

The effects of financial literacy on the borrowing behaviour of Turkish financial consumers

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Abstract

Our research attempts to measure the effects of financial literacy of Turkish financial consumers on the borrowing behaviour. A questionnaire is administered to a sample of 550 people in the city of Eskisehir. In-depth interviews are undertaken with 10 financial consumers to support the findings. Findings of the study indicate differences in the borrowing behaviour of consumers with different levels of financial literacy. Considering the relationship between financial literacy and borrowing behaviour, we suggest that attempts to increase financial literacy of financial consumers may have important implications in the prevention of excessive borrowing.

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Introduction

As financial markets have been developing rapidly in the recent years, we have been observing a substantial increase in the variety and use of financial instruments throughout the world. Along with the 'democratization of credit', debt loads of consumers have exploded with credit cards, mortgages, consumer credits and similar products (Dynam, 2009).

The liberalization and financialization of the Turkish economy since 1980s paved the way for increasing participation of households in the financial system (Uslu and Gündoğdu, 2011). Turkish economy has been growing rapidly and income per capita has been rising. Increased disposable income and expanded credit options have tempted households to consume more and save less (Matur *et al.*, 2012).

The development of the financial institutions made credit an easily available product and 'easy credit culture' has been expanding. The ratio of total household debt to total household assets rose to 35.1% in March 2011 from 29.6% in December 2009. Similarly, the ratio of individual credits to savings is increasing rapidly. Whereas this ratio was about 48% before the global financial crises it rose to 54% by April 2011. Consumer loans appear to have increased by 54% in 1 year from April 2010 to April 2011 (Turkish Banking Regulation and Supervision Agency Press Release, 2011).

Financial literacy is related to financial behaviour and consequently to borrowing decisions of individuals. People with low financial literacy are found to be more likely to have debt problems (Lusardi *et al.*, 2010). Relationships between debt literacy and financial experiences and debt loads imply higher risk of

overborrowing for people with low debt literacy (Lusardi and Tufano, 2008).

Considering the strong relation between financial literacy and borrowing behaviour detected by previous studies, the purposes of this study are:

- 1 to detect and categorize the level of financial literacy of Turkish financial consumers;
- 2 to determine the factors underlining the borrowing behaviour of financial consumers;
- 3 to investigate whether the borrowing behaviour of the respondents differs with respect to financial literacy levels.

To our knowledge, there is no empirical field study in Turkey, which examines the effects of financial literacy on the borrowing behaviour of Turkish financial consumers.

Theoretical background

Financial literacy

Attention to financial literacy has grown in recent years because of a complex financial services industry that requires consumers to be more actively involved in managing their finances. Many consumers lack a working knowledge of financial concepts and the tools required to make decisions most beneficial to their economic welfare (Braunstein and Welch, 2002). There seems to be a positive relationship between financial education and financial behaviour (Servon and Kaestner, 2008). Financial literacy is a process which enables financial consumers and investors to improve comprehension of financial instruments and concepts, identify

financial risks and opportunities, make informed choices and perform efficient activities to increase financial welfare (Mason and Wilson, 2000).

Excessive borrowing

Materialism and consumerism appear to be dominating the lives of generations of the 21st century all over the world. Credit usage is booming due to the significant relationship between materialism and attitude towards borrowing and credit overuse (Richins, 2011). Increasing costs of health care, education and housing costs are forcing consumers to spend more than they earn and even spend retirement income. Due to stagnant and declining wages, middle- and lower-income families usually borrow not to overconsume but to keep up with cost of living attempting to make ends meet, and credit cards are used to close the gap between what is earned and what is needed to pay bills (Dickerson, 2008).

Especially low- and middle-income families are the most susceptible groups that can experience economic difficulties during crises and consequently face problems of excessive borrowing and over-indebtedness (Tabb, 2005). Risk categories for over-indebted are people aged 16–29, families having children and low-income households (Allwood *et al.*, 2010).

Borrowing decisions of consumers seem to be under the influence of biases (cognitive illusions) and heuristics (mental short cuts). Individuals tend to overvalue present benefits and underestimate future costs, hence prefer buying now and pay later to maximize consumption and satisfaction. Overconfidence increases inclination to underestimate probabilities of negative events and risk of overborrowing (Kilborn, 2005).

