THREE ESSAYS ON PERSONAL FINANCIAL DIFFICULTIES OF MILITARY MEMBERS

by

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B.S., Embry-Riddle Aeronautical University, 1984

M.S., Abilene Christian University, 1992

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY

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Abstract

This three essay dissertation examined questions related to personal financial difficulties of military members with the aim of suggesting the most effective focal points for those involved in development of policy or programs or working directly with military members on improving their personal financial condition. The introduction (Chapter 1) describes the nature of the problem, the level of attention it has received within the civilian and military leadership structure, and generally what has been done to address it before presenting an outline of the chapters which follow.

The first essay (Chapter 2) relies on theoretical guidance from stress and coping theory to examine determinants of a military member's choice of problem-focused over emotion-focused coping strategies. The study used primary data collected from a sample of soldiers (n = 688) at a large Midwestern military installation. Its results indicated that military members with an internal locus of control and those who performed positive financial behaviors in response to a financial stressor reported lower levels of financial stress.

Taking its theoretical guidance from the theory of planned behavior, the second essay (Chapter 3) examined the relationship of the behavioral antecedents of attitude toward behavior, subjective beliefs, and perceived behavioral control with behaviors related to establishing and maintaining an adequate emergency fund and maintaining positive cash flow, the term used for keeping spending at levels below income over time. The study analyzed primary data from a sample of soldiers at a large Midwestern military installation (n = 93). Of the 11 models analyzed, most were statistically significant, though, individually, the behavioral antecedents themselves did not yield statistical significance as often. Although fewer definitive findings emerged from the cash flow group of models, results of the emergency fund group indicated that

attitude toward behavior and perceived behavioral control are positively influential on behaviors related to maintaining an emergency fund.

The third essay (Chapter 4) detailed a study which tested the theoretical assumption that better informed consumers make better financial choices. The study examined self-assessed financial knowledge, a self-assessed measure of confidence in day-to-day personal financial management termed financial confidence, and objectively measured financial knowledge as potential determinants of certain positive and negative financial behaviors. The positive behaviors were maintenance of positive cash flow and an adequate emergency fund, and the negative behaviors were engaging in high-cost borrowing through auto title lenders, payday lenders, pawn shops, and rent-to-own stores, collectively termed alternative financial services (AFS). The study analyzed secondary data from a sample of military members collected by the 2012 National Financial Capability Study which yielded a set of 949 responses useable for the study described in this chapter. Subjective knowledge was found to be associated with emergency fund maintenance, but not positive cash flow, while objective financial knowledge and financial confidence were found to be positively associated with positive cash flow, but not emergency fund maintenance. Females and those with higher incomes were found to be more likely to maintain positive cash flow, while those with three or more dependent children and those having experienced a recent income shock were less likely to do so. Females, members with graduate degrees, and members with a higher investing risk tolerance were more likely to maintain emergency funds, though members with two or more children and those having experienced a recent income shock were less likely to do so. Subjective financial knowledge was found to be positively related to AFS use, while objective financial knowledge and financial confidence were found to be negatively associated with AFS use. Members with more dependent children and those having experienced recent income shocks were more likely to have used AFS, while those with higher incomes were less likely to have done so.

The conclusion (Chapter 5) summarizes the findings of all three essays, their implications, and suggests directions for future research. It re-emphasizes the unique contributions of the essays to personal finance literature pertaining to military members and its importance for policy makers, military leaders, and anyone involved in developing or administering personal financial improvement programs for the benefit of military members.

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Dedication

This work is dedicated to the brave and honorable men and women of the United States Armed Forces.

Chapter 1 - Personal Financial Status of Military Members

Introduction

The personal financial status of military members is an important area of study because of its relationship to the military's mission readiness and therefore, national security. The need to develop and maintain acceptable levels of financial well-being among military members has been acknowledged repeatedly at the highest levels of military leadership, including the Chairman of the Joint Chiefs of Staff and the Secretary of Defense (Dempsey & Battaglia, 2012; Department of Defense, 2003). Even the President of the United States released a document calling the care of military families a "top national security priority" and cited personal financial management concerns as the second largest source of stress in military families (Executive Office of the President, 2011, p. 1). Another example of the sustained focus is that a central message of the Better Business Bureaus Military Line®, an outreach program serving military families through financial education and advocacy, states that "financial readiness equals military readiness" (Better Business Bureau, 2012, p. 1). This sentiment was echoed more recently by the Commanding General of the U. S. Army Alaska in an openly published commentary outlining actions he expected leaders of his subordinate units to take related to the personal financial status of those under their supervision when he wrote, "We must all recognize that financial readiness is mission readiness. We have a responsibility to be as prepared as possible to defend this nation. That applies down through every echelons of command to the individual Soldier" (Garrett, 2013, p. 1).

The evolution of personal financial improvement programs within the military can be traced back at least as far as the mid-1960s (Fannie Mae Foundation, Institute for Socio-

Financial Studies, 2000). Despite decades of these remedial efforts, personal financial problems among military members have persisted at levels serious enough to keep the attention of military leadership up through the Commander-in-Chief. Because of the apparent challenges in finding a remedy, ways to improve effectiveness of financial improvement programs targeting military members deserve study. The chapters which follow will examine how military members deal with financial stress and how meaningful and lasting behavioral change might be achieved through application of relevant theory to program design.

Outline of Chapters

The first essay, Financial Challenges among Military Members Viewed Through the Lens of Stress and Coping Theory, examines financial stress as a person-environment relationship in the context of stress and coping theory. Stress and coping theory offers an explanation of how an individual facing a stressful situation evaluates and responds to it (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). The focus is on the concept of locus of control and how it can influence financial behavior in the face of financial stress. It uses data collected from a sample of U.S. Army soldiers to examine the relationship of locus of control with perceived financial stress and likelihood of exhibiting positive financial behaviors. More specifically, it is hypothesized that an internal locus of control, which means having a sense that one can affect one's own situation, is associated with lower financial stress and a higher likelihood of engaging in positive financial behaviors. Further, it is hypothesized that individuals who engage in positive financial behaviors also report lower levels of financial stress. If these hypotheses are supported, the implications for practitioners and developers of personal financial improvement programs for military audiences indicate that success of their efforts could be enhanced by a strong emphasis on promotion of a sense of control over one's financial situation in the course of instruction on appropriate financial behaviors.

The second essay, Factors Influential in Determining Personal Financial Behaviors of Military Members, examines factors that would be influential on the behaviors of maintenance of an adequate emergency fund and maintenance of positive cash flow. Relying on the theory of planned behavior for guidance, the study assesses the relationship of the behavioral antecedents of attitudes, subjective norms, and perceived behavioral control with negative financial outcomes (Ajzen, 1991). The study's objective was to identify the influential behavioral antecedents from a sample of respondents who were on active military duty at the time data were collected. A clearer understanding of these behavioral antecedents will assist in the selection of the foci of military personal financial improvement programs by identifying those most likely to have the greatest effect on avoidance of negative financial events. Financial improvement programs with appropriate placement of emphasis would lead to a more efficient and effective use of resources available for their execution.

The third essay, The Effects of Subjective and Objective Financial Knowledge and Financial Confidence on Financial Behaviors, examines determinants of certain positive and negative financial behaviors. The primary focus is on self-assessed knowledge, self-assessed proficiency in handling day-to-day financial matters, and objectively assessed financial knowledge. The positive financial behaviors include keeping expenditures less than household income over time, referred to as maintaining positive cash flow, and establishing an adequate cash reserve for unexpected, necessary expenses, referred to as maintaining an emergency fund. The negative financial behaviors studied include the use of high-cost, non-bank lenders, specifically, auto title loan and payday loan outlets, pawn shops, and rent-to-own stores, collectively referred to as alternative financial services (AFS). Use of AFS was chosen to represent the negative financial behaviors because these businesses are known for targeting military members as customers (Harris, 2011). The differing effects of self-assessed versus objective measurement of financial capability on financial behavior will be of interest to financial counselors, especially those with a military clientele.

Summary

This set of essays examines what military members need in order to deal with financial difficulty successfully. Collectively, the essays illuminate ways to structure personal financial improvement programs intended for military audiences to meet those needs. Military leadership from the President downward have been on record repeatedly over the years recognizing widespread financial difficulty among military members and supporting programs created to improve the problem. In view of the scale at which financial problems among the military population continue to exist, new approaches need to be researched and tried until a solution is found. These studies leverage several well-known theories to generate ideas for narrowing the focus of existing programs to place emphasis on strong causal factors of financial difficulty, and then suggest a means for selecting the most effective strategies to facilitate behavioral change.

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Chapter 2 - Financial Challenges among Military Members Viewed Through the Lens of Stress and Coping Theory

Introduction

Demands on U.S. military forces have been exceedingly high since 1988 (Kavanagh, 2013). This period of outsized demands overlaps a time when the majority of the general population reports living with moderate or higher levels of stress, with financial concerns being among the most significant contributors (American Psychological Association, 2010). The additive nature of stress associated with a military lifestyle is implicit in the rates of extreme stress-induced behaviors, such as suicide and domestic violence, which exceed those in the general population (Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011; Rudd, 2013; Slep, Foran, Heyman, & Snarr, 2010). In addition to the stressors faced by military members related to preparation for, engagement in, and support of combat operations that are distinct from those encountered by most civilians, personal financial challenges are also significant sources of stress within the military population. In a recent survey of over 5,000 military family respondents, Greentree, Bradbard, Dagher, Levingston, Lore, and Taylor (2013) found that 65% experienced stress related to their financial condition. Because the survey targeted only military respondents, an exact comparison to the civilian population is difficult. The Pew Research Center (2013) conducted a survey with a somewhat similar focus, but of a more heterogeneous population, and found that 43% of Americans faced one or more of the following stressful financial events within the past year: difficulty obtaining or paying for medical care, problems paying rent or mortgage, or job loss. It also found that 62% of respondents considered their financial condition poor or fair.

In laying a foundation for a study of human behavior and behavioral change, it is helpful to consider how behavioral responses to stimuli are chosen. Using stress and coping theory for guidance, initial recognition and assessment of a stressful situation and the selection of a coping strategy are discussed. Stress and coping theory covers an individual's recognition and assessment of a stressful situation and the determinants of choice of strategy between one which addresses the source of the problem versus one which alleviates the emotional discomfort of the stressful encounter (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986). Of concern for the present study is how the theory applies to individuals responding to the stimulus of an encounter with a personal financial challenge.

This study examined the nature of influence the choice of problem-focused coping strategies and locus of control had on financial stress. The relationship between selection of problem-focused coping strategies and locus of control in the personal finance context was also of interest because of the implications on how personal financial improvement programs should be designed. More specifically, an examination of this relationship reveals the importance of creating a sense of choice and control over one's financial status as a supplement to simply providing information. The choice of emotion-focused coping strategies was not examined in this study. Whether emotion-focused strategies result in reduced financial stress is not relevant to the question of whether financial stress is reduced by problem-focused strategies. By definition, an emotion-focused strategy would, at best, mask the discomfort of stress, but would not lead to improving the financial problem that created the stress in the first place (Lazarus & Folkman, 1984). Locus of control has been found to mediate the relationship between financial knowledge and financial resources with responsible financial behavior, in that all else being held equal, those with an internal locus of control are more likely to save, budget, and control spending (Perry & Morris, 2005). In contrast, having a more external locus of control has been found to be related to the unsuccessful use of credit (Davies & Lea, 1995; Tokunaga, 1993). In a variety of contexts, having a more internal locus of control is associated with the use of problem-focused coping strategies in favor of emotion-focused strategies and lower levels of stress (Gianakos, 2002; Ng, Sorenson, & Eby, 2006; Solomon, Mikulincer, & Benbenishty, 1989; Wang, Bowling, & Eschelman, 2010). Therefore, this study examined the relationship of both locus of control and problem-focused coping strategies on financial stress. An understanding of the additional challenges related to an external locus of control provides direction for financial improvement programs in demonstrating the significance of perception of control over one's finances in addition to having the knowledge of how it should be exercised.

Theoretical Framework and Related Literature

Stress and Coping Theory

Lazarus and Folkman's (1984) theory of stress and coping provided the conceptual framework for this study. A brief explanation of the theory and a definition of some of its key terms—psychological stress, cognitive appraisal, and coping--are included to promote understanding of its present application. For purposes of this study, psychological stress is conceptualized as "a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-bring" (Lazarus & Folkman, 1984, p. 19). According to stress and coping theory, the process of cognitive appraisal is one mediator of transactions between a person, the environment, and the immediate and long-range outcomes of the transactions. The pertinence of this to the present study is found in the framework it provides for evaluating an individual's encounter with the environment that relates to personal financial condition.

