Consumer Optimism and Saving Behavior

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Abstract

This study examines the factors affecting household saving, extending previous research by adding measures of consumer optimism to the variables previous investigators used to analyze saving behavior. In addition to expectations about household income and the economy, we create an optimism variable related to life expectancy. The 1995-2007 Survey of Consumer Finances datasets were used. Two multivariate analyses show that including optimism variables in the model improved the explanation of household saving behavior. In general, those who are optimistic about future income, future economy, and life expectancy are more likely to be savers than are pessimistic individuals.

1. INTRODUCTION

This study examines the factors affecting household saving, extending Life Cycle Model of Consumption and Saving. The key difference between this research and previous studies on household saving (Avery & Kennickell, 1991; Chang, 1994; 2010;Yuh & Hanna, 2010) is that this research focuses on the effect

of psychological factors on household saving, especially optimism.

Katona (1968; 1974) emphasized the importance of psychological factors in the research on consumer behavior. He mentioned that consumers' expenditures are a function both of ability to buy and willingness to buy. While ability to buy is represented by income, possessions, and access to credit, willingness to buy depends on attitudes and expectations about personal finances and the economy as a whole (Katona, 1968). The main stream of the research has focused on ability to buy, but to fully understand consumer behavior, consumer expectations need to cover in consumer research as well.

There are various financial behaviors, but this study deals with household saving behaviors. The saving decision involves many uncertainties and therefore depends on consumer expectations. In the basic life cycle model (Browning & Crossley, 2001), individuals are unrealistically assumed to be knowledgeable about their future income, the future economy, and their life expectancy and other future life events. However, in reality, perfect knowledge is impossible. Household saving decisions could tend to be affected by consumers' subjective expectations rather than what will really happen in the future.

Therefore, this study aims to investigate how various attitudinal variables, especially optimism-related variables, affect household saving behaviors. Brief literature reviews on optimism and planning horizon are presented and then discussion on the data sets, measurement of variables, and analytic method are followed. Finally, the main findings about the effect of consumer optimism on their saving behavior are presented and the implications of this study are discussed.

2. LITERATURE REVIEW

2.1 OPTIMISM

In Puri and Robinson's work (2007), optimism is defined as generalized positive expectations about future events. Some researchers consider overconfidence as a same concept with optimism but overconfidence is defined

as the belief that the precision of one's information is greater than it actually is.

Optimism is pervasive in everywhere in human life (Thaler & Sunstein, 2008). Students expect that their grades would be better than others', people starting new businesses expect that their chance of success is higher than it really is, and smokers expect that they will be less likely to be diagnosed with lung cancer and heart diseases. However, optimism has been discussed as one of the factors leading suboptimal decision making of individuals, and hence lowering utility (Puri & Robinson, 2007).

The stream of the research on consumer optimism and financial decisions could be categorized into two subjects; one is consumer optimism and saving behavior and the other is consumer optimism and investment behavior.

Related to saving behaviors, it is presumed that optimism leads to lowering the probability of saving from Katona's research (1968; 1974). Katona stated that wants are not static and when people are optimistic regarding their own and the economy's prospects, new wants arise. Contrariwise, when a person is disappointed about the future it may result in a feeling of saturation with goods and larger savings. However, recent empirical studies have shown the opposite results from Katona. Rha et al. (1998) and Yuh and Hanna (2010) found that those who expect future income to increase are more likely to be savers than those who expect income to decrease. Also, in Puri and Robinson (2007), life expectancy miscalibration affects saving decision. That is, the people who overestimate their life expectancy compared to the life expectancy implied by statistical tables are more likely to be savers. After they categorized top 5% of optimists as extreme optimists, they concluded that while too much optimism may be detrimental to one's economic well-being, a moderate amount of optimism is associated with better decision-making.

Empirical studies about consumer optimism and investment behavior (Balasuriya et al. 2010; Gervais et al., 2002; Jacobsen et al., 2008; Puri & Robinson, 2007) show the consistent result that optimistic people are more likely to be risk takers, underestimating risk or investing more in stock.

2.2 Planning horizon

Planning horizon is defined as the length of time period that is taken into account in the process of planning expenditures and savings (Rabinovich & Webley, 2007). The importance of the individual's time horizon in determining intertemporal choices has been pointed by economists, psychologists, and sociologists (Lea et al., 1995). Also, Rabinovicy and Webley (2007) stated that time horizon has been shown to discriminate between savers and non-savers and to predict saving behavior in previous research. Researchers explain the effects of planning horizon on saving behavior by linking planning horizon to self-control (Rabinovich & Webley, 2007), subjective discount rate (Lea et al., 1995) and saving taste (Pence, 2001).

