

Exploring Relationship between Financial Literacy and Quality of Life

Zeynep Çopur

Hacettepe University of Ankara, Turkey

ABSTRACT

Financial literacy is one of four key factors, along with sufficient income, access to suitable and affordable financial products and appropriate regulation, identified as necessary for individuals to achieve positive financial outcomes and secure financial wellbeing. Financially literate consumers are more likely to be informed and confident and therefore better able to participate in economic life. Participation in economic life affects quality of life, the opportunities that people can pursue, their sense of security, and the overall economic health of society. The present research is designed in order to explore relationship between financial literacy and quality of life. The research is composed of 600 people living in the neighbourhood of Çankaya district in Ankara, Turkey. On average, the participants performed lower in the questions assessing formal financial literacy (5.2). There was a slight difference for average scores based on gender. On average, male participants scored slightly higher (5.88) compared with females (4.44). The study finds that there is relationship between financial literacy and quality of life. The findings have important implications for policy-makers, educators, regulators and researchers interested in financial literacy and quality of life. In relation to consumer protection, when people have higher levels of financial literacy, this can result in more quality of life.

Keywords: Financial Literacy, Quality of Life

1. INTRODUCTION

Financial literacy has become a key life skill for individuals as well as micro and small businesses (OECD, 2015). Financial literacy refers to the ability to understand, access, and utilize financial information in ways that contribute to better financial outcomes (Braunstein & Welch, 2002; Han, et al., 2014; Hilgert, Hogarth, & Beverly, 2003; Lusardi & Mitchell, 2014). Further, financial literacy is one of four key factors, along with sufficient income, access to suitable and affordable financial products and appropriate regulation, identified as necessary for individuals to achieve positive financial outcomes and secure financial wellbeing. Financially literate consumers are more likely to be informed and confident and therefore better able to participate in economic life (Ali, Anderson, McRae, & Ramsay, 2014). Financial education can help enhance financial literacy by increasing financial knowledge, skills and attitudes. In turn, this can contribute to individuals' (including vulnerable and low income) participation in financial, economic and social life, as well as to their financial well-being (OECD, 2015). Thus, financial literacy is directly related to the wellbeing of individuals (Bhushan & Medury, 2013).

Participation in economic life affects quality of life, the opportunities that people can pursue their sense of security, and the overall economic health of society (Ali, Anderson, McRae, & Ramsay, 2014). According to World Health Organization (WHO), quality of life is defined as "an individuals' perception of their position in life in the context of the culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns" (WHO, 2016). From this point, financial literacy might be able to explain quality of life. However, there is no previous research focused on intersection between these two domains. Financially literate people are more likely to make efficient financial decisions there by increasing their likelihood of achieving financial goals. It is suggested that improvements in individual financial literacy benefit communities because an individual's ability to meet financial goals and secure his or her financial wellbeing creates opportunities for social inclusion and enhances the economic health of a society (Ali, Anderson, McRae, & Ramsay, 2014). Having financial literacy skills is an essential basis for both avoiding and solving financial problems, which, in turn, are vital to living a prosperous, healthy and happy life (Wolcott & Hughes, 1999).

Turkey's Financial Access, Financial Education, Financial Consumer Protection Strategy and related action plans were developed under the aegis of the Financial Stability Committee and were approved by the Turkish Prime Minister in 2014. The Financial Stability Committee elaborated the Strategy through a holistic approach considering that the three aspects are interlinked. The

Financial Education Action Plan (2014-2017) is coordinated by the Capital Markets Board within the framework of current state analyses and internationally accepted principles (Republic of Turkey Prime Ministry, 2014; OECD, 2016). At the international level, the Organization for Economic Co-operation and Development (OECD) has led the push to increase consumer protection by raising levels of financial literacy (Ali, Anderson, McRae, & Ramsay, 2014). A growing number of countries are developing national strategies, based on the information received through the OECD/INFE surveys and Secretariat desk research, 59 countries report developing a national strategy, implementing one or revising it and developing a new one, with an additional five planning one in 2015. This represents a steady increase when compared with the situation in 2011, when 26 countries reported having developed or implemented a national strategy (more than 200% in three years) (OECD, 2015). The goal of the Turkey's National Strategy is to increase both access to and use of financial products and services by increasing knowledge and awareness. Furthermore, the Strategy aims to ensure that efficient measures are taken by the leading agencies for the protection of financial consumers (Republic of Turkey Prime Ministry, 2014).

