, also to examine whether they understand that each financial decision corresponds in current ways of economic analysis. The question was posed: "It is worth sacrificing a bit of our consumer prosperity today to secure the future of the planet and future generations." Do you agree with the above proposal? 61,1% answered that yes we would due to the minimizing of natural resources,10 % said that the resources are unstoppable and 28,1% had a very strict environmental conscious stand. Finally, the vast majority of the students (75,4%) are willing and able to consume less meat on their diet because the over-consumption of meat is not environmentally friendly.

The professor’s questionnaires were answered by 23 persons in general, although very few were answered in the open dialogue questions. Two introductory questions about the type of the school and their teaching experience in the economic lessons in junior high school, which indicated 21 working on public schools and 2 in private schools. About 70% are teaching the economy lesson from 6 to 10 years and 30% for less than 5 years. The majority of teachers agreed on the low economic literacy of their students(47,8%), while only 13% a positive answer. There were three open answers in this section which pointed out the absence of economic lessons or courses in the elementary school, which results in total ignorance of the value of savings, the budget estimate and the forces of demand and supply.

Home economics cover only a part of the didactic curricula of economics, so we asked the professors if the students pay more attention to the economic sector of the lessons than the others and especially the basic economic concepts. Nine professors answered that their students have a neutral interest, 10 professors respond medium and high interest and 4

professors low interest, respectively. According to their extended answers, the economic sections are few, and it depends on the capacity of the teacher to gain the interest of the students using new technologies, moreover it is a factor that changes across the classes. In the question, if there is a gendered penchant on the economic lesson, the majority answer not (73,9%), some answered that boys interested more about economics (26,1%) and none answered that girls are interested in economics, which is a matter for further research.

According to the professors, the main obstacle in economic literacy is the philosophy of the Greek education system which has a low priority for the financial knowledge of the young people (47,8%), the second reason is the unreasonable economic behavior of the family (26,1%). Besides, 17,4% believe the problem is the poor school manuals and only two believed the problem is that the economics valued as a secondary lesson in the Greek curricula and the under-educated staff of the schools. Professors inform us that the lesson has recently banned from the second class of the junior high school, so there is a lack of continuity of economic knowledge in the Greek curricula which results also in the ethical statement of the students.

In the question: "To what extent do family attitudes to financial management influence children's perceptions of the need to teach finances?" the majority gave a positive answer and moreover two of them argued that there is a gap in the cost-benefit estimation and that the economic status of the parents reflects the economic perception of the students in the concept of work, income and the possession of objects of desire. All of them answered that the economic literacy of the professors has a great impact on the students' acceptance of economics as an important lesson. They believe that with the correct didactics and the use of everyday life paradigms the professor can make the students open to the knowledge of economics and help them develop their interests. In the question about the official course book all of them are disappointed and say that it is written from other professions due to its mixed thematic, also that it has important problems and they use to ignore it and teach from their material. The synthetic analysis of the economic functions and the social and environmental problems is lacking from the ability of the students according to 14 of the professors. This happens due to their age, but there is an effort to change the situation.

The state interventions are welcome by the students according to the professors but there is a need for discussion and explanation, because of the negative impact of the family. The private sector was mentioned also. The relation between the personal economic decisions and the social change was frustrating, the professors believe that depends on the family attitudes, but the majority interest only about personal life changes. Although they answered that they see positively in the question about the unification of the economic and household economic professions for the students in the close questions, in the discussions we see the main problems of the Greek education system, the competition of the professions for the few working places in the Greek education.

In the end, we asked the professors to make some proposals about the educational system improvement as it concerns economic knowledge. In general, they proposed the introduction of the economic lessons in all the levels of education, the book, and the professors' improvement, the importance of the relation of the economic knowledge with the daily life and the relation of the school with the work market. Moreover, they insisted on the phenomena of interdisciplinary analysis of the matters and the collaboration of professors from different disciplines.

5. DISCUSSION OF THE RESULTS

The fact that the majority of the students (54,7%) does not have any bank account indicates that learning their youth members to save money is not a priority in a typical Greek family, because a low-income household does not have the ability to save money and at the same time they are not financially conscious.

One explanation for the significant portion of the students (30.5%), that wrongly answered that unemployment is the basic economic problem, probably is the huge rate of unemployment, which the Greek economy faced during the Greek economic recession. At the time of research (January – March 2019), the unemployment rate in Greece was 18% [41]. Another portion of the students (11,3%) believe that the basic economic problem of any country is its international debt because the Greek international debt almost equals to the 180% of the GDP and this economic issue is a major problem for the sustainability of the Greek economy [42].

