

ELIZABETH HOWLETT, JEREMY KEES, AND ELYRIA KEMP

The Role of Self-Regulation, Future Orientation, and Financial Knowledge in Long-Term Financial Decisions

This research examines potential explanations of why consumers have difficulty making personal financial decisions that will be most beneficial in the long run. Within the decision context of retirement savings, results from an experiment suggest that self-regulatory state, future orientation, and financial knowledge can influence consumer evaluations and intentions related to retirement investments (i.e., a 401(k) plan). Findings suggest that consumers who express higher levels of future orientation are more likely to participate in a retirement plan, an effect moderated by self-regulatory state. Results also suggest that financial knowledge and orientation toward the future can interact to influence the likelihood of 401(k) plan participation. Among consumers with a basic level of financial knowledge, future-oriented consumers expressed a greater likelihood to participate in a retirement plan than less future-oriented consumers. However, in the absence of knowledge, consumers' orientation toward the future did not influence the likelihood of 401(k) plan participation.

Offspring of the baby boomer generation (i.e., echo boomers) are the largest generation of Americans to emerge since the 1960s, numbering over eighty million (CBS News 2005). This large cohort is gradually coming of age at the same time as baby boomers are retiring or considering retirement. It is no wonder that long-term financial decision making has been such a hot topic in the media as of late with important implications for both individuals and society (Investment News 2007; Lim 2006). In addition to an aging population, researchers have noted a recent shift in how much money American consumers are willing and able to save for their retirement. For the first time since the Great Depression, overall consumer savings rates are negative (-0.4% in 2005 and -1.1% in 2006). These numbers are down sharply from the average savings rate during the mid-1990s ($+4.6\%$; Crutsinger 2007). Although there are a number of macrolevel, "uncontrollable"

Elizabeth Howlett is a professor of marketing in the Sam M. Walton College of Business, University of Arkansas, Fayetteville, AR (bhowlett@walton.uark.edu). Jeremy Kees is an assistant professor of marketing in the School of Business, Villanova University, Villanova, PA (jeremy.kees@villanova.edu). Elyria Kemp recently completed her PhD at the Sam M. Walton College of Business, University of Arkansas, Fayetteville, AR (ekemp@walton.uark.edu).

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economic factors that account for this troubling trend (e.g., rising energy costs), some experts have noted consumers' general tendency to opt to spend, as opposed to save, discretionary income. For instance, David Wyss (2007), Chief Economist at Standard and Poor's, has publicly stated that "Americans seem to have the feeling that it is wimpish to save" and that "the idea is to put away money for old age and we are just not doing that."

There are numerous long-term risks consumers face when they do not adequately save for retirement. Lack of financial resources during the later stages of one's life cycle can have devastating effects on consumer health and welfare (Kozup, Pagano, and Creyer in press). To compound the problem, many question whether or not the current Social Security system will be capable of providing an adequate level of financial support for retiring consumers into the future given the unprecedented strain that baby boomers are expected to place on the American health care system (Bethell 2005). Even if the current Social Security system is modified so that it can provide support to aging consumers, this system provides only a portion of the income that consumers earned before retirement. The uncertainty regarding government support in the form of Social Security coupled with the trend of Americans living longer strongly suggests that most echo boomers will require additional income for many years after they have stopped working (Boyles 2006). The importance of retirement savings in early life stages is critical, and thus, it is imperative for young adults currently entering the workforce to consider the potential long-term consequences of their current spending and saving habits.

Given the importance of financial decision making and planning for the long term, the objective of this research was to examine important factors that influence consumers' evaluations and decisions related to saving for the distant future. Within the context of retirement savings, we examine how self-regulatory state, future orientation, and financial knowledge can impact evaluations of and decisions regarding investments related to retirement planning.

BACKGROUND

One of the most-popular ways for consumers to save for the future is to enroll in a 401(k) plan (Obringer 2007). A 401(k) plan is a specific type of employer-sponsored retirement plan that enables employees to save for retirement while deferring income taxes on the saved money and earnings until they are withdrawn. Typically, a portion of the employee's wage is withheld and paid directly into the 401(k) account. In the most-common type of plan, the employee can choose to invest in a variety of different

funds. The long-term benefits of a savings plan are clear; however, the benefits are multiplied when the employer matches the individual's contribution. Consider a typical 401(k) "matching" plan offered by many firms, say, for every \$1.00 invested by the employee, the firm provides a \$0.50 match (up to 6%) of the total annual salary. In this case, if an employee earns \$40,000 annually and contributes 10% of his or her salary (\$4,000) to a 401(k) plan, the employer will provide an additional \$2,000 for a grand total savings of \$6,000. Typical drawbacks associated with 401(k) retirement plans include steep penalties associated with the early withdrawal of funds and forgoing spending in the short term. Money that is invested each week (or month) in a 401(k) plan is not available for things such as day-to-day living expenses, family vacations, or unanticipated "rainy days."