Cognitive appraisal is defined as the process through which an individual evaluates the relevancy a particular encounter with the environment has on overall well-being. For instance, consider a military member faced with a situation requiring a potential financial expenditure who is appraising the effects the expenditure might have on personal well-being, both immediately and for the longer-term. According to stress and coping theory, two basic forms of cognitive appraisal are distinguished from one another: primary and secondary (Lazarus, 1993). Primary appraisal is the process by which an individual evaluates whether a person-environment encounter is deemed at all relevant to personal well-being. If relevancy is determined to exist, then the secondary appraisal begins, and the nature of the encounter is evaluated. Secondary appraisal is where the individual's consideration turns toward coping options. Extending the earlier example, the military member, having determined significant effect on well-being to exist, would begin to consider how to cope. The theory calls this shift secondary appraisal, where an individual evaluates what can be done to prevent harm.

Coping is viewed as a process based on the context of a particular situation that is cognitively appraised as significant. Coping strategies alone are neither good nor bad, but depend on the context of each situation. Stress theorists have identified two broad categories of coping strategies that individuals use when the cognitive appraisal results in a perception that the demands from a stressful encounter may tax or exceed available resources: problem-focused and emotion-focused (Folkman & Lazarus, 1988). Problem-focused coping involves the use of strategies that an individual believes will resolve a situation that is perceived as stressful. For example, an individual concerned about the negative effects of consumer debt on personal well-being might establish a budget and create a debt management plan. In contrast, emotion-focused coping concentrates on efforts to control or alleviate negative emotions associated with a perceived stressor. A primary determinant of the choice of strategy is whether an individual perceives having the power to change the situation. If so, then the tendency is to opt for a problem-focused coping strategy (Padden, Connors, & Agazio, 2010).

Financial Stress

The use of Lazarus and Folkman's (1984) framework has not been commonly applied to financial stress studies. One exception is a study by McPherson (2012) that claimed to be the first to examine effectiveness of various coping styles on financial stress among college students. Among the findings were that the perception of control is significantly related to the choice of problem-focused strategies in instances of financial stress. Respondents reporting greater reliance on emotion-focused strategies reported more depressive and anxiety symptoms than those with a lower reliance on such strategies. Interestingly, these relationships did not hold for life stress, indicating possible qualitative differences between financial and life stress. This finding supports the practice of studying financial stress separately from life stress in a more general context.

Other studies of financial stress have commonly used subjective perceptions of stress instead of objective measures (Davis & Mantler, 2004; Kim & Garman, 2004; O'Neill. Sorhaindo, Xiao, & Garman, 2005; Sinclair, Sears, Zajack, & Probst, 2010; Smith & Weatherburn, 2013). Studies that have relied on objective measures of financial stress typically do so by measurements of negative financial events, such as taking qualifying hardship distributions from retirement plans (FINRA Investor Education Foundation, 2013; Marks, 2007).

Because this study is concerned with psychological stress, it draws primarily from literature concerned more with subjective perceptions than objective financial condition.

Locus of Control

The perception of being in a position to change a situation leading to a choice of a problem-focused strategy versus a perception of having scant ability to change a situation leading to an emotion-focused strategy parallels the concept of locus of control. Locus of control refers to the degree to which an individual attributes personal circumstances to one's own behavior versus the influence of external forces (Rotter, 1990). An illustration in the personal finance context can be found in the case of an individual struggling to make payments on consumer debt. A person with an internal locus of control might attribute the circumstances to overspending and attempt to resolve them by creating a budget. A person with an external locus of control might attribute the situation to rising prices, being underpaid, or a difficult economy, and seek relief from the resulting stress by commiserating with a peer. It follows that the one who perceives having less control is also less likely to attempt to exert control through changing behavior. A study of individuals who attended a financial management class mandated by the terms of their Chapter 13 bankruptcy filings found evidence that the training resulted in a lasting shift toward an internal locus of control related to personal financial status and the shift at least partially explained improvement in their financial decision-making and financial condition (Stokes & Polansky, 1998). This finding is important because it reveals the possibility that an intervention, such as a financial management class, could shift an individual's locus of control toward becoming more internal, and therefore instill a greater sense of control over one's own financial circumstances.

Locus of Control as it Relates to Financial Behaviors

In a study of entrepreneurs over a period following a major disaster, those with internal loci of control were found to perceive less stress and greater reliance on problem-focused coping strategies (Anderson, 1977). A more recent study of those of limited financial means facing hardships found that those with more internal loci of control exhibited less stress than those with more external loci of control. The feeling of control over their financial lives and the belief that their choices made a difference helped ease distress and increased the likelihood of selecting problem-focused coping strategies. The choice of problem-focused coping strategies was assessed by respondent reports of having made financial adjustments. Some examples of financial adjustments were use of savings or credit, reducing expenses, and taking on an additional job to increase income (Prawitz, Kalkowski, & Cohary, 2012). Lower socioeconomic status could be a factor in decreased perceptions of personal control (Caplan & Schooler, 2007). This finding is of particular interest in the present study because military rank can be used as a proxy for socioeconomic status (Green, 1970), and among military members, the junior-ranking are at higher risk for encountering financial difficulty (FINRA Investor Education Foundation, 2010). Given that an internal locus of control is related to the selection of problem-focused coping strategies, the logical extension into a personal finance context would be that an individual with an internal locus of control would likely choose to cope with a perceived financial problem by performing behaviors believed to have potential to ameliorate it.

Financial Behaviors

Little has been written on the relationship between financial behaviors and financial stress among the general population. One study of participants of a credit counseling program found that those reporting greater numbers of positive financial behaviors and higher self-evaluation scores of their financial behaviors were associated with lower levels of financial stress. The particular behaviors found to be most influential in reducing financial stress were reducing debt and following a budget or spending plan (Xiao, Sorhaindo, & Garman, 2006).

Other Known Correlates of Financial Stress

Several demographic characteristics have been found to be predictors of financial stress. Women tend to exhibit higher levels of financial stress (Kim & Garman, 2003) as do non-White respondents (Grable & Joo, 2006; Logue, 1991; Worthington, 2006). Not surprisingly, respondents with lower levels of income tended to report higher financial stress (Kim & Garman, 2003). Credit card debt was also shown to have a positive association with financial stress (Grable & Joo, 2006).

Other literature on financial stress revealed that physical health is an important predictor. Good health is associated with increased productivity and higher earnings, fewer outlays for medical expenses, and longer lives in which to enjoy the compounding of investment returns and Social Security benefits (O’Neill et al., 2005). Because the military medical system provides health care for active duty members free of charge and robust health insurance coverage is provided for their immediate family members free of change, out-of-pocket medical costs are typically not a significant issue for active duty military members (Jansen & Blakely, 2013).

Hypotheses

Based on the theoretical framework and related literature, the following hypotheses were developed:

H_1: An internal locus of control is associated with lower levels of financial stress.

H_2: Positive financial behaviors are associated with lower levels of financial stress.

Additional associations with the outcome of financial stress are expected based on the relevant financial stress literature. These associations are shown in Table 2.1. Namely, males, Whites, higher-income respondents, and those with lower credit card debt levels are expected to report lower levels of financial stress.

Table 2.1

Other Expected Relationships with Financial Stress

Variable	Expected Relationship with Financial Stress
Male (female)	Lower
White (non-White)	Lower
Higher income	Lower
Lower credit card debt	Lower

Methods

Data

This study used data collected from a survey of soldiers at a large Midwestern military installation in 2011. The survey instrument was a questionnaire administered to 932 volunteer respondents and yielded 688 response sets with sufficient data for this particular analysis. Data collection was conducted by researchers from a nearby university with the sanction of the Institutional Review Board and with permission from the appropriate command elements within the military structure. All potential respondents were notified that their participation was voluntary, and there were would be no repercussions for declining to participate. No incentives for participation were offered. A copy of the questionnaire is provided in Appendix A.

Measures

Dependent variable. Subjective financial stress was the dependent variable in a regression analysis. Financial stress was measured by a four-item scale that asked respondents to indicate their frequency of experiencing anxiety, sleeplessness, worry, and difficulty in concentration attributed to financial concerns on a five-point scale ranging from "Never" to "Always." Individual items were summed to calculate the stress score. Scores could range from 4 to 20, with higher scores indicating a higher level of stress. This treatment is consistent with previous use of this scale (Bell, 2013). The Cronbach's alpha for this scale with this sample is .85, indicating satisfactory internal reliability.

Independent Variables

Locus of control. For the present study, mastery was used as a proxy for locus of control. The survey instrument did not contain a direct locus of control measurement, though data were available for the closely related concept of mastery that was measured by the Pearlin Mastery Scale (Pearlin & Schooler, 1978). The scale consisted of seven items containing statements related to personal perspective on ability to influence one's general situation. Respondents used a five-point scale ranging from "Almost never" to "Almost always" to indicate their frequency of agreement with the statements. Agreement with two of the seven items supported an internal locus of control, and therefore those items were reverse coded. The response scores were summed as described by the scale's authors. The range of possible scores was from 7 to 35, with higher scores representing a more external locus of control and lower scores a more internal locus of control. The Cronbach's alpha for this scale is .79, indicating satisfactory internal reliability.

Mastery is one of several closely related concepts, among them locus of control, that come under the broader construct of personal control (Pearlin & Pioli, 2003). Mastery is defined as “the extent to which one regards one’s life-chances as being under one’s own control in contrast to being fatalistically ruled” (Pearlin & Schooler, 1978, p. 5). The description of locus of control is very similar: “…internal versus external locus of control refers to the degree to which persons expect that a reinforcement or an outcome of their behavior is contingent on their own behavior or characteristics versus the degree to which persons expect that the reinforcement or outcome is a function of chance, luck, or fate, is under the control of powerful others, or is simply unpredictable” (Rotter, 1990, p. 489). A prominent researcher in the field of psychology, E. Jerry Phares, who had reviewed over 600 locus of control studies, referred to the research area of mastery as “the best single indicator of the validity of [Rotter’s internal-external locus of control scale]” (Wright, Holman, Steele, & Silverstein, 1980, p. 1005).

Financial behaviors. In the personal finance context of this study, items related to positive financial behaviors represent the theoretical construct of problem-focused coping. Specifically, the items used asked respondents to report on a five-point scale ranging from “Almost never” to “Almost always” how often they had engaged in the behaviors of budgeting, writing financial goals, paying credit card bills in full, reaching maximum limits on credit cards, spending more than earned, and encountering difficulty in paying bills as a result of insufficient income. This scale was an abbreviated adaptation of a previously published financial behavior scale (Grable & Joo, 2001). Some items from the original scale were omitted because of space limitations on the survey instrument. Also, the number of response alternatives was increased to five from four to maintain a format consistent with the section of the survey instrument in which it was presented. The items that asked about reaching credit card limits, spending more than earned, and difficulty paying bills related to insufficient income were reverse coded because they represented negative financial behaviors. The variables were used to create a summated scale with a possible range of 6 to 30, with higher scores indicating greater engagement in positive financial behaviors, therefore greater usage of problem-focused coping strategies. The Cronbach's alpha of the original scale was reported as .74 by its authors (Grable & Joo, 2001). As adapted for this study, the Cronbach's alpha was .68, indicating marginally acceptable internal reliability. Typically, researchers would want to see an alpha in a range of approximately .70 to .80 to establish the measure's internal reliability. In support of accepting this adapted version of the scale as reliable, the inter-item correlations ranged from a low of .09 to a high of .52. Inter-item correlations in excess of .3 are considered desirable. Furthermore, when reviewing the effect on the Cronbach's alpha of removing each item one at a time, in every case the scale's alpha less one of the items would have been less that its alpha with all items included, indicating that each item contributes to a stronger internal reliability (Field, 2009).

Other known correlates of financial stress. Gender was reported by respondents on the questionnaire and coded as a binary variable. Respondents were asked to indicate which race/ethnicity term best described them from among choices of White (non-Hispanic), Hispanic, African-American, and Other, though data were recoded as White and non-White in a binary variable. Military pay grade was used as a proxy for income. The questionnaire asked respondents to select from alternatives of E-1 or E-2; E-3 or E-4; E-5 or E-6; E-7 to O-2; and O-3 and up. Pay grades beginning with "E" represented enlisted ranks 1 through 9, and pay grades beginning with "O" represent officer ranks 1 through 10. In a legal sense, the lowest ranking officer, a member in the grade of O-1, is considered to be senior to the highest ranking enlisted member, in the grade of E-9, though the level of responsibility and compensation of some senior enlisted members can be higher than that of junior officers. For this reason, it made sense for the survey to use a pay grade range extending from senior enlisted to junior officer pay grades. The top pay grade range of O-3 and up was structured as such because it was anticipated that the sample would include few, if any, officers above the grade of O-3. The base pay ranges represented by the pay grades are displayed in Table 2.2. Basic pay within a pay grade is increased with years of service until the maximum level for that grade is reached (Defense Accounting and Finance Service, 2011). The item representing credit card debt was one in which respondents chose from alternatives of $0; $1 to $1,000; $1,001 to $2,500; $2,501 to $5000; and $5,001 or more. Responses to the question, "How much credit card debt do you have?" were assigned values of 1 through 5, respectively, with higher scores representing higher debt.

