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Does good financial behavior reduce the negative impact of financial fragility on individuals' financial optimism? The never-ending Lebanese crisis case

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Abstract

This study examines the negative link between financial optimism and financial fragility in a time of a severe crisis, focusing on the positive impact of good financial behavior on this relationship, while also taking into consideration demographic factors. A comprehensive survey of 328 participants, data were collected during the 2019–2021 Lebanese crisis, and a logistic regression analysis was used to verify the hypothesis. This study is the first of its kind in Lebanon and the Middle East and sheds light on the undertreated subject of financial optimism, fragility, and behavior among the Lebanese population. The results of the study show that financial fragility has a negative impact on individuals' financial optimism, but that good financial practices can mitigate this relationship. Financial optimism is affected by individuals' income level but is not affected by other demographic factors such as gender, marital status, education levels, and the number of financial dependents; good financial behavior is found to increase financial optimism among Lebanese individuals, regardless of demographic factors. The findings have significant policy implications, indicating the need for policymakers to prioritize promoting positive financial behavior and integrating financial education into school curricula.

Keywords: Crisis, Financial behavior, Financial fragility, Financial literacy, Financial optimism, Logistic regression.

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1. Introduction

Optimism is a critical component of economic decision-making [1] in literature. Financial optimism is negatively linked to financial fragility [2-4] and good financial literature reduces this negative link. Additionally, highly educated people and older people are more pessimists [1, 2, 5, 6].

Since October 2019, Lebanon has been experiencing a severe economic, financial and political crisis identified by the World Bank in the mid-1990s [7]. As a result, a rise in uncertainty in the country is witnessed along with a wave of immigration [8].

This study is important on several levels. First, it explores financial fragility and optimism in Lebanon which have been long discussed but have not been scientifically examined before. The study also discusses the impact of good financial behavior on individuals' financial optimism.

The objective of this study is to fill the gap regarding financial optimism determinants in Lebanon. Specifically, the study focuses on the perceptions of different generations of the 2019-2021 Lebanese crisis and its negative impact on them. The researcher focused on the effect of good financial behavior on the negative relationship between financial optimism and financial fragility. Few studies focus on the impact of financial literacy but we take the study a step further and consider the impact of financial behavior which may include other determinants such as financial self-control [9].

Two main questions were raised: Is financial fragility negatively related to financial optimism in Lebanon? Does financial behavior affect this relationship?

The empirical findings demonstrate that financial fragility has a detrimental effect on a person's financial optimism level. The outcomes are reliable when tested using different approaches and they have significant policy ramifications. For a higher level of financial optimism, public policies should aim to improve people's financial conduct whether by improving their financial literacy from a young age or by promoting better financial self-control [9].

This paper is divided into the following sections: The literature is reviewed in more detail in the second section with an emphasis on theoretical, conceptual and empirical topics. Research methods and findings are presented in the third section. The research findings are discussed in the fourth section. The contributions and consequences of practice and research are described in the fifth part.

2. Literature Review

The following section examines pertinent theoretical, conceptual and empirical literature.

2.1. Theoretical Framework

Social cognitive theory (SCT) is one of the most influential theories for illuminating changes in individuals' and organizations' financial behavior [10]. It was formulated by Wood and Bandura [11] in the field of psychology with the intent of better comprehending how social factors influence people's learning. Social cognitive theory (SCT) assumes that environmental, individual and behavioral factors all have a significant impact on behavioral change [12].

2.2. Hypothesis Construction: The Financial Optimism Determinants

2.2.1. Financial Optimism and Financial Fragility

In times of crisis, people face problems meeting their financial needs. They are vulnerable and are not prepared for further financial disruptions. We can affirm that Lebanese resistance has dropped due to the crisis. Lebanese millennials (89-96) and generation Z (96-2012) suffered from financial fragility for the first time during the 2020 Lebanese crisis. Their financial optimism was also lower [8]. This financial fragility is usually translated into individuals' financial and investment behavior. Expectations and sentiments play an important role in financial decision-making. Negative sentiment has developed among the Lebanese population as a result of the pandemic and the financial, economic and political crisis leading to a less optimistic perspective on future expectations [5].

Financial optimism is defined by how well households and investors perceive their future financial and economic situation [5]. It is measured by the difference between an individual's life expectancy and their perceived life expectancy [3]. It is also estimated by the individual's future financial expectations [3].

Financial optimism is measured by an index calculation approach used by several authors [3, 5]. The indicator compares predictions for the present and the future in relation to inquiries about personal financial conditions, business and local and national financial situations.