Financial literacy education covers the whole population, particular target groups such as family and women, primary and secondary education, universities and academics, public and private sector employees, the financial sector, the disabled, elderly, unemployed youth as well as groups at teachable moments of life such as marriage, divorce, pregnancy, loss of job, etc., represent the target audience of financial education. Turkey's Financial Stability Committee has developed strategic cooperation with government agencies and institutions as well as non-governmental organizations. As financial literacy is a relatively new policy area, Financial Stability Committee recognizes the importance of financial education, financial consumer protection and access to financial products and services in the 2014-2017 years of the National Strategy. Further, a key dimension of the cooperation model of the National Strategy, which includes the government, non-governmental organization and education sectors, is the continuous and efficient sharing of experience, particularly activities. In the context of this large scale new strategy around financial literacy and education, and as with any new policy intervention, measurements of current financial literacy levels are necessary (Republic of Turkey Prime Ministry, 2014). Currently, very little research evidence in Turkey exists that explores financial literacy. According to the preliminary results of "Turkey Financial Capability Survey" jointly conducted by the World Bank and the Capital Markets Board, financial literacy levels are low in our country (SPK, 2015).

Earlier studies found that perceived financial well-being appeared to be related to psychological well-being, and the ability to feel more in control of one's life (Norvilitis, Szablicki, & Wilson, 2003). Improving financial literacy is a way to increase empowerment and improve quality of life (Knapp, 1991; Voydanoff, 1990), while on the other hand, financial illiteracy wastes energy, thought, and time that could be spent elsewhere (Jorgensen, Rappleyea, & Taylor, 2014). Hence, financial literacy is beneficial for families as evidenced by enhanced family and marital relationships, increased physical and psychological well-being, improved financial decisions, and increased overall quality of life (Jorgensen & Savla, 2010; Jorgensen, Rappleyea, & Taylor, 2014). There have been studies examining financial literacy and quality of life independently (see, Bayram, Thorburn, Demirhan, & Bilgel, 2007; Hogarth, 2002; Lusardi & Mitchell, 2008; Lusardi & Mitchell, 2014; Van Rooij, Lusardi, & Alessi, 2011). The examining of financial literacy on quality of life has not previously been assessed in one, single study of Turkish people. This study responds to the gap in the research literature on the relationship between financial literacy and quality of life.

2. METHOD

2.1. Participants

Participants in this study comprised people in Ankara, Cebeci district, Turkey. Data were collected in 2015. In this study, the total number of participants was determined using the random sampling method, and 600 participants completed the survey. Participants were contacted in person, and surveys were administered individually. For survey interviews, participants were visited at home. Upon arrival at their homes and following the researcher's self-introduction, the researcher explained the study objectives and that participation was entirely voluntary. After obtaining their consent, the survey packets, which participants read and completed on their own, were distributed, and then researcher collected all surveys once they were completed. All the contacted individuals participated.

More than half (51.3%) of the sample were men; 48.7% were women. The average age of the participant's was 31.8 (SD = 12.73). More than half (57.8%) of the sample were single; 42.2% were married. 45.5% of the participants had college or higher degrees, and more than half of the participants (54.5%) had high school or lower degrees. With respect to interviewees' spouses, 89.0% of the spouses held high school or lower degrees, and 11.0% of the spouses held college or higher degrees. More than half (54.5%) of the participants was working and majority (72.5%) of the participants' monthly income was 1501 TL and more.

2.2. Procedure

This study used a written questionnaire to assess participant's attitudes about financial literacy and quality of life. The questionnaire concluded with socio-demographic questions, including age, gender, income, marital status, duration of marriage, level of education, spouse' educational level, having children, working status, family size as well as family-life stage. Questionnaires assessed participants' attitudes toward financial literacy and quality of life using scales drawn from previous studies related to financial literacy and quality of life.

Data analysis began by calculating sample frequencies on all independent variables. Descriptive statistics used for financial literacy questions then Pearson Correlation test used to relationship between financial literacy and quality of life. Then t-test and One Way ANOVA Analyses conducted comparison of financial literacy and quality of life by sample characteristics. Finally, Ordinary Least Square Regression analysis was computed to determine the interrelationships between quality of life and the financial literacy when control socio-demographic variables. For the regressions, some dummy variables had to be created. Gender was already coded as a dummy variable with female = 1 and male = 0 with female as the reference category. Age and family size were continuously measured in years and number, respectively. Educational level was recoded six items (illiterate, primary school, secondary school, high school, college, master's degree or higher) into two categories as high school graduates or less = 1 and college graduates or more = 0. Income was recoded as a dummy variable with 0-1500 TL =0 and 1501TL or

