

FINANCIAL LITERACY OF UNIVERSITY STUDENTS: A CASE STUDY FOR ANADOLU UNIVERSITY, TURKEY

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ABSTRACT

The level of financial literacy is crucial for university students who represent the future as a dynamic segment of the society. Financial literacy is a vital ability, which can be obtained through educational programs in schools. To investigate the validity of this statement, a sample is selected from the Faculty of Economics and Administrative Sciences students, who are exposed to financial concepts and techniques more than any other university faculty students. The financial literacy of university students was measured through a scale, which was designed by adapting OECD financial literacy scale to the conditions of Turkey. According to the findings of the research, the financial literacy of the Faculty of Economics and Administrative Sciences students is high.

Keywords: Financial Literacy, Financial Literacy Level of Turkish University Students, OECD, Importance of Financial Literacy, Cluster Analysis.

ÜNİVERSİTE ÖĞRENCİLERİNİN FİNANSAL OKURYAZARLIĞI: ANADOLU ÜNİVERSİTESİ TÜRKİYE İÇİN BİR VAKA ÇALIŞMASI

ÖZET

Finansal okuryazarlık düzeyi toplumun dinamik bir kesimi olarak geleceği temsil eden üniversite öğrencileri için çok önemlidir. Finansal Okuryazarlık okullardaki eğitim programları ile kazanılabilen yaşamsal bir yetenektir. Bu ifadenin geçerliliğinin araştırılması amacıyla diğer üniversite fakültelerine göre daha çok finansal kavram ve tekniklere maruz kalan iktisadi ve idari bilimler fakültesi öğrencilerinden bir örneklem seçilmiştir. Üniversite öğrencilerinin finansal okuryazarlık düzeyinin ölçülmesinde OECD finansal okuryazarlık ölçeğinin Türkiye koşullarına uyarlanması ile tasarlanan ölçek kullanılmıştır. Araştırmanın bulgularına göre öğrencilerin finansal okuryazarlığı yüksek olarak belirlenmiştir.

Anahtar Kelimeler: Finansal Okuryazarlık, Türk Üniversite Öğrencilerinin Finansal Okuryazarlık Düzeyi, OECD, Finansal Okuryazarlığın Önemi, Kümeleme Analizi.

1. Introduction

After the 2008 global economic crisis, country governments cast financial literacy an important role because of the socio economic results that the individuals with enormous debts and generally with inadequate retirement plans face. Because of this reason, it is considered to be valuable to measure the financial literacy level of every socio economic status in order to be able to form prevention sets. Putting the financial literacy level in the field of study forward will be helpful to get some information about the university students' financial manners and attitudes. Due to above-mentioned reasons, it is crucial to put forward the financial literacy of this group of people who will shape the future of the society. Moreover, it was aimed to conduct such an academic study that would be sufficient enough to show the place of Turkey in the international community with regard to this field. Thus, the scale developed by OECD for measuring financial literacy was used after adapting it to the conditions of Turkey. The nature of university students who are considered to be the most dynamic layer of the society - being open-minded, willing to learn and representative of the future- facilitates the field research of the study. Financial literacy is expressed as a skill that can be acquired with financial literacy education programs. To investigate this statement, the target population is determined as the Faculty of Economics and Administrative Sciences students who are exposed to financial concepts and techniques more than any other university faculty students. The findings of the study can contribute to the determination of needs to be able to design long-term educational programs.

2. Literature Review

In the 21st century, forces in the market gradually offer wider financial services. Thus, individuals have more options and conveniences to solve the financial problems they face. Individuals need information flow to use new technologies and to take conscious decisions. Many people do not have the ability to know and use the fundamental financial concepts such as simple economic and interest calculations, differences between real and nominal value or portfolio diversification to dispense risk. The number of people who have information about more complicated financial concepts such as the differences between bonds and stocks, making investment funds or basic asset pricing is lower. The processes of being aware of the concepts about financial instruments, obtaining information that is necessary to make a decision and understanding and evaluating are regarded under the concept of financial literacy in literature (Lusardi, 2008).