Decisions about household spending, saving and investing are determined by optimism for achieving financial security [13].

Researchers generally concur that women are less optimistic than men [1]. Women are less positive about marriage expectations [6], the presidential election [14], economic conditions and personal finances [15]. In addition, financial fragility is stronger for women than men [3]. Furthermore, getting married is associated with less optimism [1] and lower optimism is related to higher educational achievement [1].

Based on the previously discussed literature, we shall seek to prove that the Lebanese population feels it is financially weak during the crisis. As a result, we shall prove the negative link between financial optimism and financial fragility in Lebanon by verifying the following hypothesis:

H1. Financial optimism is negatively linked to an individual's financial fragility during a crisis.

2.2.2. Financial Optimism and Financial Behavior

The financial behavior of people is defined in the financial and behavioral literature as how they make daily financial decisions such as spending, saving and sensible investment [16-18]. Financial behavior also refers to any features of human conduct that are connected to and relate to the control of money and other resources [19].

Financial behavior is assessed by looking at people's credit histories, credit ratings, health and life insurance coverage amounts, the sorts of investments they have made and their financial retirement plans [16]. A person who manages their money well never has a check bounce and always makes timely, full credit card payments. Financially responsible people maintain weekly checkbook balances, regularly review their spending plans and project their monthly income and costs [17]. Additionally, people who are financially responsible save more money for their retirement [20] and generate sufficient

earnings from a diverse investment portfolio [21]. They are also less indebted [22] and less borrowing fees [23]. Therefore, those who manage their money properly are prepared to handle unpredictability and financial disruptions in the future [24]. As a result, a variety of elements that affect an individual's financial behaviour determine whether they are financially well-behaved or not. These factors include three key evaluation areas: the administration of an individual's current finances, investment choices and future financial planning. Individuals who can effectively handle all these areas are considered to have good financial behaviour.

The adverse link between optimism and financial fragility may be reduced by good financial behavior [3].

H2. Financial optimism's negative link to financial fragility is reduced due to good financial behavior during the crisis.

3. Data and Methodology

3.1. Data Description

The data used for this paper is based on the collected data by Mawad, et al. [9]. The sample survey included 328 participants (157 men and 171 women). Details are presented in Appendix A Table 7. Participants were distributed among three different generations with an average age of 43.53, 29.46, and 20.98 respectively for generations X, Y, and Z. 176 were single, three hundred had advanced degrees and 247 have a high income. Individuals from generation X often had more than one person financially dependent on them.

3.2. Variable Selection

3.2.1. Dependent Variables

Equation 1 has financial optimism as the dependent variable and it is measured by life optimism, perceived financial optimism and financial self-confidence.

Life optimism is the difference between how long an individual expects to live and his objective life expectancy based on medical research [25, 26].

Perceived financial optimism is measured by the individual's feelings about the country's financial situation and his own financial situation. It is an evaluation of the individual's financial situation in terms of changes in income in the past year and coming years.

Financial confidence is derived from whether the individual believes he or she can improve his or her financial situation regardless of the country's financial situation.

Combining the outcomes of life optimism, perceived financial optimism and self-confidence, we obtain the financial optimism measure which is the median score of the three results. Details of the variable construction are presented in Table 1.

3.2.2. Independent Variables

Financial behavior and financial fragility are independent variables used in this research to verify Equation 1 in addition to control variables.

The variable individual's financial behavior used was retrieved from Mawad, et al. [9]. Mawad, et al. [9] were able to gauge the variable individual's financial behavior with the help of a series of nine questions. The questions covered whether the person sets a monthly personal budget, evaluates the budget at the end of the month, plans it to meet his financial objectives, pays his bills and loan payments on time, saves money on a regular basis, has an emergency fund, pension fund and gets credit when necessary [9]. Table 8 in Appendix A shows a summary of how the financial behavior variable was constructed by Mawad, et al. [9].

On the other hand, the financial fragility used to verify the linkage in question is measured by the confidence of the individual to come up with 2000 USD if he needs to. Variable construction details are presented in Table 2.

In addition, the demographic control factors include age, generation, gender, marital situation, number of individuals financially dependent on the respondent, educational level, and monthly income level [27].

Age is a continuous independent variable. Gender and marital status are considered dummy independent variables. Females are assigned the value of 1 and males are assigned the value of 0, as of 1 for married individuals and 0 for single individuals.

