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It's a Matter of Control: Saving for Retirement

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Abstract

Positive financial behaviors, such as saving for retirement, are the aim of financial planning for most individuals. This study used the Theory of Planned Behavior (TPB) to explore how people make financial decisions and, ultimately, to predict how they learn to use positive financial behaviors. Results from a survey of 328 adults who completed a consumer economics and/or personal finance course between 1982 and 2007 were used to determine how variables such as Attitude, Subjective Norm, Perceived Behavioral Control and Behavioral Intention predicted saving for retirement. Overall, the findings suggest that Perceived Behavioral Control (PCB) is the most important variable in predicting saving behaviors. Additionally, the saving behaviors of participants with lower levels of PCB were influenced by their everyday money management and wealth management behaviors to a greater extent than participants with higher levels of PCB. These results can be used by financial educators, counselors and planners to guide individuals toward the attitudes and behaviors most likely to increase their saving related behaviors.

Keywords: Finance, financial, therapy, Theory of Planned Behavior, retirement, savings

1. Introduction

In 2008, the U.S. Department of the Treasury and the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service convened the National Research Symposium on Financial Literacy and Education in Washington, D.C. Attendees included numerous experts from the area of personal finance from the private sector, academia and government agencies. During the symposium financial literacy and education research priorities were developed. According to Schuchardt et al. (2009) the symposium called for a better understanding of how an individual's financial behaviors developed and how to help consumers choose positive financial behaviors, as these were deemed necessary to understand how to motivate financial behavioral change.

The research reported in this paper addresses calls to investigate financial behaviors and to determine how financial educators, counselors and planners can best assist consumers in developing positive financial behaviors. The purpose of this research was to begin to understand how people make financial decisions and, ultimately, to predict how they learn to use positive financial behaviors. To this end, the Theory of Planned Behavior (TPB) was used to explore how the conceptual elements of the TPB could be applied to understand how people make financial decisions. This understanding may very well aid financial educators, counselors and planners to help individuals improve their financial behaviors.

2. Literature Review

The Theory of Planned Behavior (TPB) offers a model that explains how human behavior is guided (Ajzen, 1991; Ajzen, 2002). The TPB has been validated extensively in the social psychology literature and has been applied to research in the arenas of credit counseling, personal finance and personal money management both domestically and internationally (Ajzen, 1991; Bobek, Hatfield &Wentzel, 2006; Francis et al., 2004; Kidwell &Turrisi, 2004; Ramayah, Yusoff, Jamaludin, Ibrahim, 2009; Rutherford &DeVaney, 2009; Xiao & Wu, 2008).

TPB provides a framework to explore the underlying beliefs that affect one's financial behaviors. Thus, the TPB is helpful in investigating and designing strategies to help people to adopt positive financial behaviors. According to the TPB, the most important predictor of an individual's behavior is the intention of performing the behavior. Behavioral intention depends on three antecedents: (1) the individual's attitude toward the behavior (ATT), (2) social norms (SN), and (3) perceived behavioral control (PBC) (Figure1). Each of these determinants of behavioral intention is itself a function of one's salient beliefs. Each of the TPB constructs is discussed in more detail below. The current study utilized the TPB to investigate the underlying beliefs that affect individuals' behaviors, specifically saving for retirement (SAV).

According to the Theory of Planned Behavior, ATT refers to an individual's attitude (positive or negative) toward engaging in a particular behavior in question. The ATT is understood to be an individual's positive or negative evaluation of a certain behavior, and is composed of that person's salient beliefs regarding the outcomes of performing that behavior.

The antecedent, social norms (SN) refers to one's perceived social pressure to perform or to not perform a behavior (Ajzen, 1991) as well as what the person believes others who are important to the person (friends, family, members of personal reference group) believe he or she should do. SN, or one's motivation to conform to others' views is a factor proposed by the TPB to be important in predicting behavior.