According to the Organization for Economic Co-operation and Development (OECD)'s comprehensive definition, financial literacy is the process of increasing consumers' financial prosperity by making sure that the consumer is informed about financial products and concepts or the consumer has an awareness of making choices between financial risk and alternatives (Lusardi, 2006).

After the 2008 crisis, it occurred that the great majority of the people who owned a house with a mortgage in the United States of America did not know that if interests increased, their payment would increase. This result shows that low level of financial literacy is a problem of not only developing countries but also developed countries. (The Economist, 2008). Increasing financial literacy level is offered as one of the solutions to overcome this illiteracy.

Financial illiteracy is not only common among countries but also highly common among some certain demographic groups. For example, financial literacy decreases proportional to age groups. It is a phenomenon to which particular importance should be attached because there is an increasing concern about the frauds aiming at seniors and individuals have to make financial decisions till the last stages of their lives. Considerable gender differences are observed in financial literacy about which females know less than males, especially about risk diversification. This subject is particularly important because of the problems about taking financial decisions females may encounter, especially after the death of their spouses (Lusardi, 2008:8).

Financial literacy among Israeli college students are investigated by Shahrabani (2013). In their study they showed that Israeli students exhibit a low level of FL and that FL is affected by gender, nationality, class rank, work experience, and college major. In addition, the study revealed large gaps in FL between Jews and Arabs (Shahrabani, 2013:439).

In the literature, it is acceptable that traditionally informed customer will be a better customer. The greater the complexity level of products and services is, the more important the knowledge of consumers is. Financial services are also included in this. Thus, increasing financial literacy level is the precondition of consumer's making the right choice among different financial products (Hathaway et al, 2008:1).

Together with financial liberality that is seen as a general tendency globally, financial products, which are gradually becoming more complicated, financial innovations and the transfer of financial risks to individuals attributed great responsibilities to financial consumers. Defined retirement plans transferred investment risks to individuals. Furthermore, in the economic crisis several weaknesses, which caused individuals to buy inappropriate financial products that had a key role in triggering crisis, were revealed. It can be easily understood that most customers do not possess appropriate qualifications to face their growing responsibilities. The surveys conducted in OECD countries and in some non-OECD economies pointed out that financial consumers not only had low financial literacy which prevented them from only making the right and knowledge-based financial decisions but also they generally exaggerated their financial knowledge, ability and awareness (OECD, 2009:8).

The main purpose of increasing financial literacy includes the ability for individuals to manage money, to make medium and long-term plans, to realize the risks and benefits in money management, to recognize financial products, to know how and where to obtain appropriate information about financial products and services and to make use of financial products actively and efficiently. In this way, customers can share responsibilities and risks with financial institutions and experts. Moreover, financial consumers will reduce information asymmetry with financial institutions while managing their personal investments. Financial markets' becoming more complicated causes individuals to need more information while taking financial decisions. The wrong financial decisions taken by individuals have a potential to affect not only the individual but also financial markets negatively (Reyes, 2006:82).

Common problems raised in the OECD financial literacy research conducted in member countries are listed as follows:

- Individuals' having a low level of financial literacy
- Individuals' thinking that they have more information than they really have
- Having a limited ability to obtain, understand and interpret financial information (OECD, 2005:91).

Various factors cause financial literacy to be a field of public concern and a field that individuals need. Little awareness of financial needs, little knowledge about the presence and performance of different financial products, having inadequate knowledge about how and where to obtain information about financial products and services outweigh (Mason et al, 2000:7). It is important for individuals to have financial knowledge and the ability to use this knowledge in order to preserve their financial situation in time and to have adequate financial opportunities during their retirement. Therefore, being financially literate will contribute to an important part of the life of university students who are at the beginning of their career.