Recent empirical studies (Fisher & Montalto, 2010; Rabinovich & Webley; Rha et al., 1998) have shown a consistent relationship between planning horizon and saving behavior: the longer time horizon an individual has, the more likely to save s/he is. DeVaney et al. (2007) found that the longer time horizon an individual has, the higher level of hierarchy of saving motives s/he has.

3. METHOD

3.1 DATA SET

This study used the 1995, 1998, 2001, 2004, and 2007 Survey of Consumer Finances (SCF) data sets. SCF is a triennial cross-sectional national survey, which is sponsored by Federal Reserve Board of the United States. The SCF data sets before 1995 were not used in this study since one of the key variables to measure optimism is available only from 1995. The sample sizes were 4,299 in 1995, 4,305 in 1998, 4,442 in 2001, 4,519 in 2004, and 4,418 in 2007 and the total sample was 21,983.

Since the SCF oversamples higher wealth groups, the SCF data does not represent the U.S. population as a whole. Therefore, this study used weights for descriptive analyses. However, for multivariate analyses, this study did not use weights, following the recommendation from Lindamood et al.'s article (2007).

3.2 MEASUREMENT OF VARIABLES

3.2.1 DEPENDENT VARIABLE

The dependent variable of this study is whether the household spent less than income during the previous year or not, following several previous studies, including Yuh and Hanna (2010). When the respondents reported that their spending was less than income over the past year, they were regarded to have saved. Furthermore, even when the respondents reported that their spending was same as income or their spending exceeded income, if they purchased a home or automobile, or spent for any investments, they were regarded to have saved. However, when the respondents reported that their spending was same as income or their spending exceeded income and that they didn't purchase a home or automobile nor spent for any investments, they were regarded not to have saved.

3.2.2 INDEPENDENT VARIABLES

The independent variables classified into the year of the survey, social demographic characteristics, working status, income and wealth-related factors, need to save, and attitudes. The important issue in measurement of variables is to use whether the respondent's data or the head's data, or even the household data which is created based on both partners' data when it is couple household. In this research, since the dependent variable is whether the household saved or not, most of the variables were transformed to household level by combining both partners' data if available. However, since the SCF asks the attitude-related questions only to the respondent, the related variables were measured based on respondent's data.

Survey year

As mentioned earlier, 1995, 1998, 2001, 2004, and 2007 SCF data sets were used in this study. Therefore, the survey year variable has 5 categories, and in the

multivariate analyses we used 4 dummy variables to represent differences from the reference year, 1995.

Social demographic characteristics

Social demographic characteristics include age, marital status, racial/ethnic group, the education level of household, and the presence of a child under age 19. Respondent's age is categorized as under age 30, age 30-39, age 40-49, age 50-59, age 60-69, and age 70 or over. Marital status has four categories: married, living with partner, single male, and single female. Racial/ethnic group is categorized as white, black, Hispanic, and other. The education level of household was created by taking higher education level between both partner's education level if couple household or taking respondent's education level if single household. And then it is categorized as less than high school, high school degree, some college, and Bachelor's degree and above. The reason that the higher education level between two was used is based on the assumption that the financial decision making in household is strongly affected by the partner whose education level higher than the other. To measure the presence of a child under age 19, the data on the relationship with the people who live with the respondent other than partner and their age were used. This variable is dichotomous.

Working status

Self-employment of household and retirement of household are included in working status. If the respondent reported his/her job as self-employed, partnership, or consultant/contractor, and then this person is regarded as being self-employed; also if the respondent reported to be retired or disabled then this person is regarded as being retired. If single household, the household is categorized as being self-employed when the respondent reported to be self-employed and the household is categorized as being retired when the respondent reported to be retired. However, if couple household, the household is categorized as being self-employed only when both partners are self-employed

and the household is categorized as being retired only when both partners are retired. The reason that the household working status was created in the strict way is based on the thought that the household which has both partners being self-employed or retired is pretty different with one which has either partner being self-employed or retired.