Table 1: Characteristics of the participants (N=600)

Variables	N	%
Gender		
Women	292	48.7
Men	308	51.3
Marital duration		
0-10 years	102	40.3
11- more years	151	59.7
Marital status		
Marriage	253	42.2
Other	347	57.8
Education level		
High school or less	327	54.5
College or more	273	45.5
Spouse' education level		
High school or less	534	89.0
College or more	66	11.0
Working status		
Working	327	54.5
Other	273	45.5
Income TL		
0-1500 TL	165	27.5
1501TL and more	435	72.5
Have child		
No	357	59.5
Yes	243	40.5
Family-Life Stage (%)		
Beginning	86	14.3
Expanding	260	43.3
Contracting	206	34.3
Other	48	8.0
	Min-Max	M/SD
Age	18-75	31.8 (12.73)
Family Size	1-9	3.8 (1.37)

more = 1. Marital status was recoded as a dummy variable with married = 1 and otherwise = 0. Marital duration was recoded six items (less than 1 year, 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21 or more years) into two categories as 0-10 years = 0 and 11 or more years = 1. Working status was recoded as a dummy variable with retired and not working = 0, working = 1. Family-life stage was recoded as a dummy variable with beginning stage = 1 and otherwise = 0, contracting stage = 1 and otherwise = 0 with expanding stage as the reference category. Having children was recoded as a dummy variable with no = 0 and yes = 1. Before conducting regression analysis, data were checked for assumptions of regression analysis (multicollinearity and autocorrelation) and found fit for the procedure.

2.3. Measurement Variables

Dependent variable

Quality of Life: To measure the quality of life, this study used the WHOQOL-Bref Turkish Version. The WHOQOL-Bref is a subset of 26 items taken from the WHOQOL-100. When a Turkish version of 27 questions (27th question is a national one) is used, the environmental area score is named environment-TR. The WHOQOL-Bref produces a profile with four domains and two individually scored items about an individual's overall perception of quality of life and health. The four domain including physical, psychological, social relations and environment scores are scaled in a positive direction with higher scores indicating a higher quality of life. Three items of the Bref reversed before scoring including "To what extent do you feel that physical pain prevents you from doing what you need to do?" "How much do you need any medical treatment to function in your Daily life?" and "How often do you have negative feelings such as blue mood, despair, anxiety, depression?" All the items in the WHOQOL-Bref TR instrument were measured on five-point Likert ratings. Adaptation of this scale was carried out by Fidaner, Elbi, Fidaner, YalçınEser, Eser&Göker (1999). In the current study internal consistency with the Cronbach's α values were .65 for general domain, .74 for physical domain, .74 for psychological domain, .60 for social relation domain, .74 for environment domain. The Cronbach's α value was found to be .90 for WHOQOL-Bref TR. The WHOQOL-Bref TR instrument, its domains, and items are shown in Appendix A.

Independent variables

Financial Literacy: Financial literacy was measured using financial literacy module developed by Van Rooij, Lusardi and Alessi (2011). Financial literacy module was consisting of 16 true-false (also including "don't know" option) questions. The financial literacy questions are composed of two parts. The first set of indices aims to assess five basic financial literacy questions. These questions cover topics ranging from the workings of interest rates and interest compounding to the effect of inflation, discounting, and nominal versus real values. The second set of indices aims to measure eleven advanced financial questions and covers topics such as the difference between stocks and bonds, the function of the stock market, the workings of risk diversification, and the relationship between bond prices and interest rates. Participants were instructed to answer the questions without consulting additional information or using a calculator. The respondents were required to answer true or false to the statements given concerning their financial knowledge. Respondents who answered correctly were given 1 point, while respondents who answered wrongly were given 0 points. All the scale items were summed up to compute the total score. The total score ranged from 0 to 13. The higher score indicates higher financial literacy. The exact wording of the questions measuring basic and advanced financial literacy is reported in appendix B and C.

Demographic variables: The study involved the following demographic variables for participants: age, gender, educational level, spouse's educational level, monthly income, marital status, marital duration, family size, family life stage and having child.