Education levels are assigned the value of 1 for highly educated individuals (university and graduate) and 0 for low-educated (high school and primary school) individuals.

Income levels are assigned the value of 1 for high-income individuals (income over 10,000,000 LBP) and 0 for low-income (income less than 10,000,000 LBP) individuals.

The number of dependents is a discrete variable.

3.3. Models and Methodology

3.3.1. Conceptual Model

A conceptual model was constructed to examine the relationship between demographics, financial optimism, financial fragility, and financial behavior. A conceptual model of financial optimism has two fundamental components in the literature: financial fragility and other social-personal determinants.

As mentioned in the literature review, financial optimism is a mixture of the perceived future financial and economic situation [8], the difference between an individual's life expectancy and their perceived life expectancy [10] and the individual's future financial expectations.

Table 1.

Financial optimism variable construction.

Financial optimism variable	Measurements
Life expectancy	Age Smoker/Non-smoker Number of drinks per week Medical issues/None Exercise/None Anxiety/None
Description	Smoking decreases life expectancy by an average of 5 years. 5 drinks per week add an average of 1.5 years to life expectancy. A good attitude towards health adds an average of 7 years to your expected age. Exercise adds an average of 1.5 years to your life expectancy. Anxiety shortens your life by an average of 3 years [25]. Life expectancy for a male in Lebanon is 77 and it is 80 for a female [26]. Adding the factors: a female aged 40 who smokes, takes 5 drinks a week, has a good attitude towards her health, exercises and has no anxiety has a life expectancy of $80-5+1.5+7+1.5+3=88$ years.
Perceived life expectancy	"How many more years do you expect to live?"
Life optimism	Perceived life expectancy: life expectancy The positive difference is allocated a binary result of 1 and the negative difference is allocated a binary result of 0. 0 reflects a pessimistic individual and 1 reflects an optimistic individual.
Perceived financial optimism	"Do you believe that your expected income will grow over the next year?" "Did your income grow over the past year?" "Do you believe the financial and economic situation in Lebanon will improve in the next 5 years?"
Description	"Yes" means that the individual under study has an optimistic view, translated into 1. "No" or " maybe" means that the individual under study has a pessimistic view, translated into 0.
Financial confidence	"Do you believe you have the ability to face financial challenges head-on and improve your finances despite the bad economic situation?"
Description	1 for an answer of " yes" and 0 for answers of " no" and " maybe". 0 reflects a low-confident individual and 1 reflects a highly confident individual.

Table 2.

Financial fragility variable construction.

Financial fragility evaluation	Measurements
Financial fragility	"Are you confident you could come up with \$2000 if the need arises?"
Description	"Yes" means that the individual under study is not financially fragile as indicated by 0. "No" or " maybe" means that the individual under study is financially fragile as indicated by 1. 1 reflects the existence of financial fragility for individuals. 0 reflects a lack of financial fragility for individuals.

Financial fragility is the concept of being able to come up with extra money if needed. According to Mawad, et al., financial behavior, budgeting, self-evaluation of finances, financial allocations, financial organization, saving and borrowing and budget planning are the six pillars of financial fragility.

Equation 1 depicts how dependent and independent variables interact linearly in practice.

$$\text{Financial optimism} = \alpha_0 + \alpha_1 \text{ financial fragility} + \alpha_2 \text{ financial behavior} + \alpha_3 \sum \text{CV} + \varepsilon \quad (1)$$

Where *financial optimism* is the dependent variable. Financial fragility and financial behavior are independent variables in addition to other control variables (CV). ε is an independent error term.

3.3.2. Methodology

To examine the consequences of the assumed independent variables on financial optimism, logistic regression was performed in this study because the dependent variable of financial optimism is binary [28-31]. The independent variables are mixed with financial fragility and financial behavior both are binary. Age is a continuous variable and generation is categorical. Gender, marital status, education levels and income levels are binary variables.

4. Empirical Results

4.1. Univariate Analysis

The variables included in the study are all binary except for age and the number of financially dependent individuals which have discrete and continuous forms respectively.

Table 3 indicates [9] that Lebanese are more likely to have low financial optimism but financial optimism for Lebanese is either extraordinarily high or extremely low. This is indicated by the average of 0.45 for the variable financial optimism which is the dependent variable and its standard deviation of 0.49.

Regarding the independent variable financial fragility, it has an average of 0.60 indicating that respondents are more likely than not to be financially fragile. Its standard deviation is 0.49 indicating that values are relatively far from the mean. Additionally, the dependent variable financial behavior imported from Mawad, et al. [9] has an average of 0.75 indicating that respondents are more likely to have good financial behavior. However, the dependent variable's standard deviation is 0.43 indicating that values are relatively far from the mean.