Despite the benefits of saving for the future, a significant percentage of people choose not to adequately save for long-term needs or have unrealistic retirement expectations such as overly optimistic expected returns on their investments or heavy reliance on state and/or workplace pensions (Sharp 2007). Outside of uncontrollable, external constraints on discretionary income (i.e., the amount of money leftover after basic needs such as food, clothing, and shelter have been satisfied), there are many potential explanations as to why consumers fail to adequately save for retirement. One popular framework to examine why consumers opt to spend today versus save for tomorrow is intertemporal choice (i.e., decision making over time; Loewenstein, Read, and Baumeister 2003). Many difficult circumstances could be avoided, such as financial hardship, if people simply made more careful, deliberate choices that match in accordance with their long-term best interests and goals. Of course, this is not an easy thing to do. Most consumers have made decisions at some point in their lives that seem reasonable in the short term but result in negative outcomes in the future. For example, having one too many drinks when out at a work happy hour could possibly have the negative effect of a hangover the next day. Although these types of decisions can be harmless in isolation, they also have the potential to lead to severe negative consequences over time—alcoholism, drug abuse, obesity, and/or personal bankruptcy are a few examples of these potential long-term negative consequences.

Self-regulation is a psychological process that plays a significant role in determining how individuals respond to choices with intertemporal consequences and can be defined as the process through which people exert control over their thoughts, feelings, and behavioral impulses (Baumeister et al. 2006). In order to maximize one's long-term well-being, it is often

necessary to avoid selecting options with short-term benefits, but long-term consequences, by overriding or regulating impulses. Studies have investigated how various societal problems are explained by consumers' struggles with self-regulation. Financial decision making is a classic decision context that requires self-regulation. Consumers constantly must make trade-offs regarding the hedonic utility of spending money today on pleasurable things versus saving money to help ensure future financial security. Thus, self-regulation can be an important factor in financial decision making, especially as it relates to retirement planning.

Another popular explanation of why consumers struggle with sacrificing impulses to maximize future utility is individual differences in future orientation. A rich body of literature has developed that demonstrates that people differ in terms of the emphasis or weight that is attached to long-term versus short-term outcomes of their behaviors (Bearden, Money, and Nevins 2003; Strathman et al. 1994; Zimbardo and Boyd 1999). Other research suggests that the degree to which people consider the long- and short-term consequences of their behavior is not merely a preoccupation, or a lack thereof, with the future but rather a cognitive mind-set (Orbell, Perugini, and Rakow 2004). That is, a number of researchers have demonstrated that future orientation is a stable personality characteristic that can have a significant influence on behavioral outcomes (Zimbardo and Boyd 1999). This research seeks to examine consumers' orientation toward the future as a predictor of financial decision making. Our study should complement previous work that has shown relationships between financial decision making and sensation seeking (e.g., Wong and Carducci 1991; Zuckerman 1994), impulsivity (Kirby et al. 1999), and conscientiousness (Verplanken and Herabadi, 2001). The extent to which consumers consider future consequences of their behavior would seem to be an important factor in how likely consumers are willing to sacrifice pleasure from spending in the short term for financial security in the long term after retirement.

Beyond important "psychological" variables such as self-regulation and consideration of future consequences (CFC), basic financial knowledge is a critical factor in financial decision making (Kozup, Pagano, and Creyer in press). For instance, although many consumers may have a powerful capacity to self-regulate impulse purchases and are highly concerned about their postretirement financial well-being, they may still lack the knowledge and insight necessary to make wise financial decisions. There is evidence that suggests that many Americans lack financial literacy and thus do not have the ability to make sound financial decisions, especially with regard to retirement planning (Peterson 2007). One potential reason for this trend

is that the national financial system has become increasingly complex, resulting in individuals having to accept more responsibility for managing the details of their retirement planning. Meanwhile, personal bankruptcies are on the rise and individual savings rates are declining (Balls 2006; Kiplinger 2007). As the recent crisis involving subprime mortgages has demonstrated, the lack of financial literacy can hit lower-income families especially hard. Given the above discussion, consumers' financial knowledge, especially in regard to their understanding of retirement plans, should also play an important role in long-term decisions regarding long-term retirement planning.