3. RESULTS

Table 2 reported the proportion of respondents providing correct, incorrect, and "do not know" and "refusal" answers to each of the five basic literacy questions. These questions measure the ability to perform simple calculations (in the first question),

Table 2: Descriptive results for basic financial literacy questions (% of respondents) (N=600)

	Numeracy	Compound interest	Inflation	Time value of money	Money illusion
Correct	62.7	49.5	35.2	47.7	53.8
Incorrect	11.2	25.2	27.3	33.2	26.5
Do not know	20.2	17.5	28.3	11.5	14.3
Refusal	6.0	7.8	9.2	7.7	5.3

Percent correct by basic financial literacy question

the understanding of how compound interest works (second question), the effect of inflation (third question), the knowledge of time discounting (fourth question) and whether respondents suffer from money illusion (fifth question). These concepts lie at the basis of basic financial transactions, financial planning, and day-to-day financial decision-making. Most respondents answer the first question correctly; the percentage of incorrect responses is 11.2%. However, the proportion of correct answers decreases considerably, when we consider questions on interest compounding, inflation, time discounting, and money illusion; the proportion of incorrect answers on questions measuring the time value of money or money illusion is around 33%.

Table 3 reported the proportion of respondents according to different levels of financial sophistication. These are much more complex questions than the previous set. The purpose of these questions is to measure more advanced financial knowledge related to investment and portfolio choice. Specifically, these questions were devised to assess knowledge of financial assets, such as stocks, bonds, and mutual funds; there turns and riskiness of different assets; and the workings of the stock market. Moreover, it measures whether respondents understand the concept of risk diversification (which was asked in two separate questions), the workings of mutual funds, and the relationship between bond prices and interest rates. The pattern of answers is much different than that from the previous set of questions. For example, the proportion of correct answers on each question is much lower; only 11% of respondents know about which asset (among savings accounts, bonds, and stocks) gives the highest return over a long time period and only 20.3% know how long-term bonds work. Respondents also display difficulty in if somebody buys a bond of firm B (16.3%). Around 20.5% of respondents know about mutual funds. Not only do a sizable proportion of respondents answer these questions incorrectly but many respondents state they do not know the answers to these questions. For example, while 27.7% of respondents are incorrect about a stock mutual fund is safer than a company stock an additional 44.5% do not know the answer to this question. Similarly, 37% are incorrect about the relationship between bond prices and interest rates, and 32.7% state they do not know the answer to that question. Many respond incorrectly to or state they do not know answers to questions about stocks, bonds, and the workings of mutual funds. The findings in Tables 2 and 3 shows that financial literacy should not be taken for granted. These findings echo the results found in Netherlands surveys such as the De Nederlandsche Bank's Household Survey (DHS) (see, Van Rooij, Lusardi, & Alessi, 2011). This finding provides evidence that respondents often do not understand the question or do not know what stocks, bonds, and mutual funds are, and some correct answers are simply the result of guessing.

Pearson correlation analysis was used to determine the relationship between financial literacy, and quality of life. The results of Pearson correlation analysis for the present study are displayed in Table 4. The Pearson coefficient (r) value for the total financial literacy score and quality of life score was .173 with the value of significant r (2-tailed), $p < .01$. In this case, significant r (2-tailed) was smaller than Alpha. Therefore, there was a significant correlation between financial literacy and quality of life. The positive correlation between these two variables indicates that the higher the financial literacy, the higher the quality of life. This study concluded that financial literacy can lead to positive effect on quality of life. Thus, contributing to financial literacy will help higher quality of life. There was also a significant correlation between basic and advanced financial literacy levels and five domains of quality of life except between advanced financial literacy levels and general quality of life domain.

Table 3: Descriptive results for advanced financial literacy questions (% of respondents) (N=600)

Advanced financial literacy	Correct	Incorrect	Do not know	Refusal
Which statement describes the main function of the stock market?	33.3	20.3	38.2	8.2
What happens if somebody buys the stock of firm B in the stock market?	39.8	21.2	30.7	8.3
Which statement about mutual funds is correct?	20.5	34.2	36.2	9.2
What happens if somebody buys a bond of firm B?	16.3	36.2	37.7	9.8
Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return: savings accounts, bonds, or stocks?	23.3	32.8	36.8	7.0
Normally, which asset displays the highest fluctuations over time: savings accounts, bonds, or stocks?	11.0	46.7	35.7	6.7
When an investor spreads his money among different assets, does the risk of losing money increase, decrease, or stay the same?	25.7	32.0	32.7	9.6
If you buy a 10-year bond, it means you cannot sell it after 5 years without incurring a major penalty. True or false?	20.3	16.2	51.7	11.8
Stocks are normally riskier than bonds. True or false?	30.8	12.2	43.5	13.5
Buying a company fund usually provides a safer return than a stock mutual fund. True or false?	25.5	27.7	44.5	2.3
If the interest rate falls, what should happen to bond prices: rise/fall/stay the same/none of the above?	22.7	37.0	32.7	7.7