According to the TPB, perceived behavioral control (PBC) refers to the perceived level of difficulty to perform a certain behavior. One's perception reflects both past experiences and anticipated barriers. Xiao (2008) describes the process as follows: "the more favorable the attitude toward performing a behavior, the greater the perceived social approval, the easier the performance of the behavior is perceived to be and the stronger the behavioral intention … the more likely the behavior will be performed" (p. 32).

Several studies used the TPB to investigate a range of financial behaviors. Rutherford and DeVaney (2009) studied the role of the antecedents of a key concept of the TPB, behavioral intention (BI), to understand the "convenience use" of credit cards. Findings suggested that convenience users of credit cards were likely to possess an unfavorable ATT with regard to the use of credit cards and were influenced less by SN with regard to the use of credit cards (Rutherford &DeVaney, 2009). These authors also found that perceived behavioral control (PBC) positively impacted the convenience use of credit cards. Interestingly, however, Rutherford and DeVaney (2009) did not address behavioral intention (BI) in terms of its influence on the convenience use of credit cards. Rather, the foci in this study were the antecedents thereof: ATT, SN, and PBC.

Ramayah, Yusoff, Jamaludin and Ibrahim (2009) used the TPB to predict internet tax filing intentions (e-filing). The study showed that PCB was the strongest predictor of intentions to file taxes via the internet, followed by the next strongest predictor, ATT. The results indicated that SN demonstrated a minor influence on tax filing via the internet. However, the study participants' PBC over the situation and ATT toward e-filings were found to be essential for a strong BI to file taxes via the internet.

Xiao and Wu (2008) utilized the TPB identified psychological factors that supported the completion of debt management plans (DMPs). Participants in this study indicated higher levels of BI toward completing a DMP when ATT and PBC reflected higher levels. The study also showed that BI had a direct effect on the completion of DMPs. PBC (an antecedent of BI), also had a direct effect on the completion of DMPs.

A study using the TPB reported by Bobek, Hatfielf and Wentzel (2007) explored why taxpayers prefer refunds. This research showed that ATT and SN influenced taxpayer withholding decisions. However, the results did not support the notion that PBC was associated with making changes in one's withholding. In the results of this study it appeared that the perceived emotional benefit of receiving a tax refund was a more powerful motive than gaining investment income. Like the Rutherford and DeVaney (2009) research, this study did not address the role of behavioral intention (BI) (a key component of the Theory of Planned Behavior) in terms of its influence on the convenience use of credit cards. Rather, the foci were the antecedents ATT, SN, and PBC.

As with the research discussed, this study attempts to establish an empirical link between a participant's knowledge, attitudes and behaviors, specifically BI and its antecedents, ATT, SN, and PBC. This knowledge will assist the financial educators, counselors and planners in understanding how clients make financial decisions and ultimately help practitioners aid clients in this knowledge.

3. Methodology

3.1 Data and Sample

Participants in the research were a convenience sample of 328 alumni of Texas State University at San Marcos who completed a consumer economics and/or personal finance course between 1982 and 2007. Consequently, this sample is unique due to participants having had previous personal finance education. Table 1 presents the demographic characteristics of the sample.

Table 1. Sample Demographics (N = 328)

Variables		#	%
Age			
	<35	140	43
	35-45	126	38
	>46	62	19
Gender			
	Male	48	15
	Female	280	85
Household income			
	0 - $24,999	13	4
	$25,000 - $49,999	45	14
	$50,000 - $74,999	64	20
	$75,000 - $99,999	67	20
	$100,000 – 124,999	50	15

	$125,000 - $149,999	37	11
	$150,000 - $199,999	29	9
	$200,000 or more	23	7
Ethnic origin			
	American Indian or Alaska Native	0	0
	Asian or Pacific Islander	1	0
	African-American / Black	9	3
	Caucasian / White non-Hispanic	273	83
	Mexican-American / Hispanic / Latino	41	13
	Other	4	1
Highest level of education			
	Some college	3	1
	Bachelor's degree	276	84
	Master's degree	48	15
	Doctoral degree	1	0
	Professional degree	0	0

The overall response rate was 11% (328/3000). Each of the participants completed a questionnaire administered through Survey Monkey. Solicitation to participate in this study was sent via email and U.S. Postal Service during the 2009-2010 academic year. The U.S. Postal Service was the default method of solicitation when an accurate email address was not available. Physical addresses of alumni were provided by the Texas State University Alumni Association. Prospective participants were promised inclusion in a drawing for one of three $50 gift cards to Target, Amazon, or Best Buy if they completed the questionnaire. After the completion of data collection, the researchers conducted a drawing of three participants' names for gift cards and awards were delivered via U.S. Postal Service.