Table 2.2

2011 Monthly Base Compensation Corresponding to Pay Grade Ranges

Pay Grade	Range of Monthly Compensation
E-1 to E-2	$1.467 – $1,645
E-3 to E-4	$1,730 – $2,326
E-5 to E-6	$2,090 – $3,533
E-7 to O-2	$2,637 – $5,140
O-3	$3,712 – $6,445

Note: Based on Military Pay Tables. Defense Accounting and Finance Service. (2011). *Military pay table – 2011*. Retrieved from http://www.dfas.mil/militarymembers/payentitlements/militarypaytables.html

Analysis

An ordinary least squares regression of positive financial behavior, locus of control, gender, race/ethnicity, income, and credit card debt on financial stress comprised the primary statistical procedure for evaluating the statistically significant correlates with financial stress. Although not truly continuous, the financial stress variable was treated as such which is consistent with its use in a previous study and the original scale from which it was adapted (Archuleta, Dale, & Spann, 2013; Bell, 2013). All statistical computations were run using PASW Statistics 18.

Results

Descriptive Statistics

The mean score on the locus of control scale was 12.30 (*SD* = 4.71), with the lower of bound of the scale at 7, indicating a more internal locus of control, and the upper bound at 35, indicating a more external locus of control. The mean score on the financial behavior scale was 15.7 (*SD* = 3.10; range = 6 to 25), with 6 as the lower end of the scale, which indicates a lower level of engagement in positive financial behaviors, and, 30 as the upper end of the scale representing higher engagement in positive financial behaviors. Of the response sets analyzed, 97% (*n* = 668) were from males. The average age of respondents was 26 (*SD* = 5.77; range = 19 to 46). About two-thirds indicated a race/ethnicity of White (*n* = 453). Approximately 56% (*n* = 383) were in the pay grades of E-3 or E-4. The median response for credit card debt was between $1 and $1,000, though the mean was indicated to be within the range of $1,001 to $2,500. The mean score for the financial stress scale was 7.8 (*SD* = 3.19; range = 4 to 20). A complete set of descriptive statistics is provided in Table 2.3.

Table 2.3

Descriptive Statistics of Sample

Variable	Frequency	*M* (*SD*)	*Range*
Locus of control		12.30 (4.71)	7 to 35
Financial behavior		15.65 (3.10)	6 to 25
Gender	97% (*n* = 668)		
Pay grade	0.04		
E-1 or E-2	10% (*n* = 72)		
E-3 or E-4	56% (*n* = 383)		
E-5 to E-6	26% (*n* = 179)		
E-7 to O-2	6% (*n* = 44)		
O-3 and above	2% (*n* = 10)		
Race/ethnicity			
White	66% (*n* = 453)		
Non-White	34% (*n* = 235)		
Credit card debt			
$0	40% (*n* = 275)		
$1 - $1,000	23% (*n* = 161)		
$1,001 - $2,500	14% (*n* = 94)		
$2,501 - $5,000	11% (*n* = 72)		
$5,001 or more	13% (*n* = 86)		

Regression Results

An ordinary least squares regression of demographic factors, credit card debt, locus of control, and financial behavior scale scores on financial stress level was conducted. Both of the hypotheses, that a more internal locus of control and prevalence of positive financial behaviors are associated with lower levels of financial stress, were supported. The results indicated that the model predicted 35% of the variation in financial stress scores (F = 59.95, $p < .001$). No problems with collinearity were indicated in variance proportions among the collinearity diagnostics of variance inflation factors.

Although the valences of the coefficients for gender, race/ethnicity, income, and credit card debt were as expected (Table 2.1), only credit card debt showed statistical significance (b = 0.09, $p < .05$). Locus of control was found to have a statistically significant relationship with financial stress, with a beta of 0.17. This finding is interpreted to mean that a one-point move toward an external locus of control on the measurement scale would result in a movement of 0.17 units towards a higher level of financial stress. Financial behavior was found to have a significant negative relationship with financial stress. Its beta of -0.28 indicates that a one-point move toward more positive financial behaviors on the scale would result in a 0.28 unit decrease in financial stress. Complete regression results are shown in Table 2.4.

Table 2.4

Summary of Regression Analysis of Variables Predicting Financial Stress

Variable	B	SE B	β
Locus of control	0.17	0.02	0.25***
Financial behavior	-0.28	0.03	-0.41***
Gender	-0.80	0.60	-0.04
Pay grade	0.04	0.13	0.01
Race/ethnicity	-0.04	0.10	-0.14
Credit card debt	0.20	0.08	0.09*
R^2		0.35	
F		59.95***	

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

Discussion

The current study sought to examine the relationship of locus of control and engagement in positive financial behaviors with financial stress among members of the military while controlling for other potentially influential factors. Stress and coping theory predicts that an individual who perceives having the ability to cope with a stressor will opt for problem-focused coping strategies to reduce stress (Padden et al., 2011). Of note, the measure used for locus of control was a general one, while the measure used for the dependent variable was focused specifically on financial stress as opposed to a more general form. Therefore, the finding indicated that military members with a generally internal locus of control tend to report lower levels of financial stress. Positive financial behaviors, when performed in response to the perception of a financial stressor, would be viewed as problem-focused coping strategies in the context of stress and coping theory. Whether the members of this sample who reported performing positive financial behaviors did so in response to a recent or ongoing financial stressor or from a desire to avoid financial stress, the study affirmed that performance of positive financial behaviors was associated with lower levels of financial stress. This study is one of very few to date to apply stress and coping theory to financial stress in particular, and the first to test a stress and coping theory-based model combining locus of control and financial behaviors as determinants of financial stress.

Although gender was not found to be significantly related to financial stress as it has been in some previous studies, this sample had a very small proportion of female respondents, and therefore it was not optimum for testing effects of gender. While there was a fairly diverse representation of race/ethnicity in the sample, no significant relationship with financial stress was found in contrast to some previous studies. This finding could have been related to the current sample being more homogenous than would be expected in the general population in respects other than race/ethnicity. To the extent differences in other social research attributable to race/ethnicity could be explained by accompanying cultural and socioeconomic variations, one could speculate that those differences in the present sample may have been dampened by a shared set of recent, perhaps intense, experiences as might be shared by members of the same military combat unit. Pay grade, used as a proxy for income, did not yield statistically significant findings as had some previous studies measuring income more directly. This finding could have been a result of the degree of differences in income among respondents being masked by grouping pay grades into broad bands as necessitated by the design of the questionnaire response sheet. The homogeneity of the sample in this area, though not extreme, may also have masked differences. As expected, a higher level of credit card debt was found to be associated with increased financial stress. In this sample, there was a dispersion of responses on the item measuring credit card debt favorable for statistical analyses.

Implications

Overall, the findings suggested that certain factors are more influential than others with regard to financial stress. The factors shown to influence financial stress should therefore become particular areas of focus in the design of personal financial improvement efforts for military audiences. The present study, along with others (McPherson, 2012; Prawitz, Kalkowski, & Cohary, 2012; Stokes & Polansky, 1998), would support the promotion of a sense of control with regard to one's finances as a possibly effective measure to reduce financial stress.

Likewise, performance of certain financial behaviors was also shown to be associated with less financial stress. Specifically, budgeting, writing out financial goals, avoidance of revolving balances on credit cards, and holding expenditures to less than income were the constituents of the financial behavior scale in the present study. This suggestion is consistent with this study's finding that the spot measure of credit card debt was positively related to financial stress. It is also consistent with a previous study's findings that reducing debt and following a budget are particularly effective at reducing financial stress (Xiao et al., 2006).

These findings suggest particular areas of emphasis to senior military commanders, others with responsibility for personnel and wellness policy and programs, those who are involved in military personal financial improvement program design, and those directly participating in providing financial counseling and education to military members. Current program content and delivery methods should be reviewed and revised as necessary to narrow the focus to specific areas of personal finance that have been shown to have the most effect. Efforts to reduce financial stress would be complementary to those aimed at reducing instances of suicide among military members, as financial stress has been found a contributing factor in such cases (Mahon, Tobin, Cusack, Kelleher, & Malone, 2005).

Limitations

Among the limitations of this study was that the sample was less than representative of the United States military. It is reasonable to allow for the possibility that differences among various types of military units could have led to different outcomes. Members of different occupational specialties could have differences in their aptitudes, training, experiences, and organizational subcultures which could have influenced results. Respondents were all members of a single Army unit, eliminating the ability to test for differences among various types of Army units or differences that could exist among service branches. Furthermore, the sample contained a higher proportion of junior-ranking males relative to the make-up of the target population. Although the study's findings were mostly in-line with the expectations set by theoretical guidance and previous research, additional research would be required to generate findings that could be generalized with confidence.

Future Research

Future studies involving samples of military members from other service branches or samples that are more representative of the general military population are needed. In addition, studies involving civilian samples for comparison would be helpful in identifying which findings are unique to the military. The results of such comparisons could inform appropriately selective application of the more abundant existing personal finance research of civilian populations.

The findings of the present study suggest several personal financial improvement program design considerations. As current programs are modified or new programs are developed incorporating research findings, experimental research is needed to confirm whether program changes were indeed effective at producing desired results.

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Chapter 3 - Factors Influential in Determining Personal Financial Behaviors of Military Members

Introduction

Personal financial difficulties among military members have long been recognized as pervasive and significant detractors from mission readiness (United States Government Accountability Office, 2005). Among the most serious detriments to mission readiness is the failure to retain trained military members. Retention problems greatly increase training and recruitment costs borne by the U.S. Government (Luther, Leech, & Garman, 1998). In addition, financial stress has continually been recognized as a contributing factor to instances of suicide and domestic violence at rates higher than those of the non-military population (Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011; Slep, Foran, Heyman, & Snarr, 2010).

In response, there have been a number of major initiatives launched by the Department of Defense to assist military members and their families with personal financial issues over a period spanning more than a decade. A report by the Fannie Mae Foundation, Institute for Socio-Financial Studies (2000) cited an Army program launched in the mid-1960s as one of the earliest military personal financial improvement programs. Other examples include the Navy Personal Financial Management Program (Department of Defense, 2000), the Army's Well-Being Strategic Plan (Keane, 2001), and the Department of Defense Financial Readiness Campaign (Department of Defense, 2003). Despite this, the problems persist. One possible reason is the large amount of information disseminated into various channels of communication having the effect of overwhelming the intended audience (Plantier & Durband, 2007). With a more focused approach, decision makers stand to improve the effectiveness and efficiency of their efforts to address the widespread personal financial difficulties plaguing a large number of military members. By delivering better tailored preventive programs and interventions targeting critical points on the path to development of behavioral intent, the military's personal financial improvement programs could make better use of the limited resources available toward improving financial well-being of military members. With an improvement in the personal financial state of military members, it stands to reason that the issues associated with widespread personal financial problems would move toward resolution. Among the expected benefits would be cost savings from retention of members who have received significant investments in their training, as well as a lower rate of duty restrictions imposed because of serious financial problems. To the extent that financial behaviors are improved, one could expect a reduced toll from suicide and domestic violence and other fallout known to have financial difficulty as a common contributing factor. This study's intent is to help identify key points of focus for financial improvement programs as an enhancement to earlier and current programs whose value to individuals may be diluted by the sheer breadth of their approaches.

The particular behaviors of interest for this study were those related to the establishment and maintenance of an adequate emergency fund and maintenance of positive cash flow. These two behaviors are widely considered to be fundamental to establishing and maintaining satisfactory financial condition (Godwin & Koonce, 1992; Lusardi, 2011; Xiao, Sorhaindo, & Garman, 2006).

Theoretical Framework and Related Literature

Overview of the Theory of Planned Behavior

The theory of planned behavior (TPB) guided the evaluation of factors that may contribute to problem financial behaviors related to the maintenance of an emergency fund and spending in excess of income. The theory states background factors influence beliefs, which influence attitudes and perceived behavioral control, that influence intent, and ultimately determine behavior (Ajzen, 1991). The various components of the theory, their relationships to each other, and their roles in predicting behavior are illustrated in Figure 3.1. In order to use the framework to evaluate behaviors after-the-fact, it is helpful to start with the behavior and work backwards through the framework, evaluating each set of influential factors in-turn.