The purpose of this research was to explore how self-regulatory state, CFC (i.e., their orientation toward the future), and financial knowledge combine to influence consumers' (1) intentions to enroll in a 401(k) plan and (2) specific mutual fund evaluations. After a brief review of the literature and conceptualization, we present a series of hypotheses. We then describe the method and results from a between-subjects experiment. Finally, the implications of this research for consumers, public policy advocates, and marketers are discussed and opportunities for future research are identified.

CONCEPTUALIZATION AND HYPOTHESES

Self-Regulation

Self-regulatory processes have been the focus of a great deal of recent research across a variety of disciplines (Carver and Scheier 1981; Gailliot et al. 2007; Govorun and Payne 2006; Hofmann, Rauch, and Gawronski 2007). According to the most-common conceptualizations, self-regulation involves a single stock of resources that operate like energy or strength. These self-regulatory resources help direct responses (Baumeister et al. 1998; Vohs and Heatherton 2000) and are put into use when individuals attempt to modify, alter, or regulate their behaviors (Vohs 2006). When various demands deplete these resources, individuals may fail at self-control (Muraven and Baumeister 2000). For example, Baumeister et al. (1998) demonstrated how inner resources could be depleted using temptation and impulse control. In one condition, participants who had skipped a meal were seated in front of chocolates and cookies and told to refrain from partaking of any of the chocolates and cookies but were told to help themselves to a bowl of radishes. The participants in this condition gave up much faster on a subsequent geometric figure-tracing exercise compared to participants in either of

two control groups (one of which was permitted to eat the cookies and chocolates and the other of which was never exposed to food of any kind). Resisting temptation depleted self-regulatory resources, making it difficult to persist in an ensuing self-control task.

The process of self-regulation has been conceptualized as the means through which impulses are restrained and undesirable actions are replaced by more-appropriate actions. According to Baumeister et al. (1998), self-regulation has three central components. First, there is an establishment of goals and standards. Second, there is a monitoring of one's distance from current status to a desired end point. For instance, consumers are often able to self-regulate themselves during impulsive buying situations (Vohs and Faber 2007). Finally, there are operations that move one from the current state to the desired state. Self-regulation can also be viewed as a knowledge structure. That is, according to this conceptualization, self-control operates as a master schema; an initial act of self-control may prime the schema thus facilitating further self-control. However, as noted above, problems with self-control may occur if self-regulatory resources are depleted. As discussed above, substantial prior research has shown that self-regulation is a limited resource.

The depletion of self-regulatory resources discussed above has been referred to as ego depletion. Ego depletion describes the condition whereby the self's resources are expended and thus temporarily operate at less than full capacity. Resisting temptation, engaging in mental and attentional control, and regulating emotions can deplete the self's resources. Vohs and Faber (2007) found that depleting consumers of these limited resources could result in impulsive buying. Specifically, consumers whose resources were depleted, relative to consumers whose resources were not depleted, felt stronger urges to buy, were willing to spend more, and actually did spend more money in unanticipated buying situations.

Self-regulation has clear implications for long-term financial decision making. Consumers must restrain themselves and resist temptation to spend money in the short term in order to maximize their financial well-being in the long term. Individual preference for smaller, immediate rewards over larger, delayed rewards is a phenomenon known as temporal discounting (Loewenstein and Prelec 1992). In an ego-depleted state, we suggest that consumers will express a stronger preference for immediate rewards (such as a higher weekly paycheck) than consumers who are not in a state of ego depletion. Thus, H1 predicts that the temporary level of self-regulatory resources will influence consumers' long-term financial decisions. We predict that when self-regulatory resources are depleted

through an experimental manipulation, consumers will show a greater preference for immediate rather long-term benefits.

Similarly, prior research has demonstrated that participants in an ego-depleted (i.e., low self-regulatory) state are more likely to take risks. That is, when executive control has been diminished, individuals are more likely to engage in risky behaviors (Muraven, Collins, and Neinhans 2002). It is unclear why this tends to be the case. On the one hand, in an ego-depleted state it may be more difficult to resist a higher reward. On the other hand, perhaps a higher payoff, without consideration of its probability, is simply more attractive. Thus, we make the following predictions:

H1: When self-regulatory state is decreased, consumers will report (a) lower likelihood of contributing to a 401(k) plan and (b) more-favorable attitudes toward a risky investment.

Future Orientation

Many choices that consumers make are intertemporal in nature. Even routine choices such as what to eat for breakfast and how much to take out of the ATM machine involve trade-offs between outcomes that occur in the present, or short term, and outcomes that have more long-term consequences. Why people so frequently opt for short-term pleasures with negative long-term consequences, such as failing to adequately save for retirement, has been of substantial research interest.