The problem with the misreading of the retail receipt possibly has to do with the fact that in Greece a huge portion of the economic activity belongs to the parallel market. Especially, after the increase in the VAT rate during the Greek “great depression”, many retailers are trying to avoid taxes. So, it is a usual phenomenon for the students to purchase goods and services without taking back any receipt.

On the other hand, the fact that 73,4% of the students choose the island of Naxos as a destination for their family holidays is a rational behavior which indicates that most Greek households try to maximize their utility under tough economic restrictions. Thus, the students have understood the difficulties which their parents face, and they are more economically conscious. This is a sign of economic socialization, as the interaction with parents helps with financial education [43], while [44] claim that parental education plays a positive role in financial self-reliance. The influence of one’s family is therefore significant, as most high-school teenagers state they are affected by their parents on their money management behaviors [45]. Besides children and teenagers can only reach their full potential if they are financially empowered and capable and that is achieved through financial education, social education, and financial inclusion [46].

One of the most impressive findings of the research was that the students couldn’t calculate correctly a very simple exercise of the percentage change. This means that the students have a low mathematical background because the Greek curriculum on primary and secondary education does not link the sciences of Mathematics and Economics. This finding reminds of the study by [32], where it was found that basic financial literacy is connected to math skills. Also, Cole, [47] found a positive connection between one’s ability to answer a set of 8 mathematical questions and financial literacy scores, while [48] provided further empirical evidence for the theoretical connection of financial and mathematical literacy [49].

It is obvious through the research that the students also have low mathematical skills. The question “An American couple paid \$4000 to visit the island of Mykonos for holidays. If the exchange rate between USD and Euro is \$1= €0,8 calculate the volume of euros which the Americans paid” is proof, as in this simplistic exercise of the exchange rate, the percentage of wrong answers was 45,3%. The Greek curriculum on junior high school must adopt more economic concepts to help the students obtain financial literacy and to give them the ability to use more efficiently the web for their transactions. On the thematic of taxation, 56% of the students choose the highest tax rate for the richest of classmates. Also, one quarter (25,1%) of the sample believes that it should be fairer for the classmates to have a proportional tax system. The phenomenon of avoiding taxation in Greece is something usual. A large volume of the citizens is not tax conscious. This is one of the reasons for the deterioration of Greek economic performance.

Also, the students seem to have understood the negative environmental consequences of climate change, especially the students who live in Athens. The capital of Greece faces huge environmental issues such as air pollution, less free green areas, traffic on the roads and a large number of car accidents, wastes on the roads and many others. Although the majority of the children recognize the matter as such and are willing for social changes acknowledging the role of economic policies and personal decisions. That is an optimistic conclusion of the research and so is the fact that the vast majority of the students (75,4%) are willing and able to consume less meat on their diet because the over-consumption of

meat is not environmentally friendly. Unfortunately, the Greek students usually eat “souvlaki”, burgers and pizzas. The children obesity in Greece is at very high levels [50] and it must be in high importance for the health and education authorities to eliminate this negative phenomenon, as soon as possible. The finding above indicates that the children are positive to change their eating routine. Unfortunately, one out of four students (24,6%) is negative to reduce the consumption of meat. Therefore, there is a need for negative advertising of over-consumption of meat, salt and sugar in primary and secondary (Greek) educational systems because there are positive possibilities of change. This finding comes in contradiction with [51], where low motivation is displayed by consumers on the matter of changing their diet for the sake of sustainability and environmental reasons, although health benefits of decreased meat consumption are also presented to them.

6. LIMITATIONS OF PRESENT STUDY AND SUGGESTIONS FOR FUTURE RESEARCH

The present paper is an effort to investigate levels of financial literacy and comprehension of economic concepts of 1st-grade junior high school students. It could have used semi-structured interviews on the qualitative part of the triangulation with the answers of the teachers, but it was hypothesized that they would find it difficult to respond to a face-to-face conversation and would feel that their effectiveness was judged. Matters of class, race and gender differences are also not robustly addressed.

However, there needs to be a greater emphasis on designing financial educational programs and have their effects measured. Together with a greater emphasis on public school financial education and the introduction of corresponding subjects earlier in secondary and even primary education, there should be measurable results in the long run that could be studied by subsequent papers measuring levels of financial literacy in Greece. Future research could also focus on class, sex and race differences.