Percent correct by advanced financial literacy question

Table 4: Descriptive statistics and pearson correlation matrix between quality of life and financial literacy (N=600)

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. Overall quality of life	94.7 (13.9)	1.00								
2.General	6.8 (1.7)	0.721**	1.00							
3.Physical	26.5 (4.6)	0.826**	0.550**	1.00						
4.Psychological	21.5 (3.9)	0.850**	0.598**	0.657**	1.00					
5.Social	10.8 (2.3)	0.696**	0.417**	0.466**	0.544**	1.00				
6.Environment	30.1 (4.9)	0.828**	0.548**	0.540**	0.603**	0.515**	1.00			
7.Basic financial literacy	2.5 (1.6)	0.179**	0.167**	0.239**	0.158**	0.143**	0.080*	1.00		
8.Advanced financial literacy	2.7 (2.1)	0.116**	0.077	0.130**	0.124**	0.086**	0.087*	0.353**	1.00	
9. Overall financial literacy	5.2 (3.1)	0.173**	0.141**	0.214**	0.168**	0.134**	0.102*	0.766**	0.872**	1.00

Correlation is significant at the 0.01 level (2-tailed), Correlation is significant at the 0.05 level (2-tailed)

This shows a positive correlation between these two variables, indicating that the higher the financial literacy, the higher the quality of life. This finding fits with the ASIC report (2011) that financial literacy contributes to the economic health of society.

Results of statistical analyses comparing financial literacy, quality of life and demographic characteristics are summarized in Table 5. As Table 5 shows, men's financial literacy score (M = 5.88) was higher than women's score (M = 4.44). This result indicates that men were more financial knowledgeable than women. Respondents who have college or more (M = 6.22) educational level reported higher financial literacy levels than respondents who have high school or less (M = 4.31) educational level. Similarly, respondents whose spouse have college or more (M = 6.40) educational level reported higher financial literacy levels than whose spouse have high school or less (M = 5.03) educational level. Working respondents' had higher financial literacy score (M = 5.69) than others (M = 4.57). Respondents who have higher income (M = 5.36) had higher financial literacy score than respondents who have lower income (M = 4.70). Levels of quality of life changed participants' marital duration, educational level, spouse' educational level, income, having child and age. Respondents who have 10 or less years married (M = 98.28) had higher levels of quality of life than respondents who have 11 or more years married (M = 91.47). Respondents who have college or more (M = 97.02) educational level reported higher levels of quality of life than respondents who have high school or less (M = 92.86) educational level. Similarly, respondents whose spouse have college or more (M = 101.04) educational level reported higher levels of quality of life than whose spouse have high school or less (M = 93.97) educational level. Respondents who have higher income (M = 96.18) reported higher levels of quality of life than respondents who have lower income (M = 90.99). Respondents who childless (M = 96.06) reported higher levels of quality of life than respondents who have child (M = 92.83). Younger respondents (M = 96.61) reported higher levels of quality of life than older (M = 86.67) respondents.

Table 6 summarizes the OLS regression results predicting domains of quality of life. Basic and advanced financial literacy and individual characteristics were inserted into the regression towards domains of quality of life. General quality of life significantly varied by basic financial literacy. Participants who reported higher score in basic financial literacy questions were positively associated general domain of quality of life. Financial literacy variables in this model showed about 3.9% of variance in general domain of quality of life ($R^2=0.039$). This reveals that there is a huge potential that other factors explain the general domain of quality of life (Model 1). Age and income were significant predictors of general domain of quality of life. Younger respondents with higher income tend to be having higher levels of overall quality of life. Basic financial literacy score contributed to general domain of quality of life when demographic characteristics were not considered, although it lost its significance in the full model (Model 2). Physical domain of quality of life was significantly associated with basic financial literacy (Model 1). Demographic variables did not make a significant contribution to the physical domain of quality of life (Model 2). The results of the present study also reveal that basic financial literacy was significant predictor of social relationship domain of quality of life (Model 1). Age and marital duration were significantly associated with social relationship domain of quality of life (Model 2). Environment domain of quality of life was significantly associated with age (Model 1). Basic financial literacy did not statistically associated with psychological and environment domains of quality of life. Advanced financial literacy did not make a significant contribution to the any domains of quality of life.