Table 3.
Descriptive analysis

Variables	Sample size	Min.	Max.	Mean	Std. dev.	Skewness	Kurtosis
Financial optimism	328.00	0.00	1.00	0.45	0.49	0.19	0.13
Financial fragility	328.00	0.00	1.00	0.60	0.49	-0.40	0.13
Financial behavior	328.00	0.00	1.00	0.75	0.43	-1.14	-0.70
Generation	328.00	0.00	1.00	0.44	0.49	0.23	-1.95
Age	328.00	18.00	61.00	34.28	11.87	0.56	-0.50
Gender	328.00	0.00	1.00	0.52	0.50	-0.08	-2.01
Marital status	328.00	0.00	1.00	0.46	0.49	0.14	-1.99
No. of dependents	328.00	0.00	5.00	1.00	1.24	0.98	0.12
Education level	328.00	0.00	1.00	0.91	0.28	-2.98	6.93
Income level	328.00	0.00	1.00	0.26	0.43	1.10	-0.78

Note: Mawad, et al. [9].

The respondents' average age is 34.58 and their age ranges from 18 to 61. A minimum value of 0 for the independent variable "the number of financially dependent individuals" indicates that the respondent is not financially responsible for anyone and a maximum value of 5 indicates that the respondent is financially responsible for five other people.

The distributions of the two continuous independent variables age and the number of dependents are close to normal with skewness values of 0.56 and 0.98, respectively and moderate kurtosis values of -0.50, and 0.12, respectively.

4.2. Logistic Regression Results

4.2.1. Pre-Estimation Tests

We test the variables and run model reliability checks before empirically testing the model. Results are given in Tables 4 and 5.

Table 4.
Variable reliability test.

Variables	Reliability statistics		
	Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
Financial optimism: Perceived financial optimism	0.45	0.44	3
Financial behavior	0.72	0.71	8

The financial optimism measure's Cronbach alpha was used to test the reliability at the perceived financial optimism stage only. The perceived financial optimism value is created using Likert scale answers to three different questions. The defined financial optimism measure is moderately reliable since the Cronbach alpha reliability test standardized value is 0.44.

The median of three values, perceived financial optimism, self-confidence and life optimism was used to determine the final financial optimism measure. Those values result in the median of the calculated values not the Likert scale value, so the Cronbach alpha reliability test should not be performed.

The financial fragility variable is a score result from 1 question, thus, the reliability test does not apply as well. The dependability of the measure of financial behavior was evaluated using the same test as well. The Chronbach alpha standardized value of 0.719 makes it trustworthy.

Equation 1 verifies the hypothesis raised in the previous sections of our research. It was tested using logistic regression analysis in two steps: first without the financial behavior variable and then with the financial behavior variable. The likelihood ratio chi-squared test shows that the full model in both cases is a significant improvement in fit over a null model. Omnibus tests have a p value equal to zero in both cases, which is lower than a level of significance of 1%.

Table 5.
Model and goodness of fit tests.

Tests	Reliability statistics					
	Chi-square		Degree of freedom		Significance p-value	
	Without financial behavior	With financial behavior	Without financial behavior	With financial behavior	Without financial behavior	With financial behavior
Omnibus likelihood tests of model coefficients	58.61	61.13	8	6	0.00	0.00
Fagerland and Hosmer [32] goodness of fit test	7.43	7.67	8	8	0.49	0.46
Classification table	Financially pessimistic		Financially optimistic		Overall	
Prediction accuracy	Without financial behavior	With financial behavior	Without financial behavior	With financial behavior	Without financial behavior	With financial behavior
	77.20%	78.30%	52.70%	54.10%	66.20%	67.40%

The Fagerland and Hosmer [32] test shows non-significance, with a p-value of 0.49 and 0.46 higher than a level of significance of 10%. This result indicates that the data fit perfectly with the model both with and without the financial behavior variable.

The classification table shows the percentage of accuracy in predicting financial optimism. For the model without financial behavior, the model is accurate for 77.2% of financial pessimism and 52.7% of financial optimism. Overall, the classification accuracy for the model is 66.2%. The model moderately predicts both financial pessimism and financial optimism.