7. CONCLUSION

Through the present research, it is shown that early teens in Greece display a low level of financial literacy and comprehension of economic concepts. This is an under-researched matter, but it is crucial for long-term economic and social sustainability. This lack of financial literacy has to do with a lack of everyday skills and also lacking mathematical skills or the non-existing connection between math and finance in the Greek junior high school curriculum, which also lacks any reference to economic concepts up to the 1st-grade of secondary education. However, students’ attitudes towards change, be it on matters of sustainability and environmental protection or financial education, are encouraging. Thus, the present paper stresses the need for financial education in early secondary education in Greece.

APPENDIX A

The curriculum of the lesson “Home Economics:

1. THE FAMILY AND ITS ENTOURAGES	1.1 The family- the Greek family 1.2 Family education 1.3 Social environment– Aspects of interpersonal relationships 1.4 Communication and problems– Public transportations 1.5 The sociability of the youth
2. FAMILY ECONOMICS	2.1 Economic resources 2.2 The economic role of family

	2.3 Family budget
3. DIET	3.1 Food and Foods 3.2 Food groups 3.4 Group A: Fruits and vegetables 3.6 Group 4: Meat-fish-legumes 3.7 Group 5: Fats and oils 3.8 Pastries - beverages - drinks 3.9 Meal planning
4. HEALTH EDUCATION - ACCIDENT PREVENTION	4.1 Personal hygiene 4.2 Oral health 4.3 Smoking - Alcohol 4.4 Pharmacy - Medicines 4.5 Accidents at home and in public places 4.6 Road accidents - Traffic lawsuit
5. HOME	5.1 The home and its importance to man 5.2 Historical evolution of the residence 5.3 The Greek traditional residence 5.4 Types and forms of housing 5.5 Functionality and aesthetics of living spaces
6. CLOTHING	6.1 Clothing and its importance to humans 6.2 Historical Evolution of Apparel - Greek Traditional Apparel 6.3 Clothing Types - Raw Materials - Selection Criteria and Hygiene of Apparel

APPENDIX B

The students' questionnaire included the question listed in the above box.

QUESTIONS	POSSIBLE ANSWERS
Entry question 1: You are a boy or a girl?	BOY / GIRL
Entry question 2: Your school is.....	PRIVATE / PUBLIC
Entry question 3: Is any of your parents an entrepreneur?	NO / YES
Entry question 4: Do you have a bank account?	NO / YES
Entry question 5: Would you like to become an entrepreneur?	Not at allyes totally I am (1 to 5 options)
1. Which one does not belong to the factors of production?	Labor / money / capital / land
2. To the Greek labour force belong:	Those who will to work / all the population / those who can work / those who can and will to work
3. The many economic problem of every economy is:	Limited resources and unlimited needs and pleasures / the unemployment / the inflation / the public debt
4. How much are the real revenues of an enterprise after selling its products?	Answers between before and after VAT
5. Your grandfather and grandmother have deposited in your bank account € 2000. Suppose this is the only money in your account and there will be no withdrawal or deposit for the next 3 years. If the interest rate of the Bank's deposits is 1%, after 3 years you will have approximately:	Plus 20€ / plus 30€ / plus 60€ / plus 200€
6. A family has a monthly income of € 2500. The monthly expenses of the family are listed in the table below. Given the family's annual income and annual expenses, which island would you recommend to her on her vacation, since the cost of a vacation on each island is: (are giving in list the monthly cost of living of the family)	Paros 4800 euros / Santorini 5000 euros / Naxos 4000 euros
7. Mr. Economou received a salary of € 750 each month. But as of 1/1/2019 it has received a 10% increase. This means that his annual income will be:	9900€ / 9000€ / 8750€ / 8250€
8. Marios, Phaedon, Anna and Antonis were classmates. They met 20 years after graduating from school. Marios earns 30,000 € from his job, Phaedon 50,000 €, Anna 40,000 € and Antonis 70,000 €. At what tax rate do you propose to be taxed?	A different percentage needed to be matched to every person according to its income