Income and wealth-related factors

Income and wealth-related factors include homeownership, income, net worth, current income relative to normal, and household health status. Homeownership is dichotomous variable. Income is measured as the total income received during past year and if income was reported as negative value in original SCF variable, it was transformed to 0 in the descriptive analysis. For multivariate analysis, the income of zero was transformed to 0.01 and log of income was used. Net worth is based on numerous variables from SCF variables which are related to assets and debts. Like income, log of net worth was used for multivariate analysis and if the net worth turned out to be negative, it was transformed to the log of 0.01. Current income relative to normal is categorized as higher than normal, lower than normal, or normal. Household health status was created by taking worse health status between both partners' health status if couple household or taking respondent's health status if single household. And then, it is categorized as excellent, good, fair, and poor. The reason that the worse health status between two was used is based on the assumption that bad health status is critically affecting to household financial strain.

Need to save

Need to save includes being covered by health insurance and being able to get emergency fund from friends and relatives. If everyone in household is covered by government-funded or private health insurance, the household is regarded as being covered by health insurance. Also, if a respondent reported that he/she could get financial assistance of $3,000 or more from friends or relatives, the household is regarded as being able to get emergency fund.

Attitudes

This study focuses on the effect of optimism on household saving decision and this part is the key difference from previous studies on household saving (Avery & Kennickell, 1991; Chang, 1994; 2010;Yuh & Hanna, 2010). Optimism includes expectation on future income, expectation on economy, and discrepancy in life expectancy. Expectation on future income is about expectation on next year's total income compared to prices. This variable has three categories: going up more than prices, going up less than prices, and about the same. Expectation on economy is about expectation on next five years U.S. economy as a whole compared to the past five years. This variable also has three categories: better, worse, and about the same.

The discrepancy in life expectancy was created by subtracting estimated life expectancy from respondent's self-assessed life expectancy. This method is modification of Puri and Robinson's work (2007). In their article, the authors used actuarial life expectancy which they obtained from statistical life tables. However, in this research, estimated life expectancy was used, obtained from SCF samples themselves. First, respondent's age, age squared, racial/ethnic group, gender, education level, health status, and smoking status were chosen to derive estimated life expectancy. And then, the discrepancy in life expectancy was created by subtracting estimated life expectancy from respondent's self-assessed life expectancy. If the discrepancy in life expectancy is positive value, the respondent is assumed to expect to live longer than average. Or if the value is minus, the respondent is assumed to expect to live shorter than average. Finally, to categorize the discrepancy in life expectancy into three groups - optimistic, reasonable, and pessimistic -, the quintiles of the discrepancy in life expectancy were checked. In this study, the middle 50% of respondents are assumed to be reasonable, but the top 25% are assumed to be optimistic and the bottom 25% are assumed to be pessimistic. That is, if a respondent reported that he/she expected to live more than 5.53701 years longer than the mean life expectancy, the respondent is assumed to be optimistic. However, if a respondent reported that he/she expected to live 6.17779 years shorter than mean life expectancy, the

respondent is assumed to be pessimistic. Those who reported between them are assumed to be reasonable. Table 1 shows the distribution of life expectancy discrepancy between pessimistic, reasonable, and optimistic.

[Insert Table 1 about here]

Lastly, if the respondent answered that the next few months or the next year is most important to him/her in planning saving and spending, he/she is regarded as having a short planning horizon. If the next few years or the next 5 to 10 years is most important, the respondent is regarded as having a medium planning horizon, while those who reported longer than 10 years are important are regarded as having a long planning horizon. This categorization is following Fisher and Montalto's (2010) and Pence's (2001).

3.3 ANALYSIS

Since the dependent variable is dichotomous, whether the household saved or not, logistic regression was conducted in this study. To compare how the attitudinal variables improve the model fit after they added, two regression models, one without attitudinal variables and the other without them, were analyzed. The SAS 9.2 software program was used for statistical analysis.

4. RESULTS

4.1 DESCRIPTIVE ANALYSES

For descriptive analysis, weighted data were used. In the combined 1995, 1998, 2001, 2004, and 2007 SCF datasets, 56.58% of households reported that they spent less than income. Table 2 shows patterns of percent saved by selected variables. The proportion of saver households increased in 2001, but 2004 and 2007 were lower than 2001.

The proportion saving was highest for respondent's age between 50 and

59, and lowest when the respondent's age is 70 or over. Single female household and black and Hispanic households had low proportions of saver and the household with less than high school degree showed lowest saver proportion as well. The household with at least one child under age 19 had a slightly lower proportion of savers than the household without any.

Self-employed households had a higher proportion of savers than those who were not self-employed. However, retired households had low proportions of savers.