The financial optimism model can be improved if the financial behavior variable is added as one of the predictors. The classification table of the improved model with the financial behavior variable shows that the model is accurate at 78.3% in predicting financial pessimism compared to 77.2% in the model without financial behavior and at 54.1% in predicting financial optimism, compared to 52.7% in the model without financial behavior. The classification accuracy for the model improved from 66.2% to 67.4%. In both cases, the model better predicts financial pessimism than financial optimism. Thus, the prediction accuracy improved on all levels when including the financial behavior predictor.

4.2.2. Results and Discussion

In Lebanon, the financial optimism logistic regression model indicates that financial optimism is independent of the generation of individuals. The generation predictor coefficient is -0.298 and is not significant at a 10% significance level (see Table 6).

In addition, gender does not affect financial optimism for Lebanese. Therefore, financial optimism seems to be independent of gender. The gender predictor coefficient is 0.149 (see Table 6) and is insignificant at a 10% significance level. Marital status and the number of dependents also do not affect the financial optimism of Lebanese. These results are in contradiction with those of Dewi, et al. [33] who discovered that compared to males and unmarried individuals, married women and unmarried women felt more financial vulnerability and thus had lower optimism than men.

Moreover, the financial optimism of Lebanese is independent of their education level and the predictor coefficient of the education level is insignificant at a 10% significance level.

On the other hand, the financial fragility predictor coefficient is significant at a 10% level of significance (see Table 6). The financial optimism of the Lebanese is therefore, dependent on their financial fragility.

Table 6.
Financial behavior model logistic regression estimates.

Independent variables	Coefficients		Standard errors		Odds ratios	
	Without FB	With FB	Without FB	With FB	Without FB	With FB
Model						
Financial fragility (1)	-0.77*	-0.74*	0.26	0.25	0.46	0.47
Financial behavior	Excluded	0.54***	Excluded	0.29	Excluded	1.72
Generation (1)	-0.29	-0.28	0.25	0.25	0.74	0.75
Age	-0.03	-0.04*	0.01	0.01	0.96	0.96
Gender (1)	0.15	Excluded	0.26	Excluded	1.16	Excluded
Marital status (1)	0.15	Excluded	0.34	Excluded	1.16	Excluded
Number of dependents	-0.11	Excluded	0.13	Excluded	0.89	Excluded
Education level (1)	0.58	0.68	0.48	0.47	1.8	3.66
Income level (1)	1.39*	1.29*	0.31	0.3	4.02	1.97
Constant	0.55	0.18	0.62	0.65	1.74	1.21

Note: Financial fragility is indicated by (1), financial behavior is indicated by (none), gender, "female" is indicated by (1); marital status "married" is indicated by (1), education level is indicated by (1), for income level "high-income level" is indicated by (1) in the estimates' tables. Significance: *=1%; ***=10%

The negative coefficient (-0.777) of the financial fragility predictor shows that financial optimism is negatively related to the financial fragility of Lebanese. Based on our coding system, the absence of financial fragility was labeled 0 and the presence of financial fragility was labeled 1. The negative coefficient means that there is a decreasing likelihood of financial optimism if the individual is financially fragile. The odds ratio (0.460) in [Table 6](#) indicates that if an individual is financially fragile, the odds of his having financial optimism decrease (the probability of financial optimism is lower than the probability of financial pessimism).

In addition, the age predictor coefficient is significant at a 10% level of significance. Hence, the financial optimism of Lebanese is dependent on their age.

The negative coefficient (-0.032) of the age control variable in [Table 6](#) shows that financial optimism is negatively related to the age of Lebanese. The negative coefficient means that there is a decreasing likelihood of financial optimism with age. The odds ratio (0.968) in [Table 6](#) indicates that for an older individual, the odds of feeling financial optimism decrease (the probability of financial optimism is lower than the probability of financial pessimism).

Finally, the income level predictor coefficient is also significant at a 10% level of significance in [Table 6](#). Hence, the income level affects the financial optimism of the Lebanese.

The income level's positive coefficient (1.391) in [Table 6](#) shows that it is positively related to the individuals' financial optimism. Based on our coding system, the low-income level was labeled 0 and the high-income level was labeled 1. The positive coefficient means that there is an increased likelihood of financial optimism if the individual has a high level of income. The odds ratio (4.018) in [Table 6](#) indicates that if an individual has a high income, the odds of his having financial optimism increase (the probability of financial optimism is higher than the probability of financial pessimism).