One explanation for this pattern of behavior is based on the assertion that some people have a lower propensity for considering the future outcomes of their current behaviors than others. Future orientation has been described as the extent to which potential future consequences of an action influence current decision outcomes. There have been various studies that examine individual differences in perceptual orientation toward time (e.g., Bearden, Money, and Nevins 2006; Joireman, Strathman, and Balliet 2006; Lasane and Jones 2000; Zimbardo and Boyd 1999). One popular measure, CFC, captures "extent to which individuals consider distant outcomes of their current behaviors and the extent to which they are influenced by these potential outcomes" (Strathman et al. 1994). A scale to measure an individual's CFC was developed by Strathman et al. (1994). Their research demonstrated that people who score high on the CFC scale are more likely to engage in pro-environmental behavior, have higher academic achievement, and make more healthful diet-related choices than people with low CFC scores. As others have argued, an individual's orientation

toward the future has such a pervasive influence on so many different aspects of day-to-day life that its biasing effects on decision processing are easy to ignore. Individuals high in CFC tend to be more likely to engage in a variety of personally beneficial behaviors (for a review, see Joireman, Strathman, and Balliet 2006).

Future orientation (operationalized as CFC) involves the struggle between the short-term and the long-term outcomes of one's behavior and is expected to exert a considerable influence on individuals' financial planning processes. More specifically, CFC is proposed to guide the processing of information and the formation of both attitudes and behaviors related to retirement planning decisions. Although individual differences in CFC have been shown to predict a variety of consumer behaviors, there has been very limited research that has examined how CFC might impact financial decision making. One recent study by Joireman, Sprott, and Spangenberg (2005) showed that individuals high in CFC reported being less likely to engage in impulsive buying behavior and more likely to use a hypothetical windfall in a fiscally responsible fashion (e.g., paying down credit card debt). Based on the conceptualization of the CFC construct, we predict that consumers who display a higher propensity to consider the future consequences of their behavior (i.e., future orientation) will be more likely to make decisions and evaluations that will maximize their future financial well-being.

H2: Consumers with high levels of CFC will report (a) higher likelihood of contributing to a 401(k) plan and (b) less-favorable attitudes toward a risky investment versus consumers with low levels of future orientation.

Self-regulatory state is expected to moderate the influence that one's future orientation has on financial decisions. We are interested in the relative influence of both the self-regulatory mechanisms and the consumer's outlook toward the future. In the course of everyday life, there are numerous examples and instances of self-regulation failure. For example, obesity is increasing at an alarming rate, consumer spending is high, and saving rates are low. Although there are numerous factors that may influence these issues, it could be argued that they are caused at least in part by consumers' inability to self-regulate. We suggest that although consumers may have good intentions, these intentions can sometimes be overwhelmed by stronger impulses. That is, when the self is not in a depleted state, instead of responding to impulses and urges, it should be able to engage in reflective, controlled behavior. Thus, we expect consumers with high levels of future orientation to express (1) a greater likelihood of participating in

a retirement plan and (2) less-favorable attitudes toward a risky investment than less future-oriented consumers when the ego is not depleted. However, differences between more- and less future-oriented consumers should be less apparent when the ego has been depleted. That is, the depletion of self-regulatory resources should minimize the influence that the consumers' orientation toward the future has on the decision-making process.

H3: Consumers with high levels of CFC will report (a) a higher likelihood of contributing to a 401(k) plan and (b) less-favorable attitudes toward a risky investment than less future-oriented consumers in a non-ego depleted state (i.e., when in a high self-regulatory state). However, when in a decreased self-regulatory state, differences between consumers' CFC will not influence their likelihood of participation in a retirement nor influence their attitude toward a risky investment.

One potential way to increase retirement savings may be to enhance the financial literacy of Americans or, more specifically, the knowledge they have regarding particular investment options (Mymoney.gov 2007). Being "financially literate" means having the knowledge, skills, and habits to successfully manage your money. There is a growing body of literature that demonstrates the positive role of financial education in financial planning behavior (Hilgert, Hogarth, and Beverly 2003; Lusardi and Mitchell 2007; Perry and Morris 2005). However, many consumers simply lack the knowledge and insight necessary to make appropriate savings decisions (Financial Literacy and Education Commission 2006). Consider how a lack of understanding of the concept of inflation may influence consumers' savings plans. In 2007, the average Social Security benefits received by retired workers are slightly more than \$1,000 per month (U.S. Social Security Administration 2007). Back in 1960, when the average teacher's annual salary was \$5,400, this may have sounded like a great deal of money, but today, it is below the poverty line for a two-person household. Improving the financial literacy of consumers is especially important given the recent movement away from defined benefit retirement plans toward defined contribution plans (Calio 2006). In fact, simply informing consumers about the tax advantages associated with many retirement accounts may encourage increased individual retirement accounts or pension fund contributions.