Financial literacy can benefit customers at all ages and all income levels. It can provide young adult university students who are new recruits with basic tools for budgeting and saving. Thus, expenses and debts can be under control. Financial literacy can help families to own a house and/or to maintain discipline to save money for the education of their children. By making elder working people gain knowledge and ability to make wise investments, financial literacy can guarantee that these people have enough savings for a comfortable retirement through both their retirement plans and personal savings plans. Financial literacy can also help low-income individuals to make the great savings that they can and help them to avoid high commissions (e.g. cheque cashing services) of financial transactions charged by non-financial institutions. Financial literacy provides the customers who have money to invest with the opportunity to accurately compare the advantages and disadvantages of very special investment alternatives as well as basic financial information such as swap, risk and return, the value of compound interest (Temizel, 2010:25).

Therefore, country governments get the programs aiming at increasing individuals' financial knowledge and ability into practice under the title of financial literacy. Generating knowledge about the financial literacy level and financial behaviors of university students as a financial consumer reveals theoretical and the main original value.

3. Methodology

Individuals' financial knowledge and the ability to use this knowledge are important for them to preserve their financial situation in time and to have adequate financial opportunities during their retirement. Moreover, it has been observed that countries get the programs aiming at increasing individuals' financial knowledge and ability into practice under the title of financial literacy after the 2008 economic crisis. While these improvements occur in the world, there are few studies about the related field in Turkey. This fact and the aim to get internationally comparable results in the related field stimulated this study to be conducted. To fulfill this aim, it was presumed that using the generally accepted OECD scale, which is used to determine countries' financial literacy levels, would yield some comparable results in the related field which would be produced by the results of the study.

In Turkey which is considered to be a developing country, some developments; such as new practices about social insurance and security like PPS (Personal Pension Scheme) on the one hand, urbanization-urban migration, the disruption of traditional family support mechanism on the other hand, are taking place. These developments have caused individuals to be more responsible for planning their own income and risk management. It is clear that university students will be affected the most from this development in Turkey which has a young population. Therefore, this group was chosen as the target group. Generating knowledge about the financial literacy level and financial behaviors of university students as a financial consumer constitutes theoretical and the main original value of the study.

Cluster analysis was used to determine the financial literacy of the individuals who were the subjects of the study. The participants of the study were categorized under three groups based on their financial literacy levels. Whether there was a relation between gender and financial literacy or not was tested. Besides, according to the financial literacy level of the respondents, their knowledge of financial products, the sources of information they use while choosing a financial product were researched and whether their choices of various monetary statements vary or not was examined with ANOVA.

The hypothesis of the research are;

H1: Financial literacy level is associated with gender.

H2: Awareness of financial products is associated with financial literacy level.

H3: The average level of participation in the statements of financial literacy clusters for money is different for at least one cluster.

H4: Effective source of information on the selection of financial products and financial literacy level are interrelated.

In the study, which was conducted due to the above-mentioned reasons, it was decided to use a questionnaire form. The designed research method is both a descriptive and exploratory research method depending on the purpose.

3.1. Questionnaire Design

The financial literacy scale designed for OECD member countries (OECD, 2011) was utilized in the study. OECD's scale used to measure financial literacy consists of; awareness of financial products, ownership status and duration of financial products, usage frequency, the information sources used while obtaining these products, the level of participation to various statements regarding money, the strategies followed in the absence of sufficient current income, the strategies of saving and questions based on financial calculations and demographic features. The scale, which was designed to identify financial literacy level nationally and to specify the comparison criteria for some certain programs and strategies, overlaps with the purpose of the study. The scale at the same time provides an opportunity to compare financial literacy levels among countries. The benefits of the scale used are mentioned in OECD's related publication as follows (OECD, 2011):

- Provides a basis for the specification of financial literacy levels nationally.
- Gives an opportunity to keep track of the changes occurring in time in financial literacy levels through repetitive studies.
- Provides information to compare financial literacy levels among countries.