4. CONCLUSION

The current study hypothesized that there is connectivity between financial literacy and quality of life and greater financial literacy would be associated with increased levels of quality of life. The results of this study partially support this notion and expand the literature in important way.

Table 5: Comparison of mean values and standard errors on quality of life and financial literacy by characteristics of respondent (N=600)

Variables	Financial literacy			Quality of life		
	Mean	SD	Test statistics	Mean	SD	Test statistics
Gender			t=5.829***			t=1.127
Men	5.88	3.16		95.38	13.98	
Women	4.44	2.87		94.09	13.98	
Marital status			t=-0.400			t=0.801
Marriage	5.24	3.16		94.21	13.55	
Other	5.14	3.07		95.14	14.30	
Marital duration			t=1.151			t=4.041***
0-10 years	5.52	3.15		98.28	12.86	
11+years	5.05	3.17		91.47	13.35	
Education level			t=-7.840***			t=-3.668***
High school or less	4.31	2.87		92.86	13.95	
College or more	6.22	3.07		97.02	13.70	
Spouse' education level			t=-3.430**			t=-3.921***
High school or less	5.03	3.09		93.97	14.06	
College or more	6.40	2.99		101.04	11.61	
Working status			t=-4.461***			t=-1.059
Working	5.69	3.05		95.30	13.43	
Other	4.57	3.07		94.09	14.62	
Income			t=-2.361*			t=-4.116***
0-1500 TL	4.70	3.07		90.99	15.33	
1501+TL	5.36	3.10		96.18	13.18	
Have child			t=0.913			t=2.787*
No	5.28	3.04		96.06	14.27	
Yes	5.04	3.20		92.83	13.36	
Age			F=24.720			F=3.780**
18-25	5.02	3.05		96.61*	14.09	
26-33	5.14	2.92		95.11	13.94	
34-41	6.28	3.17		95.41	13.14	
42-49	4.76	3.08		92.08	12.42	
50-58	5.12	3.12		92.35	13.68	
59+	4.73	3.78		86.67*	16.16	
Family life stage			F=3.205*			F=0.258
Beginning	4.60*	2.89		95.64	14.57	
Expanding	5.26	3.18		94.95	13.38	
Contracting	5.07	3.02		94.35	13.95	
Other	6.29*	3.22		93.83	16.43	
Family size	r=-0.018	-0.059	P>0.05	r=-0.018		P>0.05

: *p<0.05, ** p<0.01, *** p<0.001.

The findings imply that quality of life may vary by education, age, income, marital duration and having child or not. Further, socio-economic level was found a significant demographic factor for quality of life in the research sample. In general, quality of life scores of participant's with high in socio-economic level seemed to be higher than the participant's with low socio-economic levels. This shows that the participants' with high socio-economic level appeared to be more satisfied with their life than those with low socio-economic levels. It also appears that there is relationship between financial literacy and quality of life. Earlier researchers, including the one reported here, have found evidence of the relationship between financial literacy and quality of life. For example, this study finds that financial literacy may have different effects on quality of life. In detail, basic financial literacy was predictors for three domains of (general, physical, social) quality of life.