As noted above, many American consumers lack basic financial knowledge necessary to make well-informed decisions. We propose that not only is knowledge about the benefits of sound retirement planning important but also consumers need to have a future-oriented outlook in order to make

sound long-term financial decisions. That is, consumers must be motivated to put that knowledge to good use.

H4: In the absence of basic financial knowledge, the consumers' CFC will have little influence on the likelihood of contributing to a 401(k) plan. However, among participants with some basic financial knowledge, consumers with higher levels of CFC will (a) express higher likelihood of contributing to a 401(k) plan and (b) have less-favorable attitudes toward a risky investment than consumers with lower levels of CFC.

EXPERIMENT

Sample and Procedure

Graduating seniors at a public university in the south-central portion of the United States participated in the study. The ages of the participants ranged from twenty to thirty-six with a mean age of twenty-one years ($N = 89$). Given the discussion in the introduction regarding the importance of saving early in life for retirement, this sample is highly relevant to study long-term financial decision making. This demographic will soon be entering the workforce for the first time and will be faced with an array of decisions related to long-term financial (i.e., retirement) planning. Participants were presented booklets containing instructions, experimental scenario and stimuli, dependent measures, and requests for demographic information. A brief set of instructions were first presented and then participants in the invoked financial knowledge condition were asked to read a brief article taken from the Web site of a 401(k) plan administrator. Next, the self-regulation task was presented. Participants were asked to imagine that they were starting a new job and had to decide whether or not they wanted to participate in their employer's 401(k) plan. A brief scenario followed, describing the task, which was to evaluate options for enrolling in their new employer's 401(k) plan. Participants then responded to a series of questions about the different enrollment options. Finally, participants provided demographic information.

Experimental Design and Stimuli

The design was a 2 (induced financial knowledge: present vs. absent) \times 2 (self-regulatory focus: high vs. low) \times 2 (CFC: high vs. low) between-subjects factorial. Thus, eight different conditions were used in the experiment. Whereas induced knowledge and self-regulatory state were manipulated in the experiment, CFC was measured.

To induce financial knowledge about the nature of 401(k) plans, half the participants were presented with a 295-word summary describing how typical 401(k) plans operate. This information was based on information presented on an investor education Web site (401k.com 2007). The other group of subjects read a 297-word essay on environmental sustainability that described actions that consumers can take to help protect the environment.¹ Participants read the articles at their own pace and proceeded with the study when finished.

Self-regulatory state was manipulated by presenting half the participants with a typewritten paragraph from an upper-level college statistics book. Participants were given instructions not to cross out the letter "e" if a vowel was adjacent to it or if the "e" was one letter away from a vowel. In addition, the resolution of the text was denigrated to make the task more difficult. This task would require subjects to engage in self-regulation by having them scan for each letter "e" but then have to override natural response tendencies of crossing it out if specific criteria were met.

The other half of the group was exposed to the control condition. The control condition simply involved crossing out all instances of the letter "e" from the typewritten paragraph. This was used as the control condition because it required minimal self-regulation, with participants easily and quickly becoming accustomed to scanning for every letter "e" and then crossing it out. As a manipulation check, subjects were asked to rate on a 7-point scale how difficult and how much effort the task required.

Consumers' CFC was assessed by a 12-item measure as described by Strathman et al. (1994). Participants were asked to indicate whether or not twelve statements were characteristic of themselves by circling the appropriate number on the scale, which ranged from 1 (strongly disagree) to 7 (strongly agree). The measure included items such as "I consider how things might be in the future and try to influence those things with my day to day behavior" and "I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes." The reliability estimate for this measure indicated a satisfactory level of reliability (Cronbach's $\alpha = .80$). A median split (mean = 4.86) was performed on the data in order to differentiate high-CFC participants ($N = 50$) from low-CFC participants ($N = 42$). As expected, mean CFC scores were significantly lower for low-CFC participants as compared to high-CFC participants.

1. It is important to note that the essay on environmental sustainability was carefully written to ensure that it was neutral in terms of time periods as not to confound this manipulation with CFC (i.e., the essay was not focused on short- vs. long-term actions nor temporally proximally vs. distant effects on the environment).