Wrong borrowing decisions may lead to over-indebtedness and may ruin consumers' credibility, which in turn may have detrimental effects on consumers' long-term financial welfare and living standards. For over-indebted households, usually a lower consumption/income ratio is reported than normal households as they reduce consumption to repay debts (Gianni *et al.*, 2007). Over-indebted consumers are more likely to experience physical and mental health problems, depression-related symptoms of illness, thoughts of suicide and feelings of helplessness (Persson, 2007). Over-indebtedness may produce a lower standard of living for the household and may affect the well-being of children with basic needs unsatisfied in the family. Over-indebted people may face difficulties in finding employment in case of unemployment. Over-indebted consumers are also prone to social exclusion (Persson, 2007). Over-indebtedness may lead to public costs related to social housing, legal expenses, loss of productivity due to stress and increase in healthcare expenses (Allwood *et al.*, 2010).

Excessive consumption

Consumption affects how people feel emotionally and physically, and consumption that gives immediate pleasure may prove harmful to lasting well-being. Individuals who desire income and possessions tend to be less happy and have lower self-esteem, more anxiety and poorer social relationships than the rest of the population (Quelch and Jocz, 2007). Psychologists find that a consumption-dominated lifestyle is detrimental to happiness and life satisfaction (Csikszentmihalyi, 1999; Myers, 2000).

Statement of hypotheses

Lusardi and Mitchell (2007) reported that financial illiteracy is widespread among young and older people in the US. Similarly, low debt illiteracy is found to be prevalent among certain groups such as women, elderly, and people with low income and wealth (Lusardi and Tufano, 2008).

H1: Financial literacy levels of financial consumers are statistically significantly different with respect to demographic characteristics.

Lack of financial sophistication is one of the most important factors that may lead to overborrowing. Moreover, low financial literacy is usually associated with high cost of borrowing (Lusardi and Tufano, 2008).

H2: Borrowing behaviour of financial consumers is statistically significantly different with respect to financial literacy levels.

Consumer financial behaviour is also found to be different between people with different social class (Henry, 2005), socio-economic status (Chang, 2005) and demographic characteristics. The report on 'Personal Over-indebtedness in Northern Ireland', which examined individual level of borrowing and attitude towards borrowing, reported that according to 50% measure (% of income spent for serving debt), 11% of the people surveyed were over-indebted. Of the people who are over-indebted, 60% were female, 61% were aged 25–49, 68% were married, 65% had dependants, 64% were economically active, and 35% had lower income (Woods, 2006).

H3: Borrowing behaviour of financial consumers is statistically significantly different with respect to demographic characteristics.

Methodology

Research and questionnaire design

Our research attempts to measure the effects of financial literacy of Turkish financial consumers on the borrowing behaviour using both qualitative and quantitative research methods.

The questionnaire consists of three parts. The first part is comprised of 21 statements attempting to measure financial literacy levels of Turkish financial consumers. Statements about financial literacy used in this part were adapted from previous studies (Jump Start Coalition for Personal Financial Literacy, 2007; Anderson *et al.*, 2008; Temizel, 2010). A total of 21 statements were thus presented, and respondents were asked to express their response on three options: '1 = true', '2 = false' and '3 = do not have an idea'.

The second part contains statements about the borrowing behaviour of Turkish financial consumers. We conducted in-depth interviews with 10 individuals living in Eskişehir to improve our insight about borrowing decisions of financial customers. The participants of the interview were chosen from different socio-demographic groups to enhance diversity. The statements were devised by the authors considering the observations of the authors about the experiences of the people interviewed. Moreover, to revise the statements that reflect the borrowing behaviour of

Turkish financial consumers, the questionnaire was conducted with a judgemental sample (27 people) in Eskisehir, Turkey. Feedback from the sample was used in finalizing the structured questionnaire, which was used in the field survey. The data were also used to support the quantitative findings.

The interviewer generated a total of 27 items. Three specialists and the interviewer agreed that 10 of the 27 items either overlapped in content or were not directly related with the target constructs of the study. Hence, 17 items were determined to be utilized for the study. A total of 17 statements were thus presented, and respondents were asked to indicate their preference on a 5-point Likert scale, ranging from '1 = strongly agree' to '5 = strongly disagree'.

The last part of the survey device includes demographic variables and individual differences of the sample (gender, age, education, monthly income and marital status).