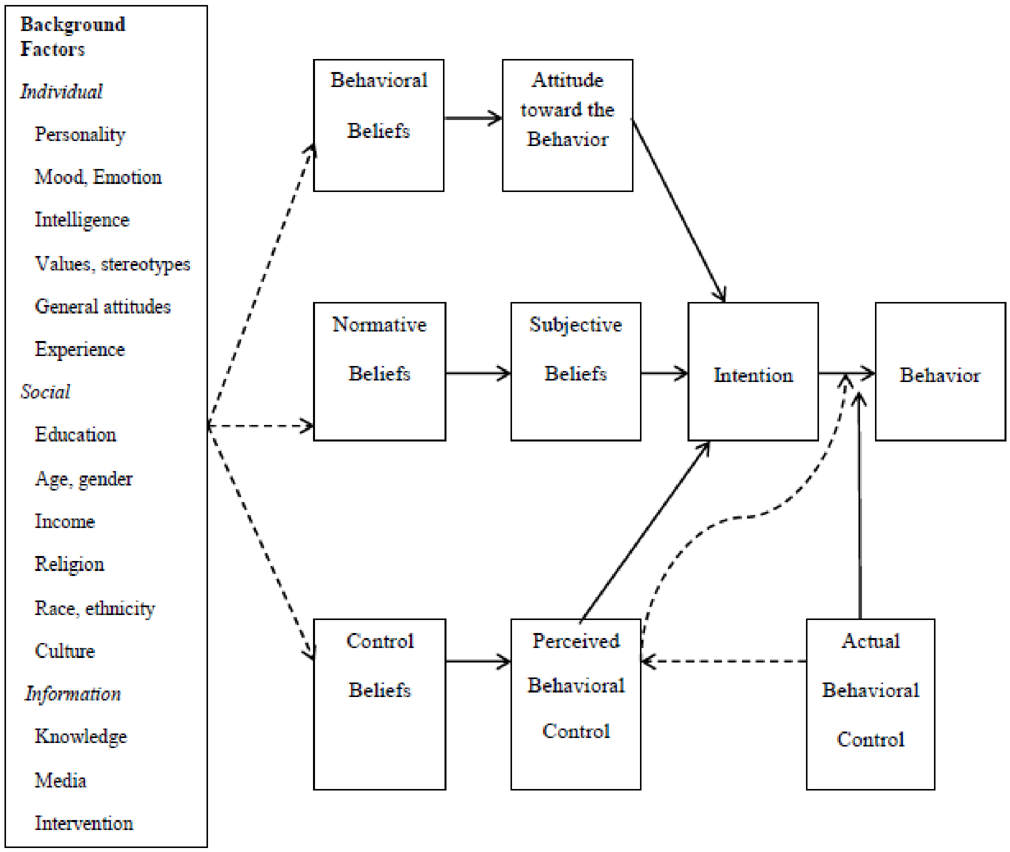

Figure 3.1. The Theory of Planned Behavior. Adapted from Ajzen, I, & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracin, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (p. 194). New York, NY: Psychology Press.

The factor with the most direct influence on the probability that an individual will perform a particular behavior is the strength of intention. Naturally, actual behavioral control, an individual's ability to perform the behavior, determines whether performance is possible. An individual's attitude toward a behavior refers to whether the individual views the perceived outcome of the behavior as favorable or unfavorable. Subjective beliefs incorporate the individual's perceptions of how others influential to the individual (e.g., parents, teachers, friends, spouses) would feel about whether the individual should perform the behavior. Perceived behavioral control refers to the individual's perception of the relative ease or difficulty of performing the behavior (Xiao & Wu, 2008). These three items—attitude toward the behavior, subjective beliefs, and perceived behavioral control—have direct influence on the individual's intention to perform the behavior. The component which directly influences attitude towards the behavior is behavioral beliefs, or the individual's perception of the probability that a particular outcome or outcomes would result from performance of the behavior. Normative beliefs are the individual's perceptions of whether influential others have positive or negative attitudes towards the behavior. Control beliefs are the individual's perception of the presence or absence of other factors that would enable or hinder performance of the behavior. Finally, all these factors that lead to performance of the behavior are shaped by a number of background factors relevant to the individual. Background factors are classified in three broad categories. One is characteristics unique to the individual, such as mood, personality, and past experiences. Another is socially relevant characteristics, such as age, gender, and religion. The final category is informational factors such as the individual's knowledge, the availability of information to the individual perceived as relevant to the decision of whether to perform the behavior (Ajzen & Fishbein, 2005).

The theory's role in the present study was to provide focus for the data gathering efforts and analyses. Measurements of the items represented in the blocks of the diagram in Figure 3.1 provide a detailed view of which extant factors in the sample would tend to promote or inhibit positive or negative behaviors related to the outcomes of creation and maintenance of an adequate emergency fund and maintenance of positive cash flow. The analysis of the data suggested where efforts to lessen risk of financial difficulty and promote financial well-being were already sufficient and where additional emphasis was needed.

Previous Applications of the Theory of Planned Behavior in Personal Finance Studies

Several studies have relied upon TPB for guidance in the analysis of personal financial behaviors in much the same way as the current study did. Measurements of attitude, subjective norms, and perceived behavioral control were used in each of them as predictors of behavior.

In one such study, Xiao and Wu (2008) investigated factors related to the completion of a debt management plan. Using a questionnaire, they measured key behavioral antecedents identified by TPB—attitude toward a behavior, subjective norms, and perceived behavioral control. All the questionnaire items used Likert-type scales allowing respondents to indicate the degree and valence of their views of statements related to attitudes, subjective norms, and perceptions of behavioral control. These data were used in concert with data on plan completion status provided by the agency administering the debt management plan. The findings showed support for attitude and perceived behavioral control being positively related to the behavior of completing the debt management plan; however, the association of plan completion with subjective norms was not statistically significant.

In another study, Shim, Xiao, Barber and Lyons (2009) used a sample of college students to measure attitudes, subjective norms, and perceived behavioral control. The measurements were similar to those used by Xiao and Wu (2008) in that data were gathered using a questionnaire with Likert-type scales. The findings supported TPB and showed that attitude towards a behavior, subjective belief, and perceived behavioral control were associated with positive financial behaviors, such as engaging in economizing coping patterns and avoidance of debt when dealing with financial constraints.

In yet another study relying on TPB, Rutherford and DeVaney (2009) examined factors related to the convenience use of credit cards. They used secondary data from the Survey of Consumer Finances, a triennial survey sponsored by the Federal Reserve Board. They used several items each to construct measures of the key behavioral antecedents, attitude, subjective norms, and perceived behavioral control. Most, but not all, of the items chosen from the survey supported the role of the antecedents according to TPB in predicting convenience use of credit cards.

Study Design

For the purposes of this study, an emergency fund was defined as savings in the form of cash or cash equivalents with no intended purpose other than to be available for dealing with unplanned, but necessary expenses. There is no universally accepted standard for what constitutes an adequate emergency fund, but a common view is that it should be an amount equal to somewhere between three and six months of living expenses (Huston & Chang, 1997; Garman & Forgue, 2011). The Financial Industry Regulatory Authority (FINRA) conducted a survey of military members as part of the National Financial Capability Study and found that only about half of military households maintain adequate emergency funds (FINRA Investor Education Foundation, 2010). A later study found the number of military households with an emergency fund to be far less than half (Brand, Hogarth, Peranzi, & Vlietstra, 2011.) One reason for the difference could be the overrepresentation of more highly paid officers and underrepresentation of enlisted members in lower pay grades in the sample relative to the population in the FINRA study as acknowledged by its authors (FINRA Investor Education Foundation, 2010).

Positive cash flow was defined as a condition where household income exceeds expenditure over the measured time period. Failure to maintain positive cash flow, or having expenditures in excess of income, is one of the three most common personal financial missteps (Garman & Forgue, 2010). Spending in excess of income can lead to unmanageable amounts of debt, and debt has also been found to be at problem levels among military members (Brand et al., 2011).

Method

Data. The present study used data collected from a survey of 106 soldiers at a major Midwestern Army installation who were asked to participate in a study during the summer of 2012. After eliminating response sets of those who declined to participate fully or who provided insufficient data for analysis, there were between 91 and 93 useable response sets, depending on the model to be analyzed. All respondents were volunteers, and no incentives were offered for participation in the study. The research team was from a nearby university with clearance from the Institutional Review Board and appropriate military command elements. The survey instrument was compiled by the research team using established scales from literature and items constructed with guidance of a Delphi group of career military officers and social research experts. A machine-scorable multiple-item response form was used to record their responses to a 50-item questionnaire, a copy of which is presented in Appendix B. Respondents were informed that their participation was voluntary and anonymous.

Dependent variable. The specific goal of this study was to identify behavioral predictors, especially attitudes toward the behaviors, subjective beliefs, and perceived behavioral control, of financial behaviors related to the maintenance of positive cash flow and an emergency fund. As shown in Table 3.1, 11 items were used to measure financial behaviors. The items are divided into the categories of positive cash flow maintenance and emergency fund maintenance. Under cash flow, a number of the items were adapted from a previously published cash flow management behavior scale (Godwin & Koonce, 1992). For these items, respondents were asked to indicate how often they monitored their income to see if it was in keeping with their expectations using a five-item scale ranging from “Never” to “All the time.” Likewise, they were asked how often they monitored their spending to see if it was within the limits of their income, and in a separate item, how often they assessed whether their future planned spending would be within the bounds of their expected income. Several additional items were adapted from a previously published negative financial events index (O’Neill, Sorhaindo, Xiao, & Garman, 2005). Participants were asked how often in the past 12 months they had reached the maximum limit on a credit card, overdrawn a bank account, and found themselves unable to pay for a minor emergency. Although the last item does not inquire directly about a behavior, it is included because it represents the consequence of not having an adequate emergency fund. Possible responses to each item were “Never,” “Once,” or “More than once,” and were scored as 0, 1, and 2, respectively. Two additional items more directly related to the behavior of maintaining an emergency fund were constructed by the researchers involved gathering the data. One asked respondents to indicate how much money they had set aside for unexpected expenses, with response alternatives of $0; less than $500; $501 to $1,000; $1,001 to $2,000; and $2,001 or more. A similar item asked respondents to estimate how long their current savings would cover their monthly expenses in the absence of any income. Possible responses were, “I have no savings,” “1 to 14 days,” “15 to 30 days,” “More than 1 but less than 3 months,” and “3 months or more.”

Table 3.1

Dependent Variable Recoding for Binary Logistic Regression

Question Number	Dependent Variable	Original Scale	Binary Recoding Scheme
Cash Flow			
46	Monitored income	Never, Rarely, Sometimes, Most of the time, All the time	Most/all of the time = 1 All others = 0
44	Monitored spending	Never, Rarely, Sometimes, Most of the time, All the time	Most/all of the time = 1 All others = 0
50	Assessed future income versus expenses	Never, Rarely, Sometimes, Most of the time, All the time	Most/all of the time = 1 All others = 0
39	Reached credit card limit	Never, Once, More than once	Never = 1 All others = 0
43	Overdrew bank account	Never, Once, More than once	Never = 1 All others = 0
22	Kept abreast of expenses	Strongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree	Strongly agree/agree = 1 All others=0
27	Maintained positive cash flow	Strongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree	Strongly agree/agree = 1 All others=0

Question Number	Dependent Variable	Original Scale	Binary Recoding Scheme
Emergency Fund			
7	Dollar amount of emergency fund	$0; less than $500; $501 to $1,000; $1,001 to $2,000; $2,001 or more	$1,001 or more = 1 All others = 0
8	Time emergency fund would last in absence of income	I have no savings, 1 to 14 days, 15 to 30 days, More than 1 but less than 3 months, 3 months or more	More than 1 month = 1 All others = 0
20	Kept aware of cash on-hand	Strongly disagree, Disagree, Neither agree or disagree, Agree, Strongly agree	Strongly agree/agree = 1 All others=0
40	Were unable to pay for minor emergency	Never, Once, More than once	Never = 1 All others = 0

Independent Variables

Attitudes. Attitude towards a behavior stems from an individual's assessment of the likely consequences of performance, with a positive attitude resulting from a notion that the advantages of performance outweigh the disadvantages (Ajzen & Fishbein, 2005). Having been prepared for a military sample, the questionnaire contained items asking respondents to gage the severity of serious personal financial difficulty relative to a number of other scenarios relevant in the context of the military lifestyle. Like serious personal financial difficulty, the other scenarios presented for comparison would result in negative consequences, including significant distraction of both the military member and the member's superiors; restrictions preventing deployment or performance of the full range of normally assigned duties; or in the extreme, discharge from the military. Specifically, the situations for comparison were being charged with driving under the influence, failure to meet the service's physical fitness standards, being noticeably out of appearance standards, failure to comply with a legal order, sustaining an injury off-duty in a situation where normal safety precautions were not observed, lying to a superior, and letting down a fellow service member in a situation in which it could have been avoided. Participants were asked how each of these seven different negative situations compared to getting into financial trouble serious enough to require action by a superior. Possible responses were that the other situation was considered "Worse," coded as 1, "About the same," coded as 2, or "Not as bad," coded as 3. A summated variable of attitude of the relative importance of avoiding serious financial difficulty was constructed as the sum of the individual item scores. The possible range for this summated variable was from 7 to 21. The higher the score, the more gravity the respondent assigned to encountering serious financial difficulty. This scale had a Cronbach's alpha of .73, indicating satisfactory reliability.