The descriptive statistics for the sample (see Table 2) show that 78% of the participants are married or coupled. Of those sampled 68% are purchasing a home and make monthly mortgage payments. Only 32% have participated in addition financial education through a class or workshop and 61% have read or engaged in additional financial education through reading or self-study. Results also indicate that at least 90% of the participants remembered taking the college level consumer economics or personal finance course between 1982 and 2007.

Table 2. Descriptive Statistics of the Sample (N = 328)

Variables	#	%
Relationship status		
Single	72	22
Married or Coupled	256	78
Housing situation		
Own house with no mortgage	35	11
Buying a home and making payments	223	68

Renting	56	17
Live with friend or relative	11	3
Other	3	1
Had completed a consumer economics or a personal finance course		
Yes	328	100
No	0	0
Remembered taking a consumer economics or personal finance course		
Yes	295	90
No	33	10
Participated in other personal finance class/workshop taken		
Yes	105	32
No	223	68
Read or engaged in self-study in personal finance		
Yes	199	61
No	129	39
Last TXState GPA Recorded		
Unidentified	11	3
<2.50	61	19
2.50 – 2.99	124	38
3.00 – 3.49	78	24
3.50 and above	54	16

3.2 Theory of Planned Behavior Variables

Based on guidelines for applying the TPB proposed by Ajzen and Fishbeing (1980) and by Ajzen (1991), a survey was created for use in this study. Three variables were identified as behavior predictors in this study: ATT, SN, and PBC. The items used to measure these variables were adapted from Joo (1998) who investigated financial wellness. Attitude (ATT) was assessed using a semantic differential item measured on a 7 point scale with items such as, “Maintaining a budget is” “Worth my time” (1) Too time consuming” (7) (reverse coded). The variable for Subjective Norm (SN) was measured with the single item, “It is expected of me that I plan and save for retirement” measured on a 1-7 Likert scale (1=Strongly Disagree, 7=Strongly Agree). The variable of Perceived Behavioral Control (PBC) was measured using three items: “I am confident that I can plan and save for retirement”, “For me, planning and saving for retirement is” 1=”Easy” to 7=”Difficult” (reverse coded) and “Whether I plan and save for retirement is entirely up to me”, also measured on a 7-point Likert scale. BI was measured using three 7-point Likert type items: “I intend to plan and save for retirement”, “I want to plan and save for retirement” and “I expect to plan and save for retirement”.

3.3 Saving for Retirement, Money Management and Wealth Management Behaviors Variables

The dependent variable in this study, SAV, was measured using dummy variables (1=Yes, 0=No) using three items: “I have set aside (or am saving) money to supplement Social Security in retirement”, “I have a tax-deferred savings plan so that I can put away money for retirement beyond the basic plan with my employer”, and “I save on a regular basis in addition to my retirement savings”.

Because SAV maybe a complex behavior influenced by education and income, it may very well be a consequence of money management behaviors (MMB) and wealth management

behaviors (WMB). For this reason, several additional variables were included in the survey to measure the influence of MMB and WMB on SAV. The first set of items focused on MMB, originally used to explore the concept, "financial wellness" (Joo, 1998). Each of the nine items is a money management strategy typically introduced in both consumer economics and personal finance textbooks (Zelenak&Reiboldt, 2010; Garman & Forge, 2010). For example: "I am aware of the total amount of money I/we owe" and "When I borrow money, (e.g. for a car or big ticket item), I shop around for the lowest price and interest rate". All nine items were measured on a 4-point scale (1=Never, 2=Sometimes, 3=Usually, 4=Always).
The second set of items related to WMB was also previously used to explore, "financial wellness" (Joo, 1998). These nine items are behaviors that financial planners and the authors of self-study publications recommend to build and protect net worth, such as "I have written down specific short-term and/or long-term financial goals" and "I have a written comprehensive financial plan". All nine of these items were measured as dummy variables (1=Yes, 0=No) because they are not performed repeatedly, but rather reflect a decision that has been made to perform or not perform them.