Dependent Measures

Two dependent measures were used to test the hypotheses in this research. Likelihood of contributing to a 401(k) plan was measured by asking participants about how they felt about forgoing participation in their employer's retirement plan. The decision to not participate in a firm-sponsored retirement program is a very poor financial choice with serious long-term negative consequences. This measure comprised two 7-point items that were anchored with "favorable/unfavorable" and "positive/negative" ($r = .85$). It is important to note that for this scale, lower values indicated that participants were more likely to contribute nothing to the retirement plan, while higher values indicated that participants were more likely to save for retirement. Attitude toward a risky investment was also measured with two items. Participants were asked to report their evaluations of a mutual fund with a "high-risk and moderate return potential." This measure also comprised two 7-point items that were anchored with "favorable/unfavorable" and "positive/negative" ($r = .91$). Responses were recoded so that higher values indicate a more-positive evaluation of the investment.

RESULTS

The results for the effects of self-regulatory state, financial knowledge, and future orientation (i.e., CFC) on the dependent variables are presented in Table 1. As expected, multivariate effects of self-regulatory state (Wilks'

TABLE 1
Multivariate and Univariate Results

Independent Variables	MANOVA Results		Univariate <i>F</i> Values	
	Wilks' λ	<i>F</i> Value	401(k) Plan Enrollment Intentions	Attitudes Toward Moderate Return/High-Risk Fund
Main effects				
SRS	.93	3.01**	5.8*	<1
CFC	.84	7.87*	6.32*	10.65*
Knowledge (K)	.93	2.77***	<1	5.61**
Interaction effects				
SRS \times CFC	.89	4.98*	<1	10.03*
SRS \times K	.99	<1	<1	<1
CFC \times K	.91	3.91*	4.98**	1.2
SRS \times CFC \times K	.98	<1	<1	<1

* $p < .01$, ** $p < .05$, *** $p < .10$.

$\lambda = .93, F = 3.01, p < .05$) and CFC (Wilks' $\lambda = .84, F = 7.87, p < .001$) are significant. The two-way interactions between CFC and financial knowledge (Wilks' $\lambda = .91, F = 3.91, p < .05$) and between CFC and self-regulatory state (Wilks' $\lambda = .89, F = 4.98, p < .01$) are also significant.

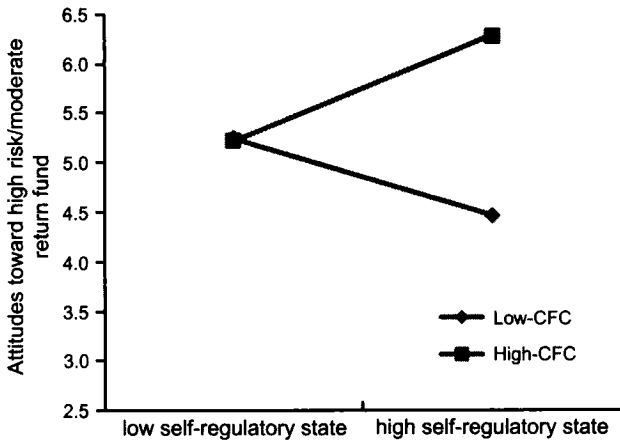
Follow-up univariate analyses indicate that as expected, self-regulatory state has a significant influence on consumers' likelihood of contributing to a 401(k) retirement plan, $F(1, 83) = 5.80, p < .0001$. More specifically, as predicted in H1a, the reduction of self-regulatory state through the experimental manipulation resulted in a decreased likelihood of consumers participating in a 401(k) plan (mean = 4.73 vs. 5.58). However, H1b was not supported in that no significant difference was observed between the two self-regulatory state conditions for the risky mutual fund investment attitude dependent variable.

H2 predicted that future-oriented consumers (i.e., high CFC) would be more likely to participate in a 401(k) retirement plan and would have less-favorable attitudes toward a mutual fund investment that had high levels of risk in the long term than low-CFC consumers. Findings support these predictions. High-CFC (vs. low-CFC) consumers reported higher levels of likelihood of participating in the retirement plan (mean = 5.60 vs. 4.71), $F(1, 83) = 6.32, p < .01$, and also less-positive attitudes toward the high-risk/moderate return investment (mean = 5.77 vs. 4.84), $F(1, 83) = 10.65, p < .01$. These findings support H2a and H2b.

H3 predicted that a consumer's self-regulatory state would moderate how individual differences in future orientation influence consumers' responses to the two dependent variables. A significant self-regulatory state by CFC interaction was found to influence consumers' attitudes toward a high-risk mutual fund investment, $F(1, 83) = 10.03, p < .01$, but not consumers' likelihood of enrolling in a 401(k) retirement plan. As shown in Figure 1, high-CFC consumers had less-favorable attitudes toward a risky investment than low-CFC consumers when self-regulatory state was high (mean = 6.28 vs. 4.46). However, when in a decreased self-regulatory state, differences between consumers' future orientation did not influence their attitudes toward a risky investment (mean = 5.22 vs. 5.25). Thus, H3 was partially supported.