Subjective beliefs. Subjective beliefs, according to the theory of planned behavior, are said to be formed from an aggregation of an individual's perceptions of the views that individual's significant referents have about a behavior (Azjen & Fishbein, 2005). The measure for subjective beliefs was from an item that asked respondents to indicate their level of agreement with the statement, "My leaders place a high priority on soldiers keeping their personal finances in good shape." Responses to this item were given on a five-point scale ranging from "Strongly Disagree," coded as 1, to "Strongly Agree," coded as 5, so that higher scores reflected a stronger subjective belief that behaviors related to maintaining one's finances were desired by this set of significant referents.

Perceived behavioral control. The measurement for perceived behavioral control was adapted from a scale designed to meet the specifications of the theory of planned behavior for evaluating the degree of perceived behavioral control (Xiao & Wu, 2008). It is a two-item scale that asks about the respondent's perceived difficulty of a behavior and the perceived ability of the respondent to perform the behavior. For this study, it was applied twice: once regarding the maintenance of an adequate emergency fund; and once regarding the maintenance of positive cash flow. Although the original scale offered a seven-point range of responses, for this study, it was reduced to a five-point range. This reduction was done in response to a practical constraint of the available machine-scorable response forms allowing for a maximum of five response alternatives per item. The question on difficulty of the behavior offered response options ranging from "Extremely difficult" to "Extremely easy," with values of 1 through 5 assigned, respectively. The item for measuring perceived ability of performing the behavior was scored similarly, though it began as a positively phrased statement that the behavior could be easily performed by the respondent, to which the respondent was to choose among response alternatives ranging from "Extremely false" to "Extremely true," also assigned values of 1 to 5, respectively. The values from each of the two items in a response set were averaged according to the method of the original scale to calculate an overall score for level of perceived behavioral control.

Control variables. As statistical controls, race/ethnicity, education level, marital status, pay grade, and number of financial dependents were included. The race/ethnicity variable was recoded as a binary variable with categories of non-White and White. Possible responses on the question for education level were less than high school, high school/GED, some college/2-year degree, college degree, and graduate degree, and were assigned values of 1 through 5, respectively. The marital status variable was recoded as binary, with categories of either single or married. The question of pay grade had possible responses of E-1 to E-4, E-5 to E-6, E-7 to E-9, O-1 to O-2, and O-3 or higher, coded 1 through 5, respectively. The pay grades are common to each branch of service, though the nomenclature of their corresponding ranks vary. Table 3.2 shows the rates of basic pay in effect at the time data were collected in the spring of 2012. Respondents were asked to consider financial dependents to be those other than themselves and their spouses, if married. A value of 1 represented no financial dependents, a value of 2 for one, 3 for two, 4 for three, and 5 for four or more.

Table 3.2

2012 Monthly Base Compensation Corresponding to Pay Grade Ranges

Pay Grade	Range of Monthly Base Compensation
E-1 to E-4	$1,491– $2,363
E-5 to E-6	$2,123 - $3,590
E-7to E-9	$2,680 – $6,631
O-1 to O-2	$2,637 - $4,510
O-3	$3,771 - $6,548

Note: Based on Military Pay Tables. Defense Accounting and Finance Service. (2012). *Military pay table – 2012*. Retrieved from http://www.dfas.mil/militarymembers/payentitlements/militarypaytables.html

Analysis

As shown in Figure 3.2, the empirical model included measures for attitude toward the behavior, subjective belief, and perceived behavioral control and their influence on financial behavior performance. Eleven separate binary logistic regressions were conducted with each of the 11 dependent variables. This method was chosen because dependent variables were categorical and recoded as dichotomous variables. Because the statistical software used did not provide an option for producing collinearity diagnostics for logistic regressions, ordinary least squares regressions were run using the same predictor and outcome variables for the purpose of checking for indications of collinearity. No such indications were noted from a check of the models' variance inflation factors. Out of the 99 sets of responses returned, there were 93 useable sets of responses for at least a portion of the present analysis.

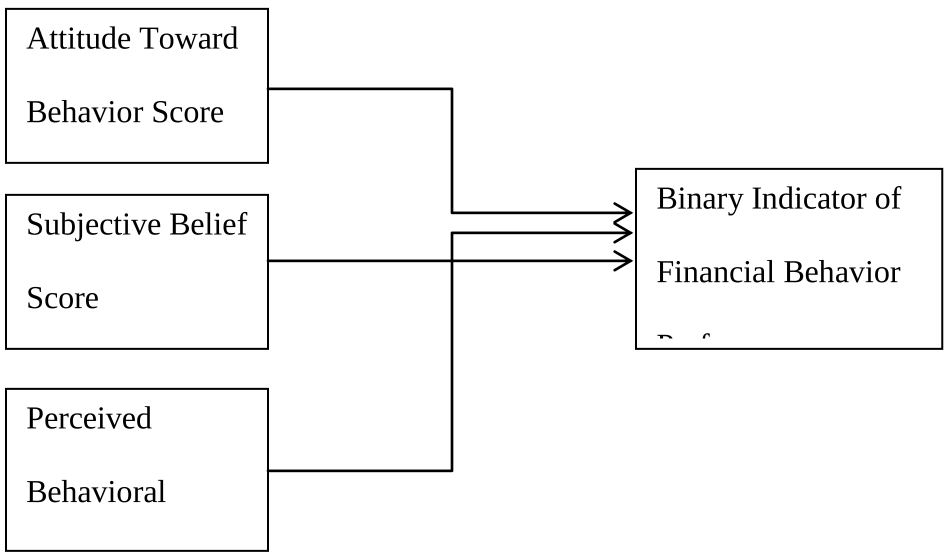

Figure 3.2. Empirical Model of Financial Behavior

Results

Descriptive Statistics

Dependent variables. Of the 11 dependent dichotomous variables, seven were classified as being related to maintaining positive cash flow, and four as being related to maintenance of an adequate emergency fund. Some of the cash flow-related dependent variables had incomplete data, so numbers of complete response sets are reported along with each of the descriptive statistics that follow. Sixty-two percent of respondents (n = 93) reported monitoring their income to see if it was in-line with their expectations, while 68% (*n* = 92) reported monitoring their spending to see if it was within the bounds of their income. Fifty-four percent (*n* = 92) assessed whether their anticipated expenses were projected to be within their income. Fifty-seven percent (*n* = 92) had not reached the maximum limit of a credit card, and 52% (*n* = 91) had not overdrawn a bank account within the preceding 12 months. Eighty-two percent (*n* = 93) kept abreast of their monthly expenses. Just 48% (*n* = 93) stated that their income exceeded their expenses in most months.

For the emergency fund-related dependent variables, all 93 response sets in the analysis contained complete data. Twenty-nine percent of respondents reported having emergency funds of more than $1,000, and 27% reported their emergency funds as being sufficient to meet expenses for more than one month. Eighty-three percent reported being continually aware of how much money they had, while 69% reported not having been short of funds needed to meet a minor emergency over the last 12 months. Descriptive data for the dependent variables are presented in Table 3.3.

Table 3.3

Descriptive Statistics for Cash Flow and Emergency Fund Behaviors

Dependent Variables	*n*	Percentage Reporting Positive Behavior
Monitored income	93	62.4
Monitored spending	92	67.7
Assessed future income versus expenses	92	53.8
Reached credit card limit	92	57.0
Overdrew bank account	91	51.6
Kept abreast of expenses	93	81.7
Maintained positive cash flow	93	48.4

Dependent Variables	*n*	Percentage Reporting Positive Behavior
Dollar amount of emergency fund >$1,000	93	28.7
Emergency fund would last longer than a month	93	26.6
Kept aware of cash on-hand	93	83.0
Not unable to pay for minor emergency	93	69.1

Independent Variables

The mean score on the attitude toward behavior scale with possible scores ranging from 7 to 21 was 13.33 (*SD* = 3.39), which indicated a moderate importance placed on staying out of serious financial trouble relative to the other negative situations selected for comparison. As for subjective beliefs, the mean score was 3.37 (*SD* = 1.02). On the five-point scale, this indicated a perception of a moderate level of importance placed on maintaining a satisfactory financial condition by the respondents' military leaders, one category of significant referents. There were two different perceived behavioral control scores, each measured on a five-point scale. The one related to maintaining an adequate emergency fund had a mean score of 2.45 (*SD* = 0.98), and the one related to maintaining positive cash flow had a mean of 3.33 (*SD* = 0.92). Both indicated that, on average, respondents perceived themselves as having a moderate level behavioral control.

In terms of the control variables, 62% of the respondents were White and 65% were married. The first pay grade range, E-1 to E-4, held 63% of respondents. The largest representation among the ranges of number of financial dependents was "None" with 37%, followed by 22% reporting two financial dependents other than self or spouse, followed by 18% reporting one financial dependent. The descriptive statistics for the variables used in the regression are shown in Table 3.4.

Table 3.4

Descriptive Statistics for Variables in Cash Flow and Emergency Fund Behavior Models

Independent Variables	Mean (*SD*)	Range
Attitude toward behavior	13.33 (3.39)	7 – 21
Subjective belief	3.39 (1.03)	1 – 5
Perceived behavioral control (cash flow)	3.38 (0.90)	1 – 5
Perceived behavioral control (emergency fund)	2.47 (1.00)	1 – 5
Race/Ethnicity	0.62 (0.49)	0 – 1
Marital status	0.65 (0.48)	0 – 1
Education level	2.71 (0.83)	1 – 5
Pay grade	1.62 (1.08)	1 – 5
Financial dependents	2.36 (1.34)	1 – 5

Regression Results

Eleven binary logistic regressions were performed, each using one of the cash flow or emergency fund-related behaviors for the dependent variable as shown in Table 3.1. Attitude, subjective belief, and perceived behavioral control measures served as independent variables. The attitude and subjective belief measures were the same for all 11 regressions, but the perceived behavioral control measure was one of two versions specific to the category of behavior of the dependent variable, either cash flow or emergency fund. Each regression included race/ethnicity, education level, marital status, pay grade, and number of financial dependents as control variables.

The set of regressions revealed only small pockets of statistical significance. Eight of the 11 models were statistically significant, and three were not. The exponentiated beta, or odds ratios, is a key statistic in a binary logistic regression. It represents the magnitude of change in the ratio of the odds of the binary dependent variable being in one state versus the other that would result from a one-unit change in the independent variable. An odds ratio greater than 1 means that the odds of the condition associated with the binary dependent variable will be more likely to exist, while an odds ratio of less than 1 means it will be less likely to exist, for a one-unit increase in the independent variable. In order to convey the relative substantive significance of each model, Nagelkerke's R^2 was reported. It is one of a number of pseudo- R^2 statistics intended to serve as an analog to the R^2 in a linear regression. Although conceptually similar, it cannot be strictly interpreted in the same manner (Field, 2009).

Attitude toward behavior was found to have a significant effect in one of the seven cash flow models and two of the four emergency fund models. In the cash flow set of models, attitude toward behavior was found to be significantly associated with reaching the maximum limit of a credit card. The odds ratio was 1.18 indicating an 18 percent greater chance of not reaching a credit card limit for a one-point increase on the attitude scale. In the emergency fund set of models, the odds ratio of 1.32 was interpreted as a one-unit upward movement on the attitude scale increasing the odds of having an adequate emergency fund by 32 percent. The odds ratio for attitude towards a behavior of 1.21 indicated a 21 percent increase in the odds of being able to pay for a minor emergency for a one-point upward move on the attitude scale. Subjective beliefs were found to be significant in four cases, all of which were among the cash flow-related models. The odds ratios for these models indicated that a one-point increase on the subjective beliefs scale resulted in a 97% increase in the odds of monitoring spending, a 63% increase in the odds of assessing future income and expenses, an 81% increase in the odds of not overdrawing a bank account, and an 85% increase in the odds of maintaining an awareness of total monthly expenses. Perceived behavioral control was found to be a significant predictor in five cases, two of which were among the cash flow models, and three among the emergency fund-related models. In the cash flow model group, odds ratios showed that a one-point increase on the perceived behavioral control scale led to a 52% increase in the odds of not reaching a credit card limit and a 62% increase in the odds of spending less than income for most months. Among the emergency fund models, a one-point increase on the perceived behavioral control scale resulted in a 53% increase in the odds of having an emergency fund of over $1,000, a 109% increase in the odds of having an emergency fund large enough to cover at least three months' expenses, and a 47% increase in the odds of being able to pay for a minor emergency over the preceding 12 months.