3.4 Conceptual Model

The proposed model suggests that while ATT and SN only influence behavior indirectly through BI, PBC can influence behavior directly (Figure 1). The behavior of focus in the model is SAV, but the two behaviors related to MMB and WMB are also included in the model because of the role they may play in contributing to SAV.

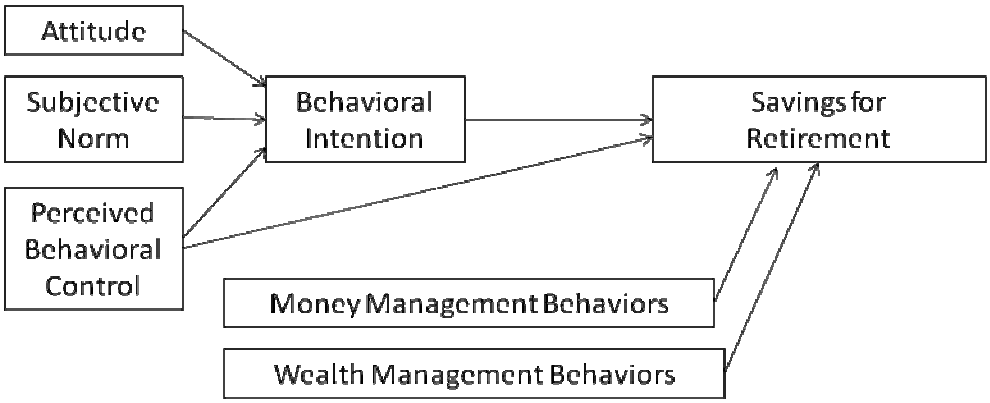

Figure 1. Conceptual Model

4. Findings
4.1 Variables

The first step in building the model of SAV was to create the seven variables, including the four from the TPB. The mean of 5.80 (SD=1.75) obtained for ATT indicates that participants felt maintaining a budget, an essential behavior for retirement planning, is much closer to "Worth my time" than "Too time consuming." Participants felt even more strongly about the SN, with a mean of 6.00 (SD=1.42) indicating they agreed with the statement, "It is expected of me that I plan and save for retirement". Reliability analysis demonstrated the variable PBC, created from summing and rescaling these two items (ATT and SN) back to the 7-point scale, was internally reliable with a Cronbach's alpha of α=.68 for two of the three items as follows: "I am confident that I can plan and save for retirement" and "For me, planning and saving for retirement is 1-Easy to 7-Difficult." A third item, "Whether I plan and save for retirement is

entirely up to me" was not included because it reduced the reliability of the variable to α=.483.

Three 7-point Likert type items were included in the survey: "I intend to plan and save for retirement", "I want to plan and save for retirement" and "I expect to plan and save for retirement". Reliability analysis determined that the three items used to measure the intention to save for retirement were highly reliable (α=.84) and the variable BI was created by summing and rescaling the 3 items back to the 7-point scale.

The two additional variables were MMB and WMB created in a similar fashion. Nine items formed the MMB variable. These nine items were found to be acceptably reliable (α=.68) and the variable MMB was created by summing the items and rescaling the variable to a 4-point scale. A mean of 3.25 (SD=.44) indicates that participants "Often" engaged in the behaviors. An examination of each behavior individually however, suggests that some of these behaviors were much more common than others (Table 3). Seventy-three percent of participants reported they are "always" aware of the total amount of money they owe and, when borrowing money for an auto or other big ticket item they "always" shop for the lowest price and interest rate. Ninety-four percent of participants said they "never" or "sometimes" spend more money than they have, yet 69% selected "always" in response to the item, "I reach the maximum limit on my credit cards". Fifty percent reported he or she "always" balances his or her checkbook, whereas only 16% reported "always" following a weekly or monthly spending plan or budget.