Sample

The sample is comprised of people living in the province of Eskisehir, Turkey. Debt per capita is TL (Turkish lira) 1947 in Turkey and debt per capita is slightly above average for Eskisehir – TL 1960 – which is eighth place in Turkey (ATO, 2011). Thus, the sample in Eskisehir is expected to reflect the average situation in Turkey. The sampling method used is snowball sampling.

A self-administrated and researcher-aided questionnaire was distributed by four trained researchers. The questionnaires were answered by respondents in the researchers' presence, in homes and business venues. The researchers first approached potential respondents. Due to the sensitivity of the issue, researchers first briefly explained the research purpose, and then gave the questionnaires to willing participants. In cases of refusal, the researchers thanked the individual and approached another candidate. The explanation and the filling out of the questionnaire took approximately 15 min. A total of 650 questionnaires were distributed, 550 of which were completely answered, resulting in a return rate of 84.6%.

Data analysis

In order to categorize the level of financial literacy of the respondents of the survey, we use cluster analysis. With the purpose of determining whether financial literacy levels of respondents differ with respect to demographic characteristics, we apply chi-squared test. We investigate the effects of financial literacy of Turkish financial consumers on the borrowing behaviour by principal component factor analysis. We also examine whether the borrowing behaviour of the respondents differs with respect to financial literacy levels and demographic variables.

Validity and reliability

Content validity of the study was established through the adoption of validated instruments by previous studies (Cowton, 1998). Two types of reliability were established: Cronbach's internal consistency (alpha) and split-half. Alpha coefficients on importance ranged from 0.88 to 0.95, and split-half coefficients ranged from 0.82 to 0.88. Alpha coefficients on use ranged from 0.87 to 0.94 and split-half coefficients ranged from 0.78 to 0.90. As can be seen

from Table 4, Cronbach's alpha values of four factors were above 0.70, indicating a satisfactory level of internal consistency among items in each factor.

Findings and results

Characteristics of sample

The sample consists of 550 Eskisehir citizens, of whom 39% were male and 61% were female, and the percentage of single and married respondents was 42 and 58 respectively. Twenty-nine percent of the sample is in 18–25 age range, 25% in 26–35 age range and 29% in 36–45 age range. The ratios of respondents in 46–55, 56–65 and over 66 age ranges are 11, 4 and 2% respectively. There are a few people (5%) in the sample without any formal education but who can read and write. Education status consisted of college-university degree (48%), secondary school (28%), primary school (10%) and postgraduate (10%). The respondents' average monthly incomes were grouped as TL 699 and less monthly income (9%), TL 700–1500 (28%) and TL 1501–2500 (28%), TL 2501–3500 (18%), TL 3501–4500 (8%), TL 4501–5500 (4%), and TL 5501 and more income (5%) (Table 1).

Cluster analyses of financial literacy

We applied K-means cluster analysis to categorize the level of financial literacy of the respondents of the survey. We developed

Table 1 Demographic characteristics of respondents

	Frequency	%
Gender		
Male	215	39
Female	334	61
Age		
18–25	161	29
26–35	137	25
36–45	159	29
46–55	62	11
56–65	19	4
66 and over	12	2
Marital status		
Single	231	42
Married	319	58
Education		
Literate	5	1
Primary school	54	10
Secondary school	154	28
College/university	262	48
Postgraduate	74	14
Monthly income		
TL 699 and <	49	9
TL 700–1500	155	28
TL 1501–2500	154	28
TL 2501–3500	98	18
TL 3501–4500	44	8
TL 4501–5500	22	4
TL 5501 and >	27	5

Note: $n = 550$.

Table 2 Financial literacy levels of respondents

		<i>n</i>	%
Clusters of financial literacy	Cluster 1. High level	71	13
	Cluster 2. Medium level	259	47
	Cluster 3. Low level	220	40

three clusters (high, medium, low) to express the financial literacy levels. In Table 2, we present the number and the percentage of the individuals in each cluster.

About 13% of the respondents belong to the high-level cluster, 47% belong to the middle-level cluster and 40% belong to the low-level cluster.

Profile of financial literacy levels of respondents

To determine whether financial literacy levels of respondents differ with respect to demographic characteristics, chi-squared test was utilized.