There were no instances of significance of the control variables in the emergency fund model group, and only limited instances in the cash flow model group. A one-point increase on the number of dependents scale resulted in a 74% increase in the odds of assessing future income and expenses. Being married increased the odds of monitoring income by 5.34 times. A one-point increase on the education scale increased the odds of monitoring income by 3.08 times and the odds of monitoring spending by 3.22 times. Being other than White decreased the odds of monitoring income by about 80%, monitoring spending by about 78%, and assessing future income and expenses by about 65%. Detailed results are shown in Tables 3.5 and 3.6.

Table 3.5

Summary of Regression Analyses of Variables in Cash Flow-Related Financial Behavior Models

Predictor	Monitored Income			Monitored Spending			Assessed Future Income vs. Expenses			Reached Credit Card Limit			Overdrew Bank Account			Kept Abreast of Expenses			Maintained Positive Cash Flow		
	B	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B
Attitude twd behavior	0.07	0.08	1.08	0.10	0.08	1.11	0.06	0.07	1.06	0.17	0.08	1.18*	0.01	0.07	1.01	0.12	0.09	1.13	-0.12	0.07	0.88
Subjective beliefs	0.37	0.25	1.44	0.68	0.27	1.97*	0.49	0.24	1.63*	0.33	0.25	1.39	0.59	0.25	1.81*	0.61	0.30	1.85*	0.27	0.24	1.31
Perceived behavioral ctrl	0.13	0.15	1.13	0.05	0.15	1.05	0.04	0.13	1.04	0.42	0.15	1.52**	0.19	0.14	1.21	0.31	0.17	1.36	0.48	0.15	1.62**
Number of dependents	-0.31	0.27	0.74	0.06	0.27	1.06	0.55	0.24	1.74*	-0.35	0.24	0.71	-0.30	0.23	0.74	-0.13	0.28	0.88	0.12	0.23	1.13
Marital																					
Single	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Married	1.67	0.71	5.34*	1.10	0.68	2.99	0.10	0.58	1.10	-0.44	0.65	0.64	0.14	0.57	1.15	0.82	0.78	2.27	0.17	0.60	1.18
Education	1.13	0.44	3.08*	1.17	0.47	3.22*	0.31	0.33	1.37	0.21	0.35	1.24	-0.08	0.32	0.93	-0.31	0.40	0.74	0.52	0.33	1.68
Race/ethnicity																					
White	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-White	-1.58	0.54	0.21**	-1.52	0.56	0.22**	-1.04	0.50	0.35*	-1.00	0.53	0.37	0.55	0.48	0.58	1.73	0.63	1.17	-0.44	0.49	0.64
Pay grade	-0.18	0.29	0.83	-0.43	0.30	0.65	-0.34	0.26	0.72	0.21	0.30	1.24	0.42	0.27	1.52	-0.14	0.30	0.87	-0.21	0.26	0.81
Constant		-6.46**			-7.20**			-4.86*			-6.35**			-2.86			-3.02			-4.43*	
X^2		31.21***			28.05***			16.76*			28.83***			13.28			11.13			18.67*	
df		8			8			8			8			8			8			8	
Pseudo R^2		.37			.37			.23			.37			.18			.19			.25	

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

Table 3.6

Summary of Regression Analyses of Variables in Emergency Fund-Related Financial Behavior Models

Predictor	Emergency Fund > $1,000			Emergency Fund > 3 months			Kept Aware of Cash on Hand			Able to Pay for Minor Emergency		
	B	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B
Attitude toward behavior	0.10	0.09	1.11	0.28	0.11	1.32*	-0.09	0.9	0.92	0.19	0.09	1.21*
Subjective belief	0.30	0.29	1.35	0.20	0.32	1.22	0.53	0.28	1.69	0.48	0.27	1.61
Perceived behavioral control	0.43	0.15	1.53**	0.74	0.20	2.09***	0.08	0.16	1.08	0.39	0.15	1.47*
Number of dependents	0.08	0.27	1.09	0.06	0.32	1.06	-0.14	0.28	0.87	-0.50	0.27	0.61
Marital status												
Single	-	-	-	-	-	-	-	-	-	-	-	-
Married	-0.36	0.70	0.70	-0.45	0.83	0.64	-0.16	0.79	0.85	0.22	0.72	1.25
Education	0.56	0.36	1.75	0.74	0.41	2.09	-0.33	0.42	0.72	0.81	0.46	2.24
Race/ethnicity												
White	-	-	-	-	-	-	-	-	-	-	-	-
Non-White	0.16	0.56	0.86	-0.48	0.65	0.62	-0.66	0.62	0.52	-1.01	0.57	0.36

Predictor	Emergency Fund > $1,000			Emergency Fund > 3 months			Kept Aware of Cash on Hand			Able to Pay for Minor Emergency		
Pay grade	0.32	0.28	1.37	0.17	0.31	1.18	-0.15	0.30	0.86	0.38	0.35	1.46
Constant		-7.85***			-12.19***			2.05			-7.29**	
X^2		21.92**			36.25***			9.18			32.18***	
df		8			8			8			8	
Pseudo R^2		.30			.47			.16			.41	

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

Discussion

The present study sought to assess the relationship between what the theory of planned behavior identifies as key antecedents of behavioral performance and behaviors fundamental to maintaining a satisfactory personal financial condition, specifically among military members. Among antecedents of planned behavior identified by the theory are attitude towards a behavior, subjective beliefs about the behavior, and perceived behavioral control (Ajzen, 1991). The outcome behaviors measured were related to the maintenance of positive cash flow and maintenance of an emergency fund. This study is the first to apply the theory of planned behavior to a personal finance-related area using a military sample. The value of using a military sample, as opposed to a sample from the general population, lay in the greater chance of the findings being applicable specifically to the military population. Certain unique aspects of the military population were reflected in the study's design. It incorporated military pay grade, analogous to socioeconomic status within the general population, as a control variable (Green, 1970). The measure for subjective beliefs focused specifically on respondents' perceptions of their military leaders' views on being in good financial condition, so that the importance of leaders' views for its effect on personal financial behavior might be revealed.

Five of the seven models with cash flow-related dependent variables were found to be statistically significant. The betas of the three behavioral antecedent variables were positive as expected in all seven models, with one exception. The exception was the slightly negative beta of the attitude variable in the model using actual maintenance of positive cash flow as the dependent variable, though there was no statistical significance. Statistical significance among the behavioral antecedent variables in the significant models was sparse. The model with the behavior of monitoring income to be in keeping with expectations as the dependent variable was significant, though only the control variables of marital status, education level, and race/ethnicity were found to be significant predictors within the model. The model for predicting the behavior of monitoring spending to ensure it is within income had the behavioral antecedent of subjective beliefs along with education level and race/ethnicity as significant predictors. The model for the behavior of assessing future spending to be within income showed subjective beliefs to be a significant predictor along with the number of financial dependents and race/ethnicity. These three models were the only among all 11 models to reveal significance among the control variables. The fourth significant model in this group had ongoing positive cash flow as a dependent variable. The only significant independent variable in this model was perceived behavioral control. The models for predicting behaviors of overdrawing bank accounts and maintaining awareness of expenses both had subjective beliefs as significant predictors, though the models viewed in their entirety were not statistically significant. Their chi-square statistics were not significant. The lack of significance of the residual chi-square is interpreted to mean that inclusion of all the independent variables would not significantly increase the model's predictive power beyond use of the constant alone (Field, 2009).

All four models involving emergency fund-related behaviors were found to be significant. With one exception, the valence of the betas of the three behavioral antecedent variables were positive as expected in all these models, though statistical significance was present less often. The single exception was that, contrary to expectation, the beta of the attitude measure was slightly negative in the model using awareness of money on-hand as the dependent variable, though statistical significance did not accompany this result. This model was also the only one of the four where the residual chi-square statistic, after removing the independent variables, was not significant, indicating that as a group, the independent variables' contribution to the model's predictive power was not significant (Field, 2009). Nevertheless, the results of this set of four models did provide support for the importance of attitude and perceived behavioral control as influential in some behaviors associated with maintenance of a proper emergency fund. The measure of subjective belief was narrowly focused on the military members' perception of their leaders' views of maintaining a satisfactory personal financial status. The failure to find more instances of significance of this predictor among these models, when considered along with the predictive power associated with it in other studies based on the theory of planned behavior, suggests that members' perceptions of the beliefs of other types of significant referents, for instance, their peers, may be more influential. None of the demographic measures used as control variables yielded any statistical significance in the emergency fund-related models. A table summarizing the relationships for both groups of models is presented in Table 3.7.

Table 3.7

Summary of Significant Relationships between Independent and Dependent Variables

Dependent Variables	Independent Variable with Significant Association
Monitored income	Marital status
	Education
	Race/Ethnicity
Monitored spending	Subjective beliefs
	Education
	Race/Ethnicity

Dependent Variables	Independent Variable with Significant Association
Assessed future income versus expenses	Subjective beliefs Number of dependents Race/Ethnicity
Reached credit card limit	Attitude toward behavior Perceived behavioral control
Overdrew bank account	Subjective beliefs
Kept abreast of expenses	Subjective beliefs
Maintained positive cash flow	Perceived behavioral control
Emergency fund > $1,000	Perceived behavioral control
Emergency fund would last > 1 month	Attitude toward behavior Perceived behavioral control
Kept aware of cash on-hand	
Able to pay for minor emergency	Attitude toward behavior Perceived behavioral control

Despite the similar construction of the models, there was a marked difference in the instances of significance found between the sets of models for each category. In speculation, the disparate results are possibly related to differences in complexity of maintaining positive cash flow as compared to building and maintaining an emergency fund. Cash flow management is a dynamic process that can only be assessed over a period of time. In the absence of a large income surplus or in the presence of highly variable income or expenses, cash flow management requires continual effort. It requires projections and comparison of non-simultaneous future income and expense projections. In contrast, the thought process behind building and maintaining an emergency fund is simpler. Although it may be challenging in practice to build an adequate emergency fund when expenses are high relative to income, the idea of setting aside some cash as income is received until a target amount is accumulated is relatively simple. Holding all else equal, maintaining an emergency fund once established is also simple in concept in that it requires no action, only the discipline to leave it undisturbed, until an emergency presents.

Implications

The descriptive statistics showed that, on average, a larger percentage of the sample reported engaging in or manifesting the results of positive cash flow-related behaviors as opposed to emergency fund-related behaviors. Cash flow management and building and maintaining an emergency fund are not unrelated when it is presumed that the source of money for the emergency fund is the result of the mutually exclusive choice to save a given amount of money for an emergency fund rather than spend it. Logically, a negative cash flow situation cannot persist indefinitely. Eventually savings will be depleted and credit will be exhausted. Therefore, although this study's results did less to inform on cash-flow related behaviors, it would be reasonable to hypothesize that efforts leading to greater prevalence of adequate emergency funds among the study population would also improve cash flow. Cash flow is moved in the positive direction by increasing income, reducing expenditures, or both. Holding all else equal, the act of placing money that would have otherwise been spent into an emergency fund reduces expenditure, thereby improving cash flow.

The results of the emergency fund-related model suggested perceived behavioral control and attitude were influential in the outcome of maintaining an emergency fund. This suggests that these things in particular, a perception of control over, and positive attitudes toward, behaviors leading to building and maintaining an adequate emergency fund should be promoted.

Limitations

The primary limitations of this study fell into two broad categories: those related to the sample and those related to the measures. In the context of survey-based research, the sample was small relative to the study population. This led to the loss of specificity in the results compared to what would have been possible had the survey instrument been administered to a larger sample. Most items on the questionnaire offered five response alternatives in order to take full advantage of the design of the multiple-item response sheets used. In a number of instances, response data from an item's five alternative responses had to be merged to preserve validity of the statistical results at the expense of precision. Another limitation was that the sample did not reflect the demographic make-up of the study population. The entire sample came from a single Army brigade. Junior ranking males were overrepresented. This overrepresentation, together with the fact that members of only one branch of service were surveyed, limits the generalizability of this study to the U.S. military population.

Another set of limitations was related to construction of the questionnaire's measures. The measure for attitude toward a behavior asked generally about behaviors related to maintaining a satisfactory personal financial condition instead of naming specific behaviors individually. The questions comprising the attitude measure were framed so as to make the respondents consider financial behaviors relative to other types of behaviors relevant in the military context. Although the approach was not conceptually inconsistent with the theory of planned behavior insofar as it sought to measure respondents' views of behavioral outcomes, the unique approach used limited the comparability of this study's results to other studies relying on a more conventional and precisely targeted approach. The narrowness of the subjective beliefs measure was also limiting. As the measure whose purpose is to determine the effect of respondents' perception of their significant referents' beliefs towards a behavior, it focused only on one category of referents: leaders in the military chain-of-command. In doing so, it failed to measure the influence of peers, family members, and others who might influence a respondent's behavior. The narrowness of the subjective beliefs measure does not diminish the value of the information on the importance of military leaders' influence on financial behaviors provided by this study even if other possible sources of influence were not measured.