For data collection questionnaire method was used. In order to predetermine the problems which might emerge during the administration of questionnaires, the pre-test of the questionnaire form was given to 50 randomly chosen students. The pre-test study was meticulously carried out in order not to have any problems about the intelligibility of the questions during the translation of the questions into mother tongue. By taking financial products and services that vary according to countries into account, some OECD scale questions were adapted into the conditions in Turkey. The interviewers who would administer the questionnaires were given a one-day training about the difficulties they may face during the administration of the questionnaires and data collection through questionnaires. The questionnaire consists of items about; the awareness of financial products, the information sources used in the selection of financial product, various statements regarding money, basic financial calculations and demographic features. The questionnaire consists of 21 items.

3.2. Sampling

In the study, the subject is university students at the Faculty of Economics and Administrative Sciences and these students continue their education in Eskişehir. Sampling from target population was determined through stratified sampling method. To form a homogeneous structure while creating the sampling, proportional distribution method was used after taking the total number of the students at the departments into account. First-year students were excluded from the scope of the study as they are not influenced by new faculty training program. The scale in the OECD study that is called “Measuring Financial Literacy: Questionnaire and Guidance Notes for Conducting an Internationally Comparable Survey of Financial Literacy” was turned into a 21-item questionnaire after making some changes by considering the conditions of the country and financial products-services. 235 students responded to the questionnaire. 221 of these were considered to be worth analyzing.

4. Findings

An approach that is generally accepted for measuring the financial literacy levels of individuals has not been found in literature. Therefore, the scale’s quiz-like part consisting of 8 questions about financial calculations and information was utilized. While determining the levels, cluster analysis was used in order to avoid discussions such as whether questions equally contribute to the financial literacy levels of respondents or not. Two step cluster analysis was used while discriminating respondents from each other according to their financial literacy levels. Analysis results were shown in Table 1. As a result of the analysis, the financial literacy levels of the respondents were classified under three groups. These groups were indicated as high (1), medium (2) and low (3).

Table 1: The Financial Literacy Levels of Respondents

Financial Literacy				
Level	Frequency	Percent	Valid Percent	Cumulative Percent
Outlier cluster	18	8.1	8.1	8.1
High	130	58.8	58.8	67.0
Medium	58	26.2	26.2	93.2
Low	15	6.8	6.8	100.0
Total	221	100.0	100.0	

These results show that based on their financial literacy level 55.5 % of respondents is placed under the category of high, 26.2 % is medium and 6.8 % is low. 8.1 % is under no category because it is an outlying observation. In the study, a high level of financial literacy was identified due to the content of the education the students at the Faculty of Economics and Administrative Sciences get. This finding overlaps with the findings of research on the average university youth (Lusardi et al, 2010:11). Thus, it can be asserted that making some modifications in educational contents can increase financial literacy level.

Table 2: Chi-square Results on Financial Literacy Level and Gender

Financial Literacy Level	Gender			χ^2	df	P
	Female	Male	Total			
Outlier cluster	10	8	18	2.625	3	0.453
High	77	53	130			
Medium	41	17	58			
Low	9	6	15			
Total	137	84	221			

To explore whether financial literacy level is related to gender, the research hypothesis “H1: Financial literacy level is associated with gender.” is tested. These results suggest that there is not a significant relationship between financial literacy level and gender. However, Lusardi (2008:8) observes gender differences in financial literacy about which females are less knowledgeable, especially about risk diversification compared to males. This finding points out that if the content of financial literacy education program is designed appropriately, the discrimination between financial literacy and gender disappears.

In order to investigate whether the financial products are related to financial literacy, “H2: Awareness of financial products is associated with financial literacy level” alternative hypothesis is tested.

The chi-square results illustrated in Table 3 show if the state of knowing financial products varies with regard to financial literacy level or not. In the study, in terms of some

products including pension fund, investment account, unsecured debt and mobile payment account, a statically significant difference was observed. However, for other products a significant difference did not exist. Financial literacy education contributes to university students' financial product recognition.