Table 3 shows the chi-square results for demographic characteristics and financial literacy levels of respondents. It appears that there are statistically significant differences among financial literacy levels with respect to the following characteristics of the respondents: gender, education (significant at $P < 0.05$) and marital status (significant at $P < 0.1$) (Table 3).

The percentage of women and married respondents is higher in the cluster of high level of financial literacy compared with men and single respondents. The percentage of high-educated respondents is higher in the cluster of high level of financial literacy compared with low-educated respondents.

Factor analysis

There was a total of 17 scale items related to the effects of financial literacy of Turkish financial consumers on the borrowing behaviour; thus, principal component factor analysis was used to sort out and classify these variables as well as to convert them into main factors. In parallel to Kaiser's (1974) criteria, only factors with eigenvalues greater than 1 were retained; and only items with factor loadings and communalities of greater than 0.41 were included in the final factor structure. Cronbach's alpha values for each dimension were computed to confirm the factor's internal consistency. To apply factor analysis on items underlying the effects of financial literacy of Turkish financial consumers on the borrowing behaviour, it is necessary to test the Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy (Zhang *et al.*, 2003). For the attitude variables, KMO was 0.87, indicating that the sample was adequate for factor analysis (Kaiser, 1974). The Bartlett test for sphericity was 3163.49 ($P < 0.01$), indicating that the hypothesis variance and covariance matrix of variables as an identity matrix were rejected; therefore, factor analysis was appropriate. Factor analysis was conducted with 17 items, and 2 of the items were dropped after the reliability analysis.

According to principal axis analysis, three factors had an eigenvalue equal to or greater than 1.0 (Kaiser, 1974), explaining a total of 55.47% of the variance. These factors were termed: *excessive borrowing*, *excessive consumption* and *informed credit use*. In the

factor analysis, the percentage of the variance explained by each factor indicates the relative significance of the factors. Accordingly, the first factor, labelled excessive borrowing, explained a large part (32.02%) of the total variance, having a greater significance than the other two factors. This factor contained six items, relating to the borrowing behaviour of respondents. The second factor that contained five items, labelled excessive consumption, explained 16.02% of the variance. The last factor, labelled informed credit use, explained 7.42% of the variance. It consists of four items related to credit use such as house loans, car loans and consumer loans. All three constructs meet the criterion that a factor loading should be equal to or greater than 0.41. The Cronbach's alphas were greater than 0.76 and the total of scale reliability was 0.85. As seen from Table 4, three factors [excessive borrowing (0.81), excessive consumption (0.76) and informed credit use (0.84)] had higher scores than the recommended level of 0.70 (Nunnally, 1978) (see Table 4).

We investigated whether the borrowing behaviour of the respondents differs with respect to financial literacy levels. As seen in Table 5, the results of the Kruskal–Wallis H -test show that financial consumers belonging to different financial literacy levels (high, medium, low) behave differently about their borrowing decisions and the difference was statistically significant in case of two factors out of three factors, namely excessive borrowing and informed credit use.

To examine the source of the difference in the borrowing behaviour with respect to different financial literacy levels of the respondents, post hoc analysis was conducted using Dunnett's C -test (unequal variance) that reported the difference to be significant at 5% level. Because the Kruskal–Wallis H -test was significant for excessive borrowing behaviour (factor 1) and informed credit use behaviour (factor 3), post hoc test was used to analyse the differences. In Dunnett's C -test, respondents with medium and low financial literacy levels are found to be different from the respondents with high financial literacy level for excessive borrowing behaviour. Respondents with high financial literacy level do not tend to demonstrate excessive borrowing behaviour (mean score is higher than the other clusters). Respondents with the medium and high financial literacy levels are found to be different from the respondents with low financial literacy level for informed credit use behaviour. Respondents with high financial literacy level tend to demonstrate informed credit use behaviour (mean score is lower than the other clusters).

Differentiations of borrowing behaviour with respect to demographic variables (gender, age, education, income and marital status) were tested using nonparametric tests. Gender and marital status were analysed with the help of Mann–Whitney U -test whereas Kruskal–Wallis H -test was used to analyse other demographic variables – age, education, income (Table 6).