Future Research

The current study yielded a number of suggestions for extending research in this vein. To address one of the most significant limitations identified, access to larger, more representative samples would strengthen the quality, granularity, and generalizability of results. Opportunities to work with military samples were found to be exceedingly rare when requests for access were initiated outside an office under the purview of the Department of Defense. While there are valid reasons for establishing barriers to access, it is unfortunate that attempts to conduct well-intended research with military samples are often frustrated when requests for access are initiated by extra-governmental sources.

This study's overarching objective was to suggest areas of focus most likely to elicit desired personal financial behavioral changes for personal financial improvement programs targeting military audiences. The desired end was to inform policy makers, educators, and counselors charged with providing this type of support to military members allowing them to improve program quality and make the best use of available resources. The two categories of behaviors studied were those related to maintaining positive cash flow and maintaining an adequate emergency fund. In order to explore determinants of these behaviors more deeply, experimental studies are suggested where treatments are focused on promoting positive attitudes toward and strength of perceived control of behaviors related to these desired outcomes. In addition, a longitudinal component in future research would help evaluate the persistence of the treatments' effects, suggesting the extent to which follow-up treatments are needed. Future research might also investigate mechanisms to classify program participants by characteristics indicating greater receptiveness to one form of treatment over another.

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Chapter 4 - The Effects of Subjective and Objective Financial Knowledge and Financial Confidence on Financial Behaviors

An urgent need exists for widespread improvement of the personal financial condition of U.S. military members. At the individual level, problems can result in loss of security clearance and even discharge from the military. Aggregated across large numbers, the underutilization or discharge of members trained at considerable taxpayer expense can result not only in fiscal waste, but also can mount to force-wide readiness concerns (Luther, Garman, Leech, Griffitt, & Gilroy, 1997). While personal financial difficulties are by no means confined to it, the military population warrants distinct examination because of some relevant differences with the general population. For instance, frequent deployments and relocations of military members can increase their exposure to opportunities for financial trouble (FINRA Investor Education Foundation, 2010). Also, concentrations of young, financially unsophisticated members on and near military installations have become a target clientele of non-bank lenders, some of whom are predatory in nature, ready to lend money with ease, though under terms disadvantageous to borrowers (FINRA Investor Education Foundation, 2010; Harris, 2011).

Even beyond a person's period of military service, deficits in financial well-being can weigh on Defense and Veterans Affairs budgets and society in general. A national survey of combat veterans who served in Iraq and Afghanistan found that major depression, post-traumatic stress disorder, and traumatic brain injury had a significant association with financial difficulties. The same study found that regardless of diagnosis, manifestations of post-deployment adjustment problems in the forms of criminal arrests, homelessness, substance abuse, suicidal behavior, and aggression were less likely to occur in veterans who had sufficient money to cover basic needs (Elbogen, Johnson, Wagner, Newton, & Beckham, 2012). The incorporation of behavioral change efforts that promote behaviors leading to financial well-being are therefore important to maintaining a ready force as well as fostering crucial life skills whose benefit carries on after a veteran's period of service.

Over the past several decades, there has been a proliferation of programs aimed at helping military members improve their personal financial status (Fannie Mae Foundation, Institute for Socio-Financial Studies, 2000). Despite these efforts, serious impacts resulting from military members' financial difficulties persist (FINRA Investor Education Foundation, 2013a). This persistence of financial difficulties indicates the need for the continued search for ways to refine programs to increase their effectiveness. Programs with the objective of imparting knowledge, while likely to be helpful in some regard, will not succeed in addressing the problem if they do not also result in lasting improvements in financial behavior. This study examined the association of subjective and objective financial knowledge and financial confidence on two behaviors fundamental to satisfactory financial condition: maintenance of an adequate emergency fund and maintenance of positive cash flow, in other words, keeping household expenditure at or below the level of household income. In addition, the study also looked at the association between subjective and objective financial knowledge and financial confidence with negative financial behaviors. Specifically, the negative financial behaviors examined were engaging in high-cost borrowing behaviors through alternative financial services (AFS). AFS are establishments that extend credit that result in interest expenses typically much higher than those charged by traditional lenders, such as banks or credit unions (Lusardi & Trufano, 2009). The specific AFS whose usage is a subject of the present study are payday loans, auto title loans, pawn shops, and rent-to-own stores.

Theoretical Framework and Related Literature

As noted by Hilgert, Hogarth, & Beverly (2003), there have been copious studies on the relationship between financial knowledge and financial behaviors that generally support the theoretical assumption that better informed consumers make better financial choices. This assumption provides the theoretical underpinning for the present study of the relationship of military members' subjective and objective financial knowledge and certain positive and negative financial behaviors.

In the context of saving, cash flow management, and borrowing behavior, financial knowledge has been found to be positively related to more effective decision-making and better outcomes (Hilgert et al., 2003; Lusardi & Trufano, 2009; Stango & Zinman, 2009). The literature provides support for investigating subjective and objective knowledge separately (Flynn & Goldsmith, 1999). Subjective knowledge generally refers to some form of self-assessment by respondents, while objective knowledge is typically measured by quiz questions incorporated into survey instruments (Xiao, Tang, Serido, & Shim, 2011). Subjective knowledge has been found to have a stronger association with positive financial behaviors than objective knowledge. Though both subjective and objective financial knowledge were found to be influential, they exhibited relatively low correlation with each other (Courchane & Zorn, 2005; Robb & Woodyard, 2011).

The positive behaviors of interest are maintenance of positive cash flow and maintenance of an adequate emergency fund. Positive cash flow, for this study's purpose, is defined as keeping spending below the level of household income over time. An adequate emergency fund is generally considered among financial planning professionals to be a cash reserve equivalent to at least three months' expenditures (Huston & Chang, 1997; Garman & Forgue, 2011). Cash flow and emergency fund behaviors were chosen for study because they are widely considered to be fundamental to maintaining a satisfactory personal financial condition (Godwin & Koonce, 1992; Lusardi, 2011; Xiao, Sorhaindo, & Garman, 2006). In examining the connection between financial knowledge and specific behaviors, a study using data from the 2001 Survey of Consumer Finances, affirmed a positive relationship between financial knowledge and favorable cash flow management practices (Hilgert et al., 2003). Another study on the effects of a particular financial education program administered to military members found those who had attended the course to be more likely than those who had not attended to have an emergency fund (Bell, Gorin, & Hogarth, 2010; Brand, Hogarth, Peranzi, & Vlietstra, 2011). While financial knowledge is an important predictor of financial behavior in general, in cash flow management and emergency fund behaviors both among military members and a more general population, it is interesting to note that some studies have detected differences in the effects of subjective and objective knowledge (Ellen, 1994; Raju, Lonial, & Mangold, 1995).

There is precedent for examining subjective and objective financial knowledge separately in examining relationships with borrowing behaviors as well. In a study of the determinants of certain credit card behaviors, self-assessed financial knowledge was found to be more strongly associated with less costly credit card use versus objectively assessed financial knowledge, with a combined measure having a larger effect size than the either measure alone (Allgood & Walstad, 2011). In another recent study, Seay and Robb (2013) examined separately the relationships of subjective and objective financial knowledge with use of AFS. They used separate scales to measure objective and subjective financial knowledge constructed from individual items in the 2009 National Financial Capability Study questionnaire, which was also the source of their study’s data. Among the components of their subjective knowledge scale was financial confidence, or a self-assessment of skill in day-to-day personal financial management, and a direct self-assessment of financial knowledge. The findings revealed significant negative relationships between objective financial knowledge and AFS use, but associations with subjective knowledge were found only with use of payday lenders and pawn shops. The authors recognized that other literature had noted relationships between subjective knowledge and certain financial behaviors and suggested that objective knowledge may be superior to subjective knowledge as a predictor of more complex behaviors. Other studies of the associations between financial knowledge and use of AFS have also noted negative relationships (deBassa Scheresberg, 2013; Lusardi & Trufano, 2009).

Loibl, Cho, Diekmann, and Batte (2009) found self-confidence to be influential in consumer behavior in general. Curiously, Lusardi (2011) found that self-confidence in dealing with day-to-day financial matters was unrelated to engaging in high-cost borrowing behaviors, such as obtaining cash advances and paying late payment fees.

The negative financial behaviors examined in this study are the use of high-cost borrowing through AFS. Although any number of negative financial behaviors could have been chosen for this study, use of AFS has been a particular concern for the military population. AFS often specifically target military members by positioning their stores near military installations as a way to tap a large concentration of young, financially unsophisticated potential customers (Graves & Peterson, 2005; Harris, 2011).

Other Known Correlates of Financial Knowledge and Financial Behavior

There are a number of factors identified throughout the literature on financial knowledge and financial behavior that have been found to be related to one or both of them. Among them are age, gender, race/ethnicity, income, education, marital status, number of dependent children, socioeconomic status, financial risk tolerance, and exposure to income shock (a significant, unexpected reduction in income). Babiarz and Robb (2014) conducted a study using data from the 2009 National Financial Capability Study on the relationship between financial literacy and existence of an emergency fund. The researchers found that older, better educated, married, White males with fewer children and no recent shocks to income were more likely to have an adequate emergency fund. In addition, they noted a tendency for those with emergency funds to have a slightly higher financial risk tolerance. A broader study of general financial capability found youth, being Black or Hispanic, having lower levels of income and education, and having had recent exposure to income shock to be determinants of lower financial capability and higher use of AFS (Lusardi, 2011). Socioeconomic status, a broad term that can include education, income, homeownership, and employment, is another factor Mak and Braspenning (2012) showed to be related to financial literacy. Military rank and pay grade have been shown to be useful as a proxy for socioeconomic status; therefore, pay grade was included as part of the present study (Green, 1970).

Methods

Data. The data for this study came from the 2012 National Financial Capability Study's Military Survey. The 2012 National Financial Capability Study also included data from a nationally representative survey of over 25,000 American adults. It was commissioned by the Financial Industry Regulatory Authority's Investor Education Foundation, and developed in consultation with the Department of the Treasury and the President's Advisory Council on Financial Capability (FINRA Investor Education Foundation, 2013b). The survey was administered on-line, and all responses were self-reported and not independently corroborated. The sample of 1,000 respondents for the military portion of the survey did not perfectly reflect the demographic make-up of the study population. Therefore, a weighting factor was supplied with the dataset as a means of adjusting the data to more closely reflect the military population on the basis of gender, pay grade, and service component (FINRA Investor Education Foundation, 2013a). The weighting factor was incorporated into the analysis to enhance the generalizability of the present study's findings to the study population. Many of the survey questions offered response alternatives of "don't know" or "prefer not to say." Few respondents selected those responses. Those who did, along with those who failed to register any response to a survey item used in the present analysis, were excluded from the final sample.

Dependent variables. For the examination of positive financial behaviors, this study examined certain attributes of members of the military population to assess whether they were predictive of performance of two behaviors fundamental to maintaining a satisfactory personal financial condition: maintenance of an emergency fund; and maintenance of positive cash flow.

A binary variable was used to represent performance of the emergency fund maintenance behavior. Respondents answered "yes" or "no" to the questionnaire item, "Have you set aside emergency or rainy day funds that would cover your expenses for 3 months in case of sickness, job loss, economic downturn, or other emergencies?"

Performance of the positive cash flow behavior was measured by the questionnaire item, "Over the past year, would you say your spending was less than, more than, or about equal to your income? Please do not include the purchase of a house or car, or other big investments you may have made." For respondents who indicated they were married or living with a partner, a variant of the question applicable to the entire household was used. Respondents were asked to indicate whether their spending was more than, about equal to, or less than their income. The variable was recoded to be binary with responses of spending more than income and spending about equal to income being combined into a single category.

The examination of negative financial behaviors studied use of AFS. The AFS-related questions on the survey asked respondents about their frequency of use over the last five years of auto title loans, tax refund anticipation loans, payday loans, pawn shops, and rent-to-own stores. Tax refund anticipation loans were not included in the present analysis, because the reported usage level in the sample was so low that the statistical results would have yielded little meaning. For the present study, the variables were treated as binary to reflect whether or not the respondent had used the particular type of AFS within the specified time frame.