Table 3: Chi-square Results on Financial Literacy Level and the State of Knowing Financial Products

	χ^2	<i>Df</i>	<i>P</i>
Pension Fund	14.078	1	0.003**
Investment Account	9.630	1	0.022**
Mortgage Loan	4.956	1	0.175
Real Estate Mortgage Loan	4.562	1	0.207
Unsecured Debt	11.758	1	0.008**
Credit Card Checking Account	0.703	1	0.872
Time Deposit Account	0.544	1	0.909
Insurance	1.413	1	0.703
Stock	0.703	1	0.872
Bond	*		
Treasury Bill	0.762	1	0.859
Mobile Payment Account	3.799	1	0.284
	7.874	1	0.049**

*No statistics are computed because Bond is a constant

**P<0,05

The validity of the research hypothesis “H3: The average level of participation in the statements of financial literacy clusters for money is different for at least one cluster.” is tested by Anova.

Table 4: The Comparison of Some Monetary Statements According to Financial Literacy Level

		Sum of Squares	df	Mean Square	F	P
Before I buy something I carefully consider whether I can afford it	Between groups	1,45	2	0,725	0,566	0,568
	Within groups	278,976	218	1,28		
	Total	280,425	220			
I tend to live for today and let tomorrow take care of itself	Between groups	1,874	2	0,937	0,919	0,4
	Within groups	222,316	218	1,02		
	Total	224,19	220			
I find it more satisfying to spend money than to save it for the long term	Between groups	1,166	2	0,583	0,473	0,623
	Within groups	268,544	218	1,232		
	Total	269,71	220			
I pay my bills on time	Between groups	4,608	2	2,304	1,8	0,168
	Within groups	279,102	218	1,28		
	Total	283,71	220			
I am prepared to risk some of my own money when saving or making an investment	Between groups	4,955	2	2,477	1,977	0,141
	Within groups	273,163	218	1,253		
	Total	278,118	220			
I set long term financial goals and strive to achieve them	Between groups	4,699	2	2,35	1,747	0,177
	Within groups	293,165	218	1,345		
	Total	297,864	220			
Money is there to be spent	Between groups	4,21	2	2,105	1,738	0,178
	Within groups	264,088	218	1,211		
	Total	268,299	220			

Whether there was a statically significant difference between financial literacy groups when their averages of some monetary statements were compared with each other was examined with Anova test. It was observed that there was no statically significant difference between financial literacy groups and the average of responses given to these statements.

Table 5: The Effect of Information Sources on Product Choice

	Yes	No
Unwanted information sent by mail	11,80%	88,20%
Information received from a branch	67,40%	32,60%
Product-specific information received from the Internet	52,00%	48,00%
Information from the sales staff of the company providing the product	54,30%	45,70%
The best purchasing charts of newspapers and magazines' finance pages	33,00%	67,00%
The best purchasing information on the Internet	40,70%	59,30%
An Expert writing for magazines	35,70%	64,30%
Advice of an independent financial counselor	27,10%	72,90%
Recommendation of a friend or a family member (not working in the field of finance)	39,40%	60,60%
Recommendation of a friend or a family member (working in the field of finance)	57,90%	42,10%
Newspaper articles	28,10%	71,90%
TV or radio programs	40,30%	59,70%
Newspaper Advertisements	29,90%	70,10%
TV Commercials	39,40%	60,60%
Other advertisements	23,50%	76,50%

Table 5 illustrates the percentages of information sources the respondents are affected while choosing a product. Based on this, information received from a branch, recommendation of a friend or a family member (working in the field of finance) and information from the sales staff of the company providing the product were listed as three most effective information sources. In the educational content of the Faculty of Economics and Administrative Sciences, a deficiency in information sources of product choice was identified. This faculty is considered to have the closest educational content to financial literacy education.