The Mann–Whitney U -test shows that respondents are statistically significantly different with respect to gender regarding factor 1 and factor 3. Hence, women tend to be more likely to display excessive borrowing behaviour; however, they tend to make more informed credit use decisions. The statement of Leyla, one of the financial consumers interviewed, supports the inclination of women to exhibit excessive borrowing behaviour:

I like following the trends in fashion for my clothes. I spend a lot of money for shoes, bags and accessories. Thus, I resort to my credit card to pay in installments. Thus, I end up with

Table 3 Chi-square results for demographic characteristics and financial literacy levels of respondents

		Financial literacy levels			χ^2	df	P
		High (%)	Medium (%)	Low (%)			
Gender	Male	7	47	46	12.38	2	0.02**
	Female	17	47	37			
Age	18–25	11	49	40	12.22	10	NS
	26–35	12	47	41			
	36–45	18	45	37			
	46–55	13	52	35			
	56–65	5	47	46			
	66 and over	–	25	75			
Education	Literate	–	60	40	17.28	8	0.02**
	Primary school	7	32	61			
	Secondary school	11	46	43			
	College/university	14	51	35			
	Postgraduate	19	47	34			
Monthly income	TL 699 and <	8	49	43	11.16	12	NS
	TL 700–1500	8	48	44			
	TL 1501–2500	16	44	40			
	TL 2501–3500	16	51	33			
	TL 3501–4500	13	50	39			
	TL 4501–5500	9	50	41			
	TL 5501 and >	22	37	41			
Marital status	Married	16	45	39	5.37	2	0.06***
	Single	9	50	41			

** $P < 0.05$, *** $P < 0.1$.

df, degrees of freedom; NS, not significant.

Table 4 Factors and items related to borrowing behaviour

Factors	Factor loadings (β)	Mean	SD	Eigenvalues (% of variance)	Alpha (α)
Factor 1: Excessive borrowing (six items)				5.44 (32.02)	0.81
I withdraw money from my credit card account to pay my credit card bills.	0.77	4.48	1.03		
I would use credit if it has attractive features even if I do not need credit.	0.74	4.28	1.14		
I use consumer credit for my holiday expenses.	0.69	4.34	1.14		
I have difficulties managing my debt as I use a large number of credit cards.	0.69	4.38	1.12		
I finance the gap in my budget with consumer credits.	0.57	4.21	1.04		
I would rather use consumer credit than pay cash when I buy a durable good.	0.52	4.02	1.25		
Factor 2: Excessive consumption (five items)				2.72 (16.02)	0.76
I spend all the money I earn.	0.82	3.26	1.42		
My salary account has a negative balance.	0.73	3.75	1.24		
My monthly expenses exceed my monthly income.	0.70	3.32	1.27		
I have a high amount of credit card debt because I make purchases on instalments with my credit card.	0.65	4.38	1.12		
I would rather consume now than delay my needs.	0.60	3.75	1.24		
Factor 3: Informed credit use (four items)				1.26 (7.42)	0.84
I compare the costs of different banks before I use credit.	0.89	2.41	1.56		
I consider commissions when I compute the effective cost of the credit.	0.84	2.72	1.63		
I can compare the costs of credits with different maturities.	0.83	2.70	1.59		
I read the credit contract before I use credit.	0.69	2.92	1.60		

SD, standard deviation.

1 = strongly disagree; 5 = strongly agree.

	Financial literacy levels	<i>n</i>	Mean rank	Chi-square	df	<i>P</i>
Excessive borrowing	High	71	313.45	7.80	2	0.02**
	Medium	259	280.49			
	Low	219	256.04			
Excessive consumption	High	71	294.35	2.09	2	NS
	Medium	259	278.37			
	Low	219	264.74			
Informed credit use	High	70	228.26	25.10	2	0.01*
	Medium	259	252.43			
	Low	218	314.31			

P* < 0.01, *P* < 0.05.

df, degrees of freedom; NS, not significant.

Table 6 Differentiation of borrowing behaviour according to demographics

	Gender		Age		Education		Income		Marital status	
	Mann–Whitney <i>U</i>	<i>P</i>	Chi-square	<i>P</i>	Chi-square	<i>P</i>	Chi-square	<i>P</i>	Mann–Whitney <i>U</i>	<i>P</i>
Excessive borrowing	31 794	0.02**	18.50	0.03**	3.65	NS	11.30	NS	31 274	0.01*
Excessive consumption	35 347	NS	11.83	0.03**	1.90	NS	9.67	NS	36 256	NS
Informed credit use	32 057	0.05**	8.39	NS	14.81	0.01*	16.07	0.01*	33 271	NS

P* < 0.01, *P* < 0.05.