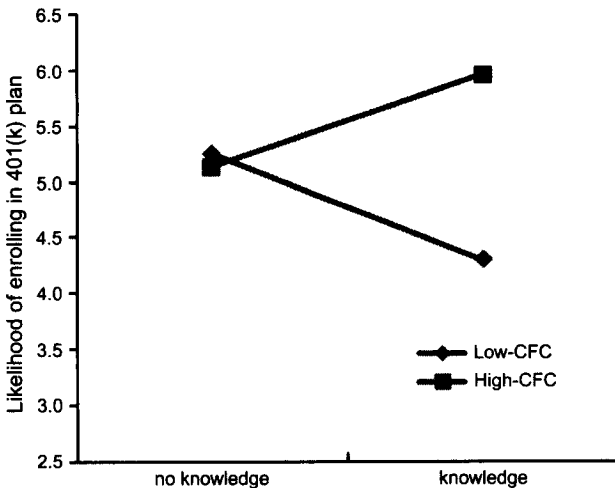
H4 predicted that in the absence of basic financial knowledge, the consumers' orientation toward the future would have little influence on the likelihood of contributing to a 401(k) plan. However, with some basic level of financial knowledge, consumers with higher levels of future orientation (i.e., high-CFC consumers) would (a) express higher likelihood of contributing to a 401(k) plan and (b) have less-favorable attitudes toward a risky investment than consumers with lower levels of future orientation. These

FIGURE 1

Moderating Effect of Self-Regulatory State on the Consideration of Future Consequences

expectations were confirmed. As expected, and as shown in Figure 2, the likelihood of enrolling in a retirement plan was influenced by the interaction between financial knowledge and future orientation, $F(1, 83) = 4.98$, $p < .05$. In the absence of financial knowledge, the consumer's orientation toward the future had no influence on the likelihood of 401(k) plan participation (mean = 5.13 vs. 5.23). However, among consumers who were

FIGURE 2

Moderating Effect of Knowledge on the Consideration of Future Consequences

primed with financial knowledge regarding retirement planning, likelihood of 401(k) plan participation was higher for high-CFC consumers than for low-CFC consumers (mean = 5.96 vs. 4.30). Thus, H4a was confirmed. Contrary to expectations, consumers' attitudes toward the high-risk mutual fund investment were not influenced by the interaction between financial knowledge and future orientation.

DISCUSSION

It is important to better understand the future implications of current financial planning by young adults today, particularly given the uncertainties of the federal Social Security system (Bethell 2005), the recent trend of negative savings rates (Crutsinger 2007), and the devastating effects of failing to adequately prepare for retirement (Kozup, Pagano, and Creyer in press). Enrolling in a 401(k) plan is one of the most-popular ways to financially prepare for the future. However, many Americans are neglecting to do this, and unfortunately, many individuals lack the basic financial literacy necessary to make wise financial decisions. This study examined the effect that self-regulatory state, future orientation, and basic financial knowledge about 401(k) plans had on consumer evaluations of particular investments and intentions to enroll in a retirement plan.

The results of this research indicate that as expected, self-regulatory state has a significant influence on the likelihood of contributing to a 401(k) retirement plan. Specifically, when consumers experienced an experimentally manipulated "ego-depleted state," they were less likely to indicate that they planned to participate in a firm-sponsored retirement plan. This pattern of results is consistent with past studies that have shown that consumers have difficulty executing self-control when self-regulatory resources were depleted (Baumeister et al. 1998; Vohs 2006).

In our study, self-regulatory state was temporarily attenuated through our manipulation. This finding suggests that employers should consider the context in which they provide employees with retirement information. For instance, findings from this study seem to suggest that retirement information/seminars should be given when people are well rested and attentive (i.e., when self-regulatory focus is high). Future research might examine if certain scenarios might *enhance* self-regulation. Considering many long-term financial decisions, such as 401(k) plan allocations, are made infrequently and with the help of a financial advisor, it would be useful to examine if self-regulatory state can be temporally strengthened. This may, in turn, reduce temporal discounting and facilitate decisions that help ensure long-term financial stability. This would be especially useful since

consumers typically do not have to self-regulate themselves and “choose” to participate in retirement savings on a week-to-week or month-to-month basis. Once the initial decision has made to allocate funds to a retirement account, it is usually automatically deducted each pay period. Thus, unlike dieting or smoking, financial self-regulation as it relates to retirement planning does not necessarily need to be in force on an ongoing basis. This presents a unique opportunity for consumers to put themselves on solid financial footing in the long term by self-regulating at distinct points in time without requiring them to maintain high levels of self-regulatory focus on a day-to-day basis. This would be an interesting and important direction for future research.