Table 3. Items Used to Create the Money Management Behavior (MMB) Variable

Money Management Behavior	Never		Sometimes		Usually		Always	
	n	%	n	%	n	%	n	%
I am aware of the total amount of money I/we owe.	0	0	14	4	76	23	238	73
When I borrow money (e.g. for a car or big ticket item), I shop around for the lowest price and interest rate.	4	1	15	5	69	21	240	73
I spend more money than I have.	153	47	154	47	20	6	1	<1
I keep track of how much I spend on household expenses each month.	26	8	5	28	97	30	112	34
I balance my checkbook.	65	20	41	12	58	18	164	50
I pay credit cards in full each month and avoid finance charges.	76	23	71	22	66	20	115	35
I reach the maximum limit on my credit cards.	5	2	13	4	83	25	227	69
I obtain cash advances to pay money toward other credit balances.	311	95	15	5	2	<1	0	0
I follow a weekly or monthly spending plan or budget.	70	21	116	36	90	27	52	16

The nine items used to create the WMB variable were also found to be acceptably reliable (α=.60) and the variable WMB was created by summing all nine items and dividing by nine so that the mean reflects a range between 0-1. Of the participants, 23% had engaged in at least four of the behaviors while another 21% had engaged in at least five behaviors (Table 4). Only eight participants (2.4%) had engaged in all nine behaviors, while 32 participants (9.8%)

and 27 participants (8.3%) had engaged in at least seven or eight behaviors respectively. Participants responded with "No" or "Yes" to each statement. Interestingly, only 23% chose "yes" to the item "I have a current up-to-date written will," yet, 48% said they use or had used a professional financial advisor or planner. Only 31% had calculated the amount of savings needed to cover expenses during retirement, and only 16% had a written comprehensive financial plan in place.

Table 4. Items Used to Create the Wealth Management Behaviors (WMB) Variable and Savings for Retirement (SAV) Variable

	Behavior	No		Yes	
		n	%	n	%
Wealth Management Behaviors	I have written down specific short-term and/or long-term financial goals.	165	50	163	50
	I have life insurance.	56	17	272	83
	I have medical insurance for the entire family.	37	11	291	89
	I have calculated the amount of savings I will need to cover my expenses in retirement.	227	69	101	31
	I have a written comprehensive financial plan.	274	84	54	16
	I have a current up-to-date written will.	252	77	76	23
	I use or have used in the past a professional financial advisor or planner.	172	52	156	48
	I have auto insurance that meets the state requirements.	4	<1	323	99
	I have disability insurance.	142	43	186	57
Saving for Retirement	I have set aside (or am saving) money to supplement Social Security in retirement.	111	34	217	66
	I have a tax-deferred savings plan so that I can put away money for retirement beyond the basic plan with my employer.	139	42	189	58
	I save on a regular basis in addition to my retirement savings.	130	40	198	60

The items used to form the dependent variable in this study, SAV, had acceptable reliability (α=.64). Like WMB, SAV was created by summing the three items and dividing by three to return the variable to a 0-1 scale. Of the participants, a full 19% had not engaged in any of the saving related behaviors measured by SAV. However, 118 participants (36%) had engaged in all three, while 14% and 31% had engaged in one or two of the behaviors respectively. Sixty-six percent stated they set money aside to supplement Social Security in retirement, 60% responded "yes" to the item "I save on a regular basis in addition to my retirement savings," and 58% said they had a tax-deferred savings plan in addition to the basic retirement plan with his or her employer (Table 4).

4.2 Correlation Analysis

Correlation analysis was conducted using Pearson's correlation to determine the relationship between all seven of the variables in the model, as well as four additional variables. Income and education are demographics that can be reasonably presumed to influence SAV. The variable called Supplementary Financial Education (SFE) was a single item that asked participants to indicate if he/she had supplemented his/her personal financial coursework taken at the university level (0=No, 1=Yes). In a similar vein, the variable called Self Study asked if participants read books about financial planning (0=No, 1=Yes).