TABLE 6: OLS regression of financial behaviours

Independent variables	General		Physical		Psychological		Social		Environment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Basic financial literacy	0.205 (0.087)*	0.155 (0.089)	0.508 (0.247)*	0.440 (0.261)	0.110 (0.204)	0.032 (0.214)	0.267 (0.121)*	0.184 (0.123)	0.254 (0.288)	0.101 (0.302)
Advanced financial literacy	-0.030 (0.066)	-0.008 (0.070)	0.014 (0.188)	-0.096 (0.205)	0.083 (0.155)	0.013 (0.168)	-0.085 (0.092)	-0.137 (0.096)	0.078 (0.218)	-0.025 (0.237)
Gender (Ref: Women)		-0.249 (0.326)		-1.241 (0.953)		-1.477 (0.783)		-0.838 (0.449)		-2.108 (1.103)
Age		-0.054 (0.019)**		-0.092 (0.056)		-0.081 (0.046)		-0.061 (0.027)*		-0.161 (0.065)*
Education level (Ref: College or more)		-0.073 (0.360)		0.832 (1.053)		0.450 (0.866)		0.403 (0.497)		1.404 (1.220)
Spouse' educational level		-0.025 (0.355)		0.477 (1.039)		0.500 (0.854)		0.247 (0.490)		-0.322 (1.203)
Working status (Ref: working)		-0.258 (0.381)		-1.143 (1.113)		-1.072 (0.915)		-0.512 (0.525)		-1.261 (1.289)
Income (Ref: 1501 TL or more)		0.759 (0.324)*		1.311 (.947)		0.627 (0.778)		0.846 (0.447)		0.966 (1.096)
Marital duration (Ref: 11+years)		-0.047 (0.399)		0.443 (1.166)		0.035 (0.958)		1.231 (0.550)*		0.887 (1.350)
Beginning stage (Ref: Expanding stage)		-0.204 (0.442)		0.241 (1.292)		1.147 (1.062)		0.619 (0.609)		2.451 (1.461)
Contracting stage		0.535 (0.432)		1.120 (1.262)		0.473 (1.037)		-0.210 (0.595)		2.045 (1.461)
Have child (Ref: Yes)		0.150 (0.568)		-1.766 (1.661)		-0.140 (1.366)		-0.440 (0.784)		1.041 (1.924)
Family size		-0.087 (0.138)		0.036 (0.403)		0.167 (0.331)		-0.060 (0.190)		0.016 (0.466)
Constant	6.287 (0.277)***	8.447 (1.073)***	24.562 (0.791)***	29.565 (3.135)***	21.141 (0.651)***	24.592 (2.577)***	10.354 (0.387)***	12.880 (1.479)***	29.051 (0.920)***	34.464 (3.630)***
F	2.817	2.098*	2.318	1.446	0.397	1.165	2.487	2.362**	0.582	1.274
R ²	0.039	0.177	0.032	0.129	0.006	0.107	0.035	0.195	0.008	0.115

Our findings have important policy implications. First, we show that financial literacy should not be taken for granted. A majority of participants possesses limited financial literacy. Second, financial literacy differs substantially depending on education, gender, income, working status and family life stage. This suggests that financial education programs are likely to be more effective when targeted to specific groups of the population. Finally, any privatization programs should take into account that, when put in charge of quality of life, financially illiterate individuals may not be satisfied with their life. Thus, to work effectively, privatization programs need to be accompanied by well-designed financial education programs. In relation to quality of life of a society, when people have higher levels of financial literacy, this can result in more satisfied with their life.

Limitations of the present study include the selected nature of the sample. The sample was not a random sample of the country, thus potentially limiting the generalizability of results. Another limitation was the majority of the sample's income levels were middle or high. Thus, higher income might exhibit higher levels of quality of life. Furthermore, we were not able to compare our results to previous studies to investigate similarity and differences. Therefore, comparing this study with similar future studies conducted in other cultures will help researchers.

Despite these limitations, this study has made several contributions to the financial literacy and quality of life literature. For example, it takes an important step by examining the relationship between financial literacy and quality of life. The research findings in this article contribute new evidence in an area where significant policy, at a national level, is currently being developed and implemented. The findings have important implications for policy-makers, educators, regulators and researchers interested in financial literacy and quality of life.

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APPENDIX

Appendix A: Scoring domains of the WHOQOL-BREF TR

Domains and questions WHOQOL-BREF TR	Direction of scaling	Raw domain score	Raw item score
General Area		(2-10)	(1-5)
1. How would you rate your quality of life?	+		
2. How satisfied are you with your health?	+		(1-5)
Domain 1 Physical Area		(7-35)	
3. To what extent do you feel that physical pain prevents you from doing what you need to do?	-(reverse)		(1-5)
4. How much do you need any medical treatment to function in your daily life?	-(reverse)		(1-5)
5. Do you have enough energy for everyday life?	+		(1-5)
6. How well are you able to get around?	+		(1-5)
7. How satisfied are you with your sleep?	+		(1-5)
8. How satisfied are you with your ability to perform your daily living activities?	+		(1-5)
9. How satisfied are you with your capacity for work?	+		(1-5)
Domain 2 Psychological Area		(6-30)	(1-5)
10. How much do you enjoy life?	+		(1-5)
11. To what extent do you feel your life to be meaningful?	+		(1-5)
12. How well are you able to concentrate?	+		(1-5)
13. Are you able to accept your bodily appearance?	+		(1-5)
14. How satisfied are you with yourself?	+		(1-5)
15. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	-(reverse)		(1-5)
Domain 3 Social Relationships Area		(3-15)	
16. How satisfied are you with your personal relationships?	+		(1-5)
17. How satisfied are you with your sex life?	+		(1-5)
18. How satisfied are with the support you get from your friends?	+		(1-5)
Domain 4 Environment Area TR		(9-45)	
19. How safe do you feel in your daily life?	+		(1-5)
20. How healthy is your physical environment?	+		(1-5)
21. Have you enough money to meet your needs?	+		(1-5)
22. How available to you is the information that you need in your daily-to-day life?	+		(1-5)

(Contd...)