NS, not significant.

high credit card bills. (Leyla, female, 38 years old, married, postgraduate, TL 5501 and over)

The results indicate that respondents are statistically significantly different with respect to age regarding factor 1 and factor 2. The difference seems to be evident especially between young and middle-aged consumers for factor 2. Hence, it appears that young consumers (aged 18–25) are more likely to exhibit excessive consumption behaviour relative to middle-aged (aged 46–55) consumers. During the interviews, Engin gave clues about their consumption patterns, which supported the excessive consumption trends of the young consumers:

I like buying high-tech products. I usually try to buy the latest version of mobile phones. Although it is expensive, it helps me to get a good first impression when I meet new people. (Engin, male, 24 years old, single, graduate, TL 1501–2500)

We find that the respondents are statistically significantly different with respect to education level regarding factor 3. There seems to be a significant difference between groups of university and postgraduate education. Higher-educated people seem to demonstrate more informed credit behaviour. One of the participants of the interview, Aslı, made statements to provide support for the inclination of higher-educated people to make informed credit decisions:

Before I use consumer credit, I make a research and learn the interest rates and commissions of different banks. I make my final decision after I compare these costs. (Aslı, female, 48 years old, married, postgraduate, TL 4501–5500)

It is found that respondents are statistically significantly different with respect to income level regarding factor 3. High-income groups tend to make more informed credit use decisions relative to low-income groups.

What Mert and Aslı, two high-income consumers interviewed, say is in parallel with our findings, as they tend to display more informed credit use behaviour:

I do not trust bankers. I ask my lawyers for advice when I have to use credit from a bank. (Mert, male, 32 years old, single, postgraduate, TL 5501 and over)

I always read the credit contract before I use a bank credit. The fact that they are written in very small letters make me think they are deceiving me. (Aslı, female, 48 years old, married, postgraduate, TL 4501–5500)

Respondents are found to be statistically significantly different with respect to marital status regarding factor 1. Married respondents are more likely to show excessive borrowing behaviour compared with single respondents. The statements of Ayşe and Emre, who are married participants, imply that married consumers are more inclined to exhibit overborrowing behaviour:

Especially around the period when the schools open, we have a lot of expenditures for our children, so I use my credit card excessively and eventually I have to use consumer credit to pay my credit card bills. (Ayşe, female, 27 years old, married, secondary school graduate, TL 1501–2500)

My wife is working. Since we have two salaries, it is easier for us to use credit to spend for high-tech purchases, family vacations and even buying a new house. (Emre, male, 37 years old, married, graduate, TL 3501–4500)

Conclusion

Excessive borrowing has become a significant and widespread problem that threatens the lives of financial consumers, as credit became an easily accessible instrument for financial consumers in the contemporary 'credit society'. Lack of financial literacy

is one of the most important factors that may lead to wrong borrowing decisions.

The findings of the study infer that financial consumers belonging to different financial literacy levels behave differently about their borrowing decisions. Financial consumers with high financial literacy levels are expected not to demonstrate excessive borrowing behaviour and to demonstrate informed credit use.

As stated by Lusardi and Tufano (2008), lack of financial knowledge is one of the most important factors that may promote excessive borrowing. The findings of our study imply that financial consumers with a higher level of financial literacy appear to be less likely to exhibit excessive borrowing behaviour and more informed credit use behaviour. Hence, our findings support the relationship between financial literacy level and overborrowing behaviour. Therefore, attempts to increase financial literacy of financial consumers may have important consequences in the prevention of excessive borrowing. Financial education programs especially targeted for relatively more risky social groups may prove to be useful to help financial consumers to refrain from overborrowing.

As with all research, this study is not free of some limitations, and it suggests possibilities for future research. The current study focused specifically on a limited number of people. The respondents in the study were limited to those who live in a single Turkish city. Results may not adequately represent the total population in Turkey. Future research should focus on determining the risky groups for the over-indebtedness problem in the Turkish society with a sample comprising different cities of Turkey and devising specific financial literacy programs targeting risky social groups.

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