9. Would it be fairer for all four classmates to be taxed at the same tax rate? (eg 20% and all four).	NO / YES
10. A couple of US citizens paid \$ 4,000 to a travel agency in America for a one-week vacation in Mykonos in August. How many euros will the couple's vacation cost since the dollar-euro rate is: \$ 1 = € 0.8?	3200€ / 4000€ / 4320€ / 5000€
11. Some goods are more necessary than others in our lives. In what order would you consume the following goods, starting with what was needed?	Life insurance / i-phone / shoes / present for a classmate
12. In September 2015, the United Nations General Assembly set some "Sustainable Development" goals, which seek to provide solutions to contemporary global challenges. These goals are:	10/ 15/ 17 /20
13. Our consumer choices have results today to:	The quality of everyday life / the natural environment / the quality of life of next generations / all above
14. "The natural resources of the earth are unlimited". To what extent do you agree with the above proposal?	1 to 5 I do not agree at all to i totally agree
15. To what extent do you agree with the tax on the plastic bag?	1 to 5 I do not agree at all to i totally agree
16. The Mayor of London banned advertising of fast food companies on the stands of MMMs. To what extent do you agree with his decision?	1 to 5 I do not agree at all to i totally agree
17. "Changing the attitude and behavior of people in relation to the environmental crisis is also the responsibility of businesses": To what extent do you agree with this proposal?	1 to 5 I do not agree at all to i totally agree
18. What are the three "R's" that we need to incorporate into our daily lives to protect the environment and natural resources by making a reasonable production of household waste?	<ul style="list-style-type: none"> • Rethink – Reduce – Reuse • Reduce – Reuse – Recycle • Recycle – Remind- Reproduce
19. "Developing countries (in Africa and Asia) are more likely to suffer the effects of the environmental crisis, while their inhabitants consume less goods than those in developed countries (in Europe - North America)." To what extent do you agree with the above proposal?	1 to 5 I do not agree at all to i totally agree
20. "It is worth sacrificing part of our consumer prosperity today to secure the future of the planet and future generations." Do you agree with the above proposal?	<p>Yes, because in a few years we will not be able to survive after significant resources, such as drinking water, are reduced.</p> <p>No, because nature has unlimited potential for recovery, and we can offset the costs of environmental impact through technological and economic development.</p> <p>Nature is self-defeating, and modern man should protect it at all costs by adopting strict laws</p>
21. Would you be prepared to reduce meat consumption if you knew that it was the most energy-consuming and environmentally friendly form of food?	YES /NO

APPENDIX C

The teachers' questionnaire with close and open-ended questions

QUESTIONS	POSSIBLE ANSWERS
Entry question 1: The school that I teach the Home economics lesson is:	Private / Public
Entry question 2: I teach the lesson of home economics for:	Less than 5 school years / 6-10 school years / more than ten school years
1. Based on your teaching experience, do you consider that high school students have sufficient basic knowledge of how economics works?	1 to 5 Not sufficient to Very sufficient And Open answer option

2. Is students' interest in the home economy increased in terms of the modules related to learning basic economic concepts?	1 to 5 Very low interest to very high interest And Open answer option
3. Do you think there is a difference in students' interest in economics, depending on the gender of the children?	No there is no difference / boys interested more / girls interested more And Open answer option
4. What do you consider to be the most important obstacle to the financial literacy of high school students?	-Family behavior. In many cases, the Greek family does not behave in a financially rational manner. -The philosophy of the Greek education system, which does not prioritize financial literacy. -Inadequate school textbooks. -Low teacher education. -Something else If you chose something else tell us which
5. To what extent do family attitudes to financial management influence children's perceptions of the need to teach finance?	1 to 5 They do not influence at all to they totally influence And Open answer option
6. To what extent do the training of teachers who teach economics influence children's perceptions of the necessity of teaching finance?	1 to 5 It does not influence at all to it totally influences And Open answer option
7. To what extent does the home economics textbook help students understand basic economic concepts?	1 to 5 It does not help at all to it totally helps And Open answer option
8. "Students associate the functioning of economies with the wider social problems and especially those of the environment." To what extent does the sentence above correspond to the reality of your class?	1 to 5 It does not correspond at all to it corresponds absolutely And Open answer option
9. To what extent do students in your class agree with government intervention in the economy aimed at protecting the environment?	1 to 5 They do not agree at all to they totally agree And Open answer option
10. Do students perceive individual decisions in economic life as a driver of social change?	1 to 5 They do not understand at all to they totally understand And Open answer option
11. Do you believe that the integration of the Home Economics professors with economists (formerly WP9) will have a positive effect on the development of high school students' economic, social and environmental consciousness?	1 to 5 It does not affect positively to it will have a great positive affect And Open answer option
12. What could be changed in finance education so that students would broaden their knowledge and understand the concepts more deeply?	Open answer

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