Appendix A: (Continued)

Domains and questions WHOQOL-BREF TR	Direction of scaling	Raw domain score	Raw item score
23. To what extent do you have the opportunity for leisure activities?	+		(1-5)
24. How satisfied are you with the condition of your living place?	+		(1-5)
25. How satisfied are you with your access to health services?	+		(1-5)
26. How satisfied are you with your transport?	+		(1-5)
27. What extent is your difficulty of pressure and control in your relationship with people close to you (partner/spouse, colleagues, relatives) in your life?	+		(1-5)

Appendix B. Basic Literacy Questions.

- (1) Numeracy: Suppose you had 100 TL in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? (i) More than 102 TL; (ii) Exactly 102 TL; (iii) Less than 102 TL; (iv) Do not know; (v) Refusal.
- (2) Interest compounding: Suppose you had 100 TL in a savings account and the interest rate is 20% per year and you never with draw money or interest payments. After 5 years, how much would you have on this account in total? (i) More than 200 TL; (ii) Exactly h200; (iii) Less than 200TL; (iv) Do not know; (v) Refusal.
- (3) Inflation: Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (i) More than today; (ii) Exactly the same; (iii) Less than today; (iv) Do not know; (v) Refusal.
- (4) Time value of money: Assume a friend inherits 10,000 TL today and his sibling inherits 10,000 TL 3 years from now. Who is richer because of the inheritance? (i) My friend; (ii) His sibling; (iii) They are equally rich; (iv) Do not know; (v) Refusal.
- (5) Money illusion: Suppose that in the year 2010, your income has doubled and prices of all goods have doubled too. In 2010, how much will you be able to buy with your income? (i) More than today; (ii) The same; (iii) Less than today; (iv) Do not know; (v) Refusal.

Appendix C. Advanced Literacy Questions

- (6) Which of the following statements describes the main function of the stock market? (i) The stock market helps to predict stock earnings; (ii) The stock market results in an increase in the price of stocks; (iii) The stock market brings people who want to buy stocks to get her with those who want to sell stocks; (iv) None of the above; (v) Do not know; (vi) Refusal.
- (7) Which of the following statements is correct? If somebody buys the stock of firm Bin the stock market: (i) He owns apart of firm B; (ii) He has lent money to firm B; (iii) He is liable for firm B's debts; (iv) None of the above; (v) Do not know; (vi) Refusal.
- (8) Which of the following statements is correct? (i) Once one invests in a mutual fund, one cannot withdraw the money in the first year; (ii) Mutual funds can invest in several assets, for example invest in both stocks and bonds; (iii) Mutual funds pay a guaranteed rate of return which depends on their past performance; (iv) None of the above; (v) Do not know; (vi) Refusal.
- (9) Which of the following statements is correct? If somebody buys a bond of firm B: (i) He owns a part of firm B; (ii) He has lent money to firm B; (iii) He is liable for firm B's debts; (iv) None of the above; (v) Do not know; (vi) Refusal.
- (10) Considering a long time period (for example 10 or 20 years), which asset normally gives the highest return? (i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) Do not know; (vi) Refusal.
- (11) Normally, which asset displays the highest fluctuations overtime? (i) Savings accounts; (ii) Bonds; (iii) Stocks; (iv) Do not know; (v) Refusal.
- (12) When an investor spreads his money among different assets, does the risk of losing money: (i) Increase; (ii) Decrease; (iii) Stay the same; (iv) Do not know; (v) Refusal.
- (13) If you buy a 10-year bond, It means you cannot sell It after 5 years without incurring a major penalty. True or false? (i) True; (ii) False; (iii) Do not know; (iv) Refusal.
- (14) Stocks are normally riskier than bonds. True or false? (i) True; (ii) False; (iii) Do not know; (iv) Refusal.
- (15) Buying a company stock usually provides a safer return than a stock mutual fund. True or false? (i) True; (ii) False; (iii) Do not know; (iv) Refusal.
- (16) If the interest rate falls, what should happen to bond prices? (i) Rise; (ii) Fall; (iii) Stay the same; (iv) None of the above; (v) Do not know; (vi) Refusal.