The four variables from the TPB were significantly correlated with each other. ATT was only weakly correlated with BI (r=.26). On the other hand, SN and PBC were moderately correlated with each other (r=.45) and with BI (r=.59 and r=.56 respectively).

Saving was moderately correlated with PBC, weakly correlated with SN and BI, but not at all correlated with ATT. The WMB variable was moderately correlated with SAV while the MMB variable was only weakly correlated with SAV. Income had a weak correlation with WMB and SAV but not with the short-term planning behaviors seen in MMB or with any of the TPB variables. Education was weakly correlated only with SFE. However, the financial education variables (SFE and Self Study) were both weakly correlated with SAV. These results suggest that it is appropriate to include all of these variables in the conceptual model and that there are no undue concerns over multicollinearity.

4.3 Regression Analysis

Multiple regression analysis was first conducted to confirm the ability of ATT, SN and PBC to predict BI (Table 5). The analysis demonstrates that the three variables are statistically significant and do a good job of predicting the intention to save for retirement (R^2=.46) with the SN variable contributing the most (β=.42) and ATT contributing the least (β=.10).

Table 5. *Multiple Regression Analysis of the Theory of Planned Behavior (TPB)*

Variables	β		R^2	Adjusted R^2
ATT	.10	*		
SN	.42	***		
PBC	.34	***	.46	.46

* p< .05. ** p< .01. *** p< .001.

The TPB portion of the model uses BI and PBC to predict SAV, while the extended model includes additional variables to predict SAV. A multiple regression analysis was conducted to determine the ability of the TPB model to predict SAV (Table 6). The variables of PBC and BI together are able to predict only 21% of the variance in SAV (R^2 =.21). Alone PBC is a statically significantly factor in predicting SAV while BI, alone, is not. Another regression analysis included in the same table (Table 6) shows that BI alone is unable to predict SAV with any great accuracy (R^2 =.08).

Table 6. Multiple Regression Analysis of Saving Using the Theory of Planned Behavior (TPB)

Model	Variables	β		R^2	Adjusted R^2
TPB	PBC	.43	***		
	BI	.05		.21	.21

BI Alone	BI	.29	***	.08	.08

* p< .05. ** p< .01. *** p< .001.

All seven variables used in the conceptual model to predict SAV (PBC, BI, MMB, WMB, Income, Education, SFE and Self Study) were included in a backward stepwise regression of SAV (Table 7). This regression method enters all the variables into the model and then removes the weakest variables and reruns the model until all the improvements in the model have been obtained. The weakness of this method, that potentially explanatory variables will be unnecessarily eliminated, makes it an appropriate method for an exploratory study such as this where the goal is to find the variables that contribute the most to the prediction of the independent variable. In the end, four of the seven variables are included in the final model: PBC, MMB, WMB and Income.

Table 7. Final (Backward Stepwise) Regression of Extended Model

Source	SS	df	MS	
				F=39.811
Model	14.765	4	3.691	Prob> F= 0.0000
Residual	29.486	318	0.093	R^2=.334
Total	44.251	322	3.784	Adjusted R^2=.325
				Root MSE=.30450

opCtotal	Coefficient	t	p>t	*95% CI*
PBC	0.302	5.910	0.000	0.060 to 0.121
MMB	0.105	2.036	0.043	0.003 to 0.172
WMB	0.287	5.395	0.000	0.334 to 0.718
Income	0.108	2.189	0.029	0.002 to 0.041

Note. Excluded Variables: BI, SFE, Education and Self Study

4.4 Median Split by PBC

The role of PBC in predicting SAV was explored further by conducting a median split to place participants into two groups based on levels of PBC. The 44 participants with the median of 5.33 for PBC were not included in the grouping while the 150 participants with a PBC below 5.33 were put into a group labeled, "Low PBC" and the 134 participants with a PBC above 5.33 were put into the group, "High PBC". Descriptives for the ten variables of interest show other ways the two groups differed (Table 8). Analysis of variance (ANOVA) found that the two groups were significantly different on eight out of the ten variables with only SFE and Self Study being similar between the two groups.