Home-owning households, those who reported to have current income more than normal, and those who reported to have excellent health had higher proportions of saver. Households with everyone covered by health insurance and households able to get emergency funds from friends or relatives had higher proportions of saver as well.

Those who expected to have income to grow more slowly than inflation, those who expected a worse general economy, and those who were pessimistic about their life expectancy had low proportions of savers. However, those who had longer planning horizons in saving and spending had a higher proportion of savers.

[Insert Table 2 about here]

Table 3 shows descriptive statistics for continuous variables. The mean income for non-savers was $37,244 and the median income was $25,000, while for savers the mean income was $82,041 and the median income was $49,000. For non-savers, the mean net worth was $175,238 and the median net worth was $36,900, while for savers the mean net worth was $539,060 and the median net worth of $131,250. For non-savers the mean respondent life expectancy was age 81.37 and the median was age 80, while for savers the mean was age 82.51 and the median was age 80.

[Insert Table 3 about here]

4.2 MULTIVARIATE ANALYSES

In this study, logistic regressions were conducted for two models. The first model is without attitudinal variables and it is quite similar to the Yuh and Hanna (2010)'s model, except that they did not include the 2007 SCF dataset in their analyses. The second model adds three optimism-related variables, which are expectation on future household income, expectation on the economy, and optimism/pessimism in life expectancy, and also the planning horizon variable into the first model. In this way we can observe whether the explanatory power of the model is improved by adding these variables, and we found that the model explains household saving behavior better with the additional optimism variables plus the planning horizon variable. After the attitudinal variables are added, the concordance (percent of model predictions that are correct) increases from 76.6% to 77.2% and the pseudo R^2 increases from 0.1754 to 0.1874. The results of two models are presented in Table 4.

4.2.1 LOGISTIC REGRESSION (1) WITHOUT ATTITUDINAL VARIABLES

As shown in [Table 4], the households in 2001, 2004, and 2007 are less likely to have saved than the households in 1995. The proportion who saved in 1998 is not significantly different from 1995.

Households with a respondent age under 30 have the highest probability of having saved. In Life Cycle Model, the younger households are thought to be borrowers rather than savers. However, when the other variables including household income and net worth are controlled in this study, the results turn out to be opposite (see discussion in Yuh & Hanna, 2010). Single female households are less likely to have saved compared to married households. While racial and ethnic status is assumed to have no effect on saving behavior when the other variables like household education and income are controlled, households with black respondents are less likely to have saved compared to whites. If both partners have lower than high school education status, the households show the lowest probability of having saved. Also, the households with at least one child under age 19 are less likely to have saved than the households without any child under age 19.

[Insert Table 4 about here]

Household working status affects households saving as expected. If both partners are self-employed, the households are more likely to have saved than the others. However, if both partners are retired, the households are less likely to have saved than the others.

It is found that the more income or net worth the households have, the more the households are likely to have saved. As expected, the households who consider that current income is higher or same relative to normal year show the higher probability of having saved than the households who consider that current income is lower relative to normal year.

Households with poor health, the households are less likely to have saved than households with better than poor health. This result is inconsistent with Yuh and Hanna (2010)'s findings.

Need to save affects household saving against what is expected. The households who have health insurance covering all household members are found to be more likely to have saved than the households without one. Also, the households who are able to get $3,000 or more from friends or relatives when emergency are found to be more likely to have saved than the households who are not able to do. About health insurance, Yuh and Hanna (2010) explained that if households not covered by health insurance are currently paying huge medical bills, then their lower likelihood of saving is not surprising. Regarding to emergency fund from friends or relatives, it could be possible that savers have friends or relatives like them, savers, so they could get emergency fund from saver friends. In contrast, borrowers have friends or relatives like them, borrowers, so they may fail to get emergency fund because their borrower friends may not be able to offer.

4.2.2 LOGISTIC REGRESSION (Model 2) WITH ATTITUDINAL VARIABLES

In this second model, three optimism variables - expectation on future income, expectation on economy, and discrepancy in life expectancy – and

planning horizon variable are added into the first model. The common variables show similar results in both models so the findings from those four new variables are presented here.