When the financial behavior variable is added, the financial behavior predictor has a significant coefficient at a 10% significance level. The result indicates that financial behavior and financial optimism have a positive relationship. If financial behavior increases by 1, the individual is more likely to feel higher financial optimism. Gender, marital status and the number of dependents were excluded from the final model as they were not significant during the first regression test run.

5. Discussion

[Equation 1](#) was successfully confirmed by performing a logistic regression on the financial optimism equation. The financial optimism equation is verified in Lebanon. The negative relationship between financial optimism and financial fragility was proven to be true for the Lebanese sample. This negative relationship was also defined in the US sample tested by previous literature [\[3\]](#).

Financial optimism in Lebanon is defined by the financial fragility of Lebanese and by their income level, [Chhatwani and Mishra \[3\]](#) found the same result among US individuals during the COVID-19 crisis where wealth and economic situations enhanced the link between financial optimism and financial fragility. Financial optimism does not differ between generations, genders, marital status, the number of dependents or education levels. This agrees with [Chhatwani and Mishra \[3\]](#) except for gender, where a significant model is similar for women but not for men in India.

A likelihood of higher financial optimism is present among Lebanese who are not financially fragile.

The financial optimism model for Lebanese also has the financial behavior variable as one of its predictors. Lebanese individuals with better financial behavior have better odds of having financial optimism.

6. Conclusion

Lebanon has been experiencing the worst economic, financial, political and social crises for the past three years.

Our paper results have proven that in Lebanon, financial fragility is equally sensed by all generations which negatively impacts the level of optimism. As the economic situation in Lebanon is still the same, the Lebanese will still feel a sense of instability and a lack of confidence in their future. The negative relationship between financial fragility and financial optimism is also dependent on the financial behavior of the Lebanese as better financial behavior leads to higher financial optimism.

Our findings were based on an online auto-collected sample of 298 Lebanese people because Lebanon lacks databases. This might be viewed as a flaw in our technique but given the resources at our disposal and the situation in the country, it might be the most effective way to gather data for our research. There might be additional restrictions depending on how the data was collected. People were asked to answer a variety of questions so their knowledge of the questions and desire to answer honestly may have had an impact on their results. Furthermore, few of the control variables used in our investigation were significant.

Financial optimism, fragility and behavior among the population, particularly among young individuals are considered undertreated subjects of research in Lebanon.

Our proven hypotheses state that financial optimism is negatively linked to financial fragility. Furthermore, good financial behavior weakens the negative relationship between financial fragility and financial optimism. This result opens two new pathways: First, future research should be conducted to verify the link between individuals' financial optimism, consumption, investments and better financial performance in Lebanon. Second, our results can suggest policy implications.

Our findings should influence policymakers to pay more attention to the financial behavior of the next generation and to enhance good financial behavior by incorporating financial knowledge into school curricula and assisting children and adults in developing financial self-control skills that have been shown to positively influence good financial behavior [\[9\]](#).

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Appendix: Variables description.

Table 7.

Sample distribution from Mawad, et al. [9].

YOB	GEN	FE	MA	SI	MA	LE	HE	LI	HI	AVG age	AVG No. of dependents
1960-1989	X	88	81	49	120	16	153	15	154	43.53	1.59
1989-1996	Y	34	31	37	28	1.00	64	11	54	29.46	0.55
1996-2003	Z	49	45	90	4	11	83	55	39	20.98	0.25
	Total	171	157	176	152	28	300	81	247	34.28	1.00

Note: YOB is the year of birth; GEN is generation; FE is female; MA is male; SI is single; MA is married; LE is low educated; HI is highly educated; LI is low income; HI is high income.

Table 8.

Financial behavior variable construction.

Financial behavior variable summary [9]

I set a monthly personal budget. At the beginning of every month, I calculate the expected revenue and the expected expenditures.	5 reflects good financial behavior 1 reflects poor financial behavior
I review and assess revenue and expenditures at the end of every month and analyze whether the budget was met or not.	
I plan my budget to reach my financial objectives (Save or invest a target amount of money).	
I pay my bills (Phone, electricity, rent...) on time.	
I pay my loan installment on time.	
I place a certain amount of money aside as savings every month.	
I have an emergency fund other than my savings.	
I have a pension fund other than my savings.	
I get a credit or a loan when I need money at the end of the month.	1 reflects good financial behavior 5 reflects poor financial behavior (Reverse coded)
Financial behavior Median score	Median score over 5 for the 9 questions
Financial behavior Binary score	Any score above or equal to 3 reflects good financial behavior and is assigned number 1 and any score below 3 reflects poor financial behavior and is assigned number 0