Table 6: Chi-square Results on Effective Information Sources on Product Choice by Financial Literacy Level

	χ^2	df	P
Unwanted information sent by mail	0,753	2	0,686
Information received from a branch	0,703	2	0,703
Product-specific information received from the Internet	4,122	2	0,127
Information from the sales staff of the company providing the product	0,622	2	0,733
The best purchasing charts of newspapers and magazines' finance pages	0,595	2	0,742
The best purchasing information on the Internet	0,267	2	0,875
An Expert writing for magazines	4,468	2	0,107
Advice of an independent financial counselor	0,969	2	0,616
Recommendation of a friend or a family member (not working in the field of finance)	3,306	2	0,192
Recommendation of a friend or a family member (working in the field of finance)	0,124	2	0,94
Newspaper articles	5,902	2	0,052
TV or radio programs	5,638	2	0,06
Newspaper Advertisements	1,436	2	0,488
TV Commercials	3,153	2	0,207
Other advertisements	1,274	2	0,529

The research hypothesis, “H4: Effective source of information on the selection of financial products and financial literacy level are interrelated.” is tested by chi-square test of independence for each information source and financial literacy level.

According to Table 6, a relation between financial literacy level and effective information sources of product choice was not observed. In other words, financial literacy level and effective information sources of product choice are not interrelated.

5. Conclusion

The optimum and programmed education, which has an acceptable content about financial literacy at higher education level, is given at the Faculties of Economics and Administrative Sciences in Turkey. This feature provides an opportunity to test financial literacy as a vital ability that can be obtained through education. That the students at the Faculty of Economics and Administrative Sciences have high financial literacy levels is a valuable indicator. It illustrates that financial literacy level can be increased via programs with a properly designed

educational content. In this regard, the findings of the study are valuable. The financial literacy levels of the students of the Faculty of Economics and Administrative Sciences included in the study were identified with cluster analysis. As a result of the analysis done, the respondents were categorized under three groups based on their financial literacy levels. It was specified that the financial literacy levels of the respondents were considerably high with respect to the results. According to the results obtained, only 6.8 % of the respondents was in the category of low financial literacy level. When it is taken into consideration that all of the respondents are students at the Faculty of Economics and Administrative Sciences, this situation indicates the importance of educational content in financial literacy. When the relation between gender and financial literacy level was researched, a statistically significant relationship between these two variables was not observed. When the chi-square results on financial literacy level and the state of knowing financial products were examined, only in some products like pension fund, investment account, unsecured debt and mobile payment account, a significant difference was observed at $\alpha=0.05$ level. This result indicates a statically significant relationship between the state of knowing the related products and financial literacy level. A properly designed educational program increases the financial product recognition level of students. The responses given to monetary statements do not vary with respect to financial literacy level. This fact points out that financial literacy level does not create a significant difference in the respondents' attitudes to these statements. This finding indicates the dimension of the educational program which should be supported. It has been found out that information received from a branch, recommendation of a friend or family member (working in the field of finance) and information from the sales staff of the company providing the product are the most prominent among the financial resources effective in financial decisions. This point indicates another dimension of the educational program which should be supported. A statically significant difference has not been observed between the information sources used to take financial decisions and financial literacy level.

Students of the Faculty of Economics and Administrative Sciences, which has the most intensive educational content about financial subjects, participated in the study. The high financial literacy level of the students at this faculty attracts the attention to the additional value that the education on financial literacy can provide. This finding is also identical to the research findings (2011) from Arizona Pathways for life success in University Students (APLUS) which revealed "High school and college students who are exposed to cumulative financial education show an increase in financial knowledge". It is predicted that making a comparison between the results of this study and the results of future studies with university students who do not get financial education, especially students at engineering faculties, education faculty or science faculty will yield valuable information to highlight this finding. Also financial literacy levels of different grades can be researched in order to explore the effect of cumulative financial education.

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