Respondents who expect their next year's income to increase more than price or increase same as price are more likely to have saved than the respondents who expect their next year's income to increase less than price. Respondents who expect next five years' U.S. economy to be same or better than past five years are more likely to have saved than the respondents who expect next five years' U.S. economy to be worse than past five years. These results are inconsistent with the hypotheses, but they could be understood in the sense that the future income and future economy are restricted only to short term, next year for future income and next five years for future economy. If respondents consider future income increase or future economy improvement as enduring, the results might have been consistent with the hypotheses, but it seems possible that they did not consider personal or national economic improvements as enduring. Another explanation for these unexpected results is that since the dependent variable is having saved or not in the previous year rather than in the current year, current optimism may not explain previous saving behavior in the expected way. Also, it is possible that expectation on future income or economy is related to other factors affecting household saving, for instance, those who are more optimistic are also more future oriented, and therefore more inclined to save out of current income.

Those who are optimistic about their life expectancy are more likely to have saved than the pessimistic respondents. This result is understandable since those who expect live longer than others similar with themselves in age, race, gender, education, health, and smoking status will need more money for their much longer lives after retirement.

Respondents who have longer than a one year planning horizon are more likely to have saved than those who have a year or less planning horizon. This result coincides with previous studies (Fisher & Montalto, 2010; Rabinovich & Webley, 2007; Rha et al., 1998).

5. IMPLICATIONS

This study estimated effects of factors affecting household saving, focusing on consumer optimism. After the attitudinal variables are added into the logistic regression model, the model explains household saving behavior better. It is shown that, in general, optimistic consumers on their future income, general economy, and life expectancy tend to more likely be savers.

Even though there has been research showing the positive effects of optimism on health and welfare, Puri and Robinson (2007) had suggested that optimism would to lead suboptimal decision making in the field of consumer finance. Especially for saving behavior, optimism has been expected to lower the likelihood of saving. However, this study showed that optimism on future income, general economy, and life expectancy is positively related to household saving. The role of optimism perspective in consumer financial decision making is important and should be considered in future research.

Future research should develop more accurate measurement on consumer optimism. If we measure enduring optimism rather than just the next one or five years' short term optimism, we could understand the effects of consumer optimism and saving behavior better. Also, it would be helpful to find other factors which are related to consumer optimism and, at the same time, affect to household saving. Furthermore, investigating the effects of consumer optimism on other various financial behaviors would bring intriguing topics to consumer finance research.

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Table 1. Quantiles of the Discrepancy in Life Expectancy

Quantile	Estimate	Discrepancy
100%	80.69582	100%-75% Optimistic
95%	17.84276	
90%	13.21934	
75%	5.53699	75%-25% Reasonable
50%	-0.68531	
25%	-6.17779	
10%	-11.51345	25%-0% Pessimistic
5%	-15.19635	
0%	-54.65881	

Table 2. Descriptive Analysis for Categorized Variables

Variable	Category	Percentage in Category	Saved: spending < Income	
		(N=21,983)	56.58%	Significance level
Year	**1995**	19.56	55.20	
	1998	19.58	55.87	0.1588
	2001	20.21	59.24	<0.0001
	2004	20.56	56.09	0.0588
	2007	20.10	56.45	0.0084
Age	**-29**	14.73	54.16	
	30-39	19.84	56.92	<0.0001
	40-49	22.14	58.49	<0.0001
	50-59	16.82	60.05	<0.0001
	60-69	11.75	57.13	<0.0001
	70-	14.72	51.29	<0.0001
Marital status	**Married**	51.23	64.17	
	Partner	7.11	54.66	<0.0001
	Single male	14.22	56.68	<0.0001
	Single female	27.45	42.88	<0.0001
Race	**White**	75.79	59.97	
	Black	12.77	42.07	<0.0001
	Hispanic	7.90	45.59	<0.0001
	Other	3.54	60.92	0.2337
Education of the household	**<High school**	11.39	35.18	
	High school	28.68	50.65	<0.0001
	Some college	19.36	54.27	<0.0001
	College degree	40.57	67.89	<0.0001
Child < age 19	Yes	34.83	55.38	<0.0001
	No	65.17	57.23	
Self-employed Of the household	Yes	13.87	64.63	<0.0001
	No	86.13	55.29	
Retirement	Yes	21.54	45.27	<0.0001