Table 8. Mean Scores on Variables as a Function of Perceived Behavioral Control (PBC)

	PBC Low			PBC High		
	N	Mean	*SD*	*N*	Mean	*SD*
Attitude	150	5.41 $_a$	1.88	134	6.15 $_b$	1.57
Subjective Norm	149	5.34 $_a$	1.88	134	6.51 $_b$	1.12
Perceived Behavioral Control	150	4.11 $_a$	0.84	134	6.36 $_b$	0.48

Behavioral Intention	147	5.92	a	1.12	134	6.82	b	0.42
Money Management Behavior	150	3.12	a	0.46	134	3.37	b	0.37
Wealth Management Behavior	150	0.49	a	0.19	134	0.62	b	0.12
Saving	150	0.48	a	0.39	134	0.78	b	0.29
Income	150	4.11	a	1.89	134	4.70	b	1.91
Education	150	2.09	a	0.33	134	2.22	b	0.45
Supplementary Financial Education	150	0.29	a	0.45	134	0.38	a	0.49
Self Study	150	0.55	a	0.50	134	0.66	a	0.48

Note. Means in a row sharing subscripts are not significantly different at the .05 level based on an ANOVA.

The backward stepwise regression was repeated for each of these two groups in order to better explore the role of PBC on SAV. The final model for the Low PBC group included the same variable as in the final model for the entire sample. However Income was no longer significant at the $p < .05$ level (Table 9). The role of MMB in predicting SAV doubled from the combined final model (β=.11 to .23) while the role of WMB decreased somewhat (β=.29 to .23). The reduction in the ability of PBC to predict SAV (β=.30 to .18) is not surprising given that the median split dampened the range of values for PBC.

Table 9. Final (Backward Stepwise) Regression of Extended Model for Low Perceived Behavioral Control (PBC) Participants

Source	SS	df	MS	
				F=13.789
Model	6.159	5	1.251	Prob> F= 0.0000
Residual	15.856	141	0.112	R^2=.280
Total	22.015	146	1.363	Adjusted R^2=.259
				Root MSE=.33416

opCtotal	Coefficient	t	p>t	*95% CI*	
PBC	0.179	2.309	0.022	0.102	to 0.152
MMB	0.228	2.788	0.006	0.055	to 0.326
WMB	0.232	2.757	0.007	0.135	to 0.817
Income	0.148	1.857	0.065	-0.002	to 0.063

Note. Excluded Variables: BI, SFE, Education and Self Study

On the other hand, the final model for the High PBC group was different from the combined final model in important ways (Table 10). Specifically, MMB and Income were excluded from the model, while Self Study and Education were included in the model (although neither was significant at the $p < .05$ level). Like the Low PBC final model, the role of PBC is dampened by the median split (β=.30 to .23) but here it plays as large a role as WMB and MMB played for those with Low PBC.

Table 10. Final (Backward Stepwise) Regression of Extended Model for High Perceived Behavioral Control (PBC) Participants

Source	SS	df	MS		
					F=13.476
Model	2.733	3	0.911		Prob> F= 0.0000
Residual	8.722	129	0.068		R^2=.239
Total	11.455	132	0.979		Adjusted R^2=.221
					Root MSE=.260
opCtotal	Coefficient	t	p>t		*95% CI*
WMB	0.335	4.207	0.000	0.262	to 0.727
Education	0.122	1.574	0.118	-0.021	to 0.182
Self Study	0.147	1.847	0.067	-0.006	to 0.187
PBC	0.227	2.896	0.004	0.044	to 0.236

Note. Excluded Variables: BI, SFE, MMB and Income

5. Discussion

This study used a unique sample of participants who completed a consumer economics and/or personal finance course at Texas State University at San Marcos over a 25 year period. The study employed the TPB (Ajzen, 1991) to examine the target behavior of SAV. While the antecedents ATT, SN and PBC are believed to predict BI, findings suggest that SAV has more to do with PBC than BI. The previous research findings utilizing the TPB in the arena of personal finance and counseling (Ramayah, Yusoff, Jamaludi& Ibrahim, 2009; Xiao & Wu. 2008) produced similar findings. Rutherford and DeVaney (2009) and Bobek, Hatfielf and Wentzel (2007) studied the antecedents of BI related to personal finance and counseling issues but did not report BI findings. These studies suggest that higher levels of PBC make it more likely a change in the target behavior could occur.