Our findings also demonstrated a relationship between the future orientation and the dependent variables. Specifically, future-oriented consumers (i.e., those with a high degree of CFC) reported that they would be more likely to participate in a 401(k) retirement plan and expressed less-favorable attitudes toward a high-risk/moderate return mutual than consumers with lower levels of future orientation. This finding is highly consistent with prior research on the CFC construct that suggests high-CFC individuals are more likely to consider the future consequences of their behaviors and make decisions that are consistent with long-term goals and aspirations (Joireman, Sprott, and Spangenberg 2005; Strathman et al. 1994). Results are consistent with conceptualization of the CFC construct and prior CFC research in that some consumers tend to do a better job recognizing actions or behaviors that might jeopardize their long-term well-being, such as failing to plan for retirement. In a financial planning context, it would be extremely useful to be able to identify consumers who tend not to consider the future consequences of their behaviors. The CFC scale may be a means by which to do this, which could be followed with targeted communications regarding the importance of planning for one's financial future.

Furthermore, future research may investigate ways in which to prime future orientation. Studies that identify ways in which to induce higher levels of CFC would be useful in that employees may be more likely to participate in retirement plans if they are primed to think about the future benefits of participating and/or the potential future consequences of *not* participating. Again, considering 401(k) contribution decisions are often more isolated in time, rather than ongoing, any mechanism that can prime the importance of one's financial health into the distant future would be useful. There are various financial calculators and tools available to demonstrate the power or compounding interest and the importance of starting to save early in life. However, there is little research that examines the

relative usefulness of these cues in helping consumers realize the importance of sacrificing short-term pleasures for long-term financial security.

Findings from our study also suggest that self-regulatory state and individual differences in future orientation can have an interactive effect on consumers' attitude toward a high-risk mutual fund. Consistent with the future orientation main effect discussed above, when consumers are in a stable self-regulatory state, high-CFC consumers reported less-favorable attitudes toward the risky investment than consumers who scored low on the CFC scale. However, when self-regulatory state was reduced through our experimental manipulation (i.e., ego depletion), no difference in low- and high-CFC consumers was observed. This finding reinforces the importance of self-regulatory state when making financial decisions. In the context of our study, even consumers who typically are diligent thinking about the future evaluated an investment that would *not* be favorable in the long term more favorably when self-regulatory state was experimentally reduced.

One of the more important and interesting findings from our study was the influence of financial knowledge on financial decision making. Financial literacy involves one's understanding and knowledge of financial concepts and is imperative for effective consumer financial decision making (Fox, Bartholomae, and Lee 2005). Results show that in the absence of basic financial knowledge, consumers' orientation toward the future had little influence on the likelihood of contributing to a 401(k) plan. That is, the effect of future orientation discussed above did not seem to be present when consumers were not presented basic information on how a 401(k) plan worked. However, with some basic level of financial knowledge, consumers with higher levels of future orientation both (1) expressed higher likelihood of contributing to a 401(k) plan and (2) had less-favorable attitudes toward a risky investment than consumers with lower levels of future orientation. This finding reinforces the importance of sound financial knowledge discussed from the outset of this paper.

It is important to note that the hypothetical context in which the experiment was conducted and the operationalization of intentions to invest in a 401(k) plan are limitations to our study. Although participants were graduating seniors who will be making retirement investment decisions soon, it would be useful to extend this research to a workplace environment and capture consumers' actual investment decisions. There is past research that suggests that consumers' feelings about forgoing an option is conceptually different than their intentions to choose.

Jump Start Coalition for Personal Financial Literacy, a national coalition of organizations working to improving the financial literacy of kindergarten

through college-aged youth, has reported that young people are leaving school without the basic skills to manage their personal financial affairs, putting them at a high risk for not being able to plan responsibly for their financial future. Our findings reiterate the need for focused financial knowledge when making financial decisions and are also consistent with prior studies that have demonstrated the positive role of financial education in financial planning behavior (e.g., Lusardi and Mitchell 2007; Perry and Morris 2005) and that consumers who are financially knowledgeable are more likely to behave in financially responsible ways (Hilgert, Hogarth, and Beverly 2003). Thus, even if consumers have a high degree of future orientation, our findings suggest that they also need the prerequisite knowledge to make good financial decisions.

This research explored an issue that has important implications not only for consumers but also for the entire nation. Our research shows that self-regulatory state, individual differences in future orientation, and financial knowledge may play an important role in how consumers plan for their financial future.

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