Variable	Category	Percentage in Category	Saved: spending < Income	
		(N=21,983)	56.58%	Significance level
status of the household	**No**	78.46	59.69	
Homeowner	Yes	67.29	62.69	<0.0001
	No	32.71	44.01	
Current income	Higher normal	9.36	64.84	<0.0001
	Normal	74.12	58.47	<0.0001
	Lower normal	16.52	43.43	
Self-assessed health of the household	Excellent	21.53	65.42	<0.0001
	Good	47.99	59.64	<0.0001
	Fair	22.60	49.13	<0.0001
	Poor	7.88	35.19	
All covered by health insurance	Yes	81.02	59.74	<0.0001
	No	18.98	43.09	
Emergency fund from friends	Yes	40.86	64.14	<0.0001
	No	59.14	51.36	
Expectation on future income	Up more	21.64	61.08	<0.0001
	Same	46.44	59.26	<0.0001
	Up less	31.92	49.64	
Expectation on economy	Better	30.99	57.82	<0.0001
	Same	42.72	58.84	<0.0001
	Worse	26.29	51.45	
Discrepancy in life expectancy	Optimistic	25.00	56.08	<0.0001
	Reasonable	50.00	58.61	<0.0001
	Pessimistic	25.00	53.03	
Planning horizon	**Short**	33.88	45.00	
	Medium	51.95	60.32	<0.0001
	Long	14.17	70.58	<0.0001

Table 3. Descriptive Analyses for Continuous Variables

	Non-saver		Saver	
	Mean	**Median**	**Mean**	**Median**
Income (min: 0 max:181,670,000)	37,244	25,000	82,041	49,000
Net worth (min:-15,162,200 max:1,411,730,000)	175,238	36,900	539,059	131,250
Life expectancy (min: 26 max:150)	81.33	80.00	82.51	80.00

Table 4. Summary of Two Logistic Regression Results

	Saved: Spending < Income			
	Model 1		Model 2	
Variable	Coefficient	P value	Coefficient	P value
Intercept	-3.0715	<.0001	-3.4102	<.0001
Survey year (1995)				
1998	-0.0378	0.4484	-0.0429	0.3957
2001	-0.2480	<.0001	-0.2275	0.0002
2004	-0.3324	<.0001	-0.3167	<.0001
2007	-0.3599	<.0001	-0.3115	<.0001
Age (<30)				
30-39	-0.2095	0.0004	-0.1736	0.0038
40-49	-0.2790	<.0001	-0.2392	<.0001
50-59	-0.2967	<.0001	-0.2551	0.0001
60-69	-0.2597	0.0008	-0.1958	0.0122
70 and over	-0.2254	0.0086	-0.1230	0.1578
Marital status (Married)				
Partner	-0.0675	0.3170	-0.0469	0.4893
Single male	-0.0249	0.6392	-0.0105	0.8448
Single female	-0.3897	<.0001	-0.3446	<.0001
Racial/ethnic stats (White)				
Black	-0.2080	0.0001	-0.2172	<.0001
Hispanic	-0.0993	0.1314	-0.0968	0.1452
Other	0.0382	0.6568	0.0208	0.8103
Household education (<High school)				
High school degree	0.1428	0.0255	0.1423	0.0270
Some college	0.1809	0.0083	0.1615	0.0192
Bachelor's degree and above	0.4036	<.0001	0.3463	<.0001
Presence of a child under age 19	-0.2756	<.0001	-0.2827	<.0001
Household self-employed	0.1408	0.0010	0.1076	0.0130
Household retired	-0.3146	<.0001	-0.2898	<.0001
Homeowner	0.0852	0.0530	0.0808	0.0694
Log income	0.1774	<.0001	0.1615	<.0001
Log net worth	0.0739	<.0001	0.0694	<.0001
Current income relative to normal (Lower)				
Same	0.4245	<.0001	0.4367	<.0001
Higher	0.5271	<.0001	0.5464	<.0001
Household health (Poor)				

	Saved: Spending < Income			
	Model 1		Model 2	
Variable	Coefficient	P value	Coefficient	P value
Fair	0.3858	<.0001	0.3186	<.0001
Good	0.5538	<.0001	0.4593	<.0001
Excellent	0.7520	<.0001	0.6235	<.0001
All covered by health insurance	0.3082	<.0001	0.2888	<.0001
Emergency fund from friends or relatives	0.3227	<.0001	0.2942	<.0001
Expectation on future income (Less)				
Same			0.2754	<.0001
More			0.5094	<.0001
Expectation on economy (Worse)				
Same			0.1123	0.0049
Better			0.0882	0.0403
Discrepancy in life expectancy (Pessimistic)				
Reasonable			0.0501	0.2062
Optimistic			0.0985	0.0309
Planning horizon (Short)				
Medium			0.1875	<.0001
Long			0.4879	<.0001
Concordance (mean)	76.6%		77.2%	
Pseudo R^2	0.1754		0.1874	