A valuable result of the current study is the limited role of BI. The strength of one's BI to save for retirement had little to do with the target behavior, SAV. The degree to which the participant indicated that he/she had control over the target behavior was found to be the better predictor of SAV, suggesting that intending to save for retirement (BI) is not as important as the perceived difficulty to save for retirement (PBC).

One possible explanation for the strong relationship between PBC and SAV is that participants with higher PBC had their PBC boosted by past experience or by experience with successful saving. The results clearly indicate that SAV is related to the use of both money management strategies (MMB) and strategies to build wealth (WMB) as well as income level. It makes sense that the implementation of MMB and WMB would lead to SAV. It is also not surprising that having more disposable income is associated with an increased ability to save for retirement.

When participants were divided into two groups, those with low PBC and those with high PBC, the descriptive statistics yielded relevant differences. When separated from the overall sample, data from the low PBC group showed a doubling of the role of MMB in predicting SAV. This finding may indicate that individuals with low PBC and fewer resources (Income) may, out of necessity, manage financial resources more carefully than those in the entire sample or high PBC group. However, the role of WMB in predicting SAV slightly decreased within the low PBC group, suggesting that perhaps there are fewer assets to manage and protect among these participants.

On the hand, participants with high PBC reported themselves less likely to follow through with MMB and for them; income played a lesser role in predicting SAV. This suggests that those with higher PBC may not see the need to engage in MMB because there is enough disposable income to meet financial needs without much effort or emotional stress. However, education and self study now become contributing factors to SAV. It is possible that these individuals have higher PBC because they were taught or were able to teach themselves through self study how to implement MMB and WMB.

The limitations of the research is that those students who are currently members of the Texas State University Alumni and who have kept current contact information on file with the alumni association are the only alumni participating in the study. This limits the ability to generalize findings to all college graduates having had financial education during undergraduate studies. Additionally, while the data is primary data it is still self-reported data and is limited by the fact that it cannot be independently verified.

5.1 Conclusions and Implications

The finding of most relevance to financial educators, counselors and planners is the suggestion that the focus on financial education of individuals should differ based on the individual's level of PBC. Clients who exhibit lower perceptions of control toward saving for retirement may be better served by mentoring or coaching to implement MMB and WMB. The model suggests that successes with money management behaviors (MMB) as well as the accomplishment of specific goals through wealth building management behaviors (WMB) will best lead to the desired increase in SAV with this group.

On the other hand, those who already express confidence with regard to MMB and WMB may not benefit from a therapeutic focus on money management strategies (MMB) and/or strategies to build and protect wealth (WMB). Rather individuals with higher levels of PBC should be challenged to focus on supplementary financial education and self study activities in order to further boost their retirement savings efforts.

Further research on the psychological origins of PBC over money matters is needed. Perhaps one question to answer should be, "Are there specific financial beliefs that influence PBC more than others?" Klontz, Britt, Mentzer and Klontz (2011) identify four distinct money belief patterns which might be investigated with regard to PBC and successful follow through with MMBs, WMBs and SAV. Numerous studies have been documented on marital (relationship) satisfaction and personal finances, and couples' resilience to economic pressure. An investigation of marital satisfaction and PBC of financial behaviors may also add to the discussion. Self efficacy which is similar to PBC is another variable that has been used to predict a variety of behaviors and, like PBC, might also shed light on the origins of positive financial behaviors such as saving. Answers to such questions may lead the financial educators, counselor and planners to create educational programs which are most effective.

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