Independent variables. Objective financial knowledge was measured by a five-item scale that probed respondents' knowledge of interest rates, bond prices, inflation, diversification of investments, and mortgages. Most of the individual questions comprising the scale had been used in various combinations in a number of previous large scale surveys. The questions on interest rates, inflation, and investment diversification were used in the 2004 Health and Retirement Survey and a wave of the 2007-2008 National Longitudinal Study of Youth (Lusardi, Mitchell, & Curto, 2010). Those questions, in addition to the one on bond prices, were used in an American Life Panel survey (Lusardi & Mitchell, 2010). All of the questions were used together as a scale in studies using data from the 2009 National Financial Capability Study (Allgood & Walstad, 2011; Woodyard & Robb, 2012; Xiao, Chen, & Chen, 2013). Respondents were assigned values of 0 to 5 depending on how many of the five questions they answered correctly.

Subjective financial knowledge was measured by a single item that asked respondents to assess their financial knowledge on a seven-point Likert-type scale, assigning values of 1 to responses of "very low" to values of 7 for responses of "very high." Respondents were also given the option to answer “don’t know” and “prefer not to say;” however, none of the respondents in the final sample returned these responses.

Closely related to the concept to subjective financial knowledge, a measure of self-assessed financial confidence was included. Financial confidence was measured by a seven-point Likert-type scale with responses to the statement, “I am good at dealing with day-to-day financial matters, such as checking accounts, credit and debit cards, and tracking expenses,” ranging from strongly disagree to strongly agree. Higher scores represented higher levels of financial confidence. Respondents were given the option to respond “don’t know” and “prefer not to say,” though none of them did.

Variables introduced as controls included age, gender, race/ethnicity, marital status, number of dependent children, education, household income, military pay grade, income shock, and investing risk tolerance. Age was treated as a categorical variable and used ranges of 18-25, 26-35, and 36 or older. Gender was coded as a binary variable as was race/ethnicity, which used categories of White and Non-White. Because some of the survey’s original categories contained low numbers of respondents, the variable for marital status was recoded as binary to facilitate the statistical analysis. All respondents were classified as either single or married. Respondents who reported being unmarried, but living with a partner, were treated as married. The variable for number of dependent children was treated as categorical with categories of none, one, two, or three or more dependent children. The categorical variable for education used categories non-college graduates, college graduates, post-graduate education. Responses in the survey’s original categories of non-high school graduates, high school graduates, those with high school equivalency credentials and those reporting some college were reassigned to the non-college graduate category because of low numbers of respondents in those categories which, if not recoded, would have complicated interpretation of statistical results. Household income was measured by the questionnaire as being in one of eight different categories that were defined by ranges of approximate annual income. The categories at the low and high extremes were defined as less than $15,000 and $150,000 or more, respectively. The number of categories for this variable was high relative to the sample size. Ordinal variables with five or more categories are often treated by researchers as continuous with a low risk of practical impact on results, so long as the distribution is reasonably normal (Newsom, 2012). With a skewness of -0.20 and kurtosis of -0.31, the distribution of the data with normalized weights applied was very nearly normal. Therefore, household income was treated as continuous for the present analysis. Military pay grade categories were unchanged from those used in the original dataset. Responses were grouped into categories of E-1 to E-4, E-5 to E-6, E-7 to E-9, and W-1 to O-10. These pay grades correspond to the ranks of the various service branches with the groupings representing junior enlisted, non-commissioned officers, senior non-commissioned officers, and warrant and commissioned officers, respectively (Defense Accounting and Finance Service, 2011). Income shock was coded as a binary variable, where respondents had reported whether or not they had experienced a large, unexpected drop in income over the last 12 months. Responses of “don’t know” and “prefer not to say” were offered as alternatives on the survey, but no respondents in the final sample for the present analysis selected them. Investing risk tolerance was measured on a 10-point Likert-type scale where respondents were asked to indicate their willingness to assume investing risk on a range from “not at all willing” coded as 1 to “very willing” coded as 10.

Analysis

The relationships between the independent and dependent variables were assessed using a series of binary logistic regressions. All models were identical to each other with the exception of the dependent variable. The variables for gender, age, race/ethnicity, pay grade, marital status, education, income shock, and number of dependent children were all treated as categorical. Objective and subjective financial knowledge, financial confidence, household income, and financial risk tolerance were treated as scales. The analysis was conducted using PASW Statistics 18.0.

Results

Descriptive statistics of the final sample with normalized weights applied are presented in Table 4.1. Just over half the respondents were between the ages of 26 and 35, had no college degree, and had no dependent children. Over 80% were male. Just over two-thirds identified themselves as White, were either married or living with a partner, and reported annual household income of $50,000 or greater. Just over half did not have a college degree.

Table 4.1

Descriptive Statistics of Sample

Variable	*M*	*SD*	Range
Age[a]	1.99	0.70	1 – 3
Gender[b]	1.16	0.37	1 – 2
Race/ethnicity[c]	1.31	0.46	1 – 2
Marital status[d]	1.68	0.47	1 – 2
Number of dependent children[e]	0.94	1.15	0 – 3

Variable	*M*	*SD*	Range
Education[f]	1.63	0.76	1 – 3
Pay grade[g]	2.20	0.97	1 – 4
Household income[h]	4.72	1.61	1 – 8
Income shock[i]	0.22	0.41	0 – 1
Financial risk tolerance	5.97	2.26	1 – 10
Subjective financial knowledge	5.38	1.07	1 – 7
Financial confidence	5.88	1.39	1 – 7
Objective knowledge	3.26	1.41	0 – 5
Maintains positive cash flow[i]	0.52	0.50	0 – 1
Maintains adequate emergency fund[i]	0.55	0.50	0 – 1
Auto title loan[i]	0.12	0.32	0 – 1
Payday loan[i]	0.09	0.29	0 – 1
Pawn shop[i]	0.14	0.35	0 – 1
Rent-to-own[i]	0.09	0.29	0 – 1

Note: Normalized weights applied. *n* = 949.
[a]Age: 1 = *18 – 25*, 2 = *26 – 35*, 3 = *36 +*. [b]Gender: 1= *male*, 2 = *female*.
[c]Race/ethnicity: 1 = *White*, 2 = *Non-White.*
[d]Marital status: 1 = *single*, 2 = *married or living with partner*.
[e]Number of dependent children: 0 = *none*, 1 = *one*, 2 = *two*, 3 = *three or more*.
[f]Education: 1 = *non-college graduate*, 2 = *college graduate*, 3 = *post-graduate degree*.
[g]Pay grade: 1 = *E1 – E4*, 2 = *E5 – E6*, 3 = *E7 – E9*, 4 = *W1 – O-10*.
[h]Household income: 1 = *less than $15,000*, 2 = *$15,000 - $24,999*, 3 = *$25,000 to $34,999*, 4 = *$35,000 to $49,999*, 5 = *$50,000 +*. $74,999, 6 = $75,000 - $99,999, 7 = $100,000 - $149,999,
8 = $150,000 or more
[i]Income shock, Maintains positive cash flow, Maintains adequate emergency fund, Auto title loan, Payday loan, Pawn shop, Rent-to-own: 0 = *no*, 1 = *yes*.

An important statistic in logistic regressions is the odds ratio, presented as exponentiated beta in Table 4.2. It is interpreted as the change in the ratio of the odds of the binary dependent variable being in one of its possible states versus the other for a one-unit change in the independent variable. Where categorical independent variables are involved, it is the change in odds associated with the particular category of the variable versus the reference category (Field, 2009). Although previous literature had identified a stronger relationship between subjective as opposed to objective knowledge and positive financial behaviors, only partial support was found in the present study. The odds ratio showed that a one-point increase on the objective knowledge scale increased the odds of maintaining positive cash flow by 12%, but there was no significance found for the relationship between objective knowledge and maintaining an emergency fund. Conversely, no significant relationship was found between subjective knowledge and the cash flow behavior, but there was one for the emergency fund behavior. In the latter case, the odds ratio indicated a 33% increase in the odds of maintaining an emergency fund for each unit increase on the subjective knowledge scale. The effect of financial confidence was similar to that of objective knowledge in that a one-unit increase on the scale resulted in 14% greater odds of maintaining positive cash flow, but there was no significant relationship with maintaining an emergency fund. There were significant relationships detected among the control variables. Being female increased the odds of maintaining positive cash flow by 60% and maintaining an emergency fund by 51%. Number of dependent children was also influential. Respondents reporting three or more dependent children were 58% less likely to maintain positive cash flow, and 41% less likely to maintain an emergency fund. Those reporting two dependent children were 58% less likely to maintain an emergency fund. Having a graduate degree led to 86% higher odds of maintaining an emergency fund. A one-unit increase on the household income scale resulted in 24% increased odds of maintaining positive cash flow. Respondent who reported an income shock in the preceding 12 months were 33% less likely to maintain positive cash flow. A one-unit increase in investing risk tolerance led to 13% greater odds of maintaining an emergency fund.

In reviewing determinants of AFS use, objective knowledge was found to be negatively related to all forms of AFS examined in the present study. A one-unit increase on the objective knowledge scale indicated 28% lower odds of using auto title loans, 36% lower odds for both payday loans and rent-to-own stores, and 26% lower odds of using a pawn shop. In sharp contrast, subjective knowledge was found to be positively associated with each form of AFS use. A one-unit increase on the subjective knowledge scale led to increased odds of using auto title loans by 53%, payday loans by 37%, pawn shops by 62%, and rent-to-own stores by 98%. Similar to objective knowledge, financial confidence was found to be negatively related to AFS use. For each unit increase on the financial confidence scale, odds of using auto title loans were 20% lower, 26% lower for payday loans, 26% lower for pawn shops, and 30% lower for rent-to-own stores. Race/ethnicity was significant in only instance with non-Whites having 87% greater odds of using payday loans. Likewise, marital status was significant in only a single instance with married respondents being 64% less likely to use auto title loans. Having one dependent child increased odds of using auto title loans by 2.44 times, and rent-to-own stores increased by 5.32 times as compared to having no dependent children. Those reporting two dependent children were 2.43 times more likely to use pawn shops and 7.17 times more likely to use rent-to-own stores. Having three or more dependent children increased odds over having no dependent children by 2.48 times of using auto title loans, 3.03 times for payday loans, 2.92 times for pawn shops, and 8.67 times for rent-to-own stores. Those with a graduate degree had 2.5 times greater odds of using an auto title loan than a non-college graduate. Only one instance of significance was found with pay grade. Being in the E-5 to E-6 category resulted in a 53%

lower chance of rent-to-own store use. Not surprisingly, household income was negatively related with all forms of AFS use. A one-unit increase on the household income scale led to a 16% reduction in odds of using an auto title loan, a 26% reduction for payday loan use, a 31% reduction for pawn shop use, and a 23% reduction for rent-to-own store use. Experiencing an income shock greatly increased the odds of AFS use. An income shock in the last 12 months increased odds of auto title loan use by 2.06 times, payday loan use by 2.99 times, pawn shop use by 2.12 times, and rent-to-own use by 2.25 times. Risk tolerance was significant in only one instance involving AFS use. A unit increase on the risk tolerance scale resulted in 16% greater odds of rent-to-own store use. Complete results of the entire series of regressions are shown in Table 4.2 for the positive cash flow and emergency fund maintenance variables and in Table 4.3 for models examining AFS use. The entire series of regressions was evaluated for the existence of multicollinearity. The dependent and independent variables were entered as linear regressions because the PASW Statistics 18.0 software used in the analysis does not include collinearity diagnostics specific to binary logistic regressions (Field, 2009). No indications of multicollinearity were found among variance inflation factors.

Table 4.2

Summary of Regression Analyses of Variables in Financial Behavior Models

Independent Variable	Cash Flow			Emergency Fund		
	B	*SE B*	e^B	*B*	*SE B*	e^B
Objective knowledge	0.11	0.06	1.12*	0.02	0.06	1.02
Subjective knowledge	0.11	0.07	1.12	0.28	0.07	1.33***
Financial confidence	0.13	0.06	1.14*	0.07	0.06	1.07
Age						

Independent Variable	Cash Flow			Emergency Fund		
	B	*SE B*	e^B	*B*	*SE B*	e^B
18-25	-	-	-	-	-	-
26-35	-0.20	0.20	0.82	0.21	0.20	1.22
36 and older	-0.49	0.26	0.61	0.32	0.27	1.38
Gender						
Male	-	-	-	-	-	-
Female	0.47	0.20	1.60*	0.41	0.20	1.51*
Race/ethnicity						
White	-	-	-	-	-	-
Non-White	-0.17	0.16	0.84	0.06	0.16	1.06
Marital status						
Single	-	-	-	-	-	-
Married	-0.10	0.18	0.91	0.10	0.18	1.10
Number of dependent children						
None	-	-	-	-	-	-
One	-0.07	0.20	0.93	-0.01	0.20	1.00
Two	-0.30	0.21	0.74	-0.86	0.22	0.42***
Three or more	-0.88	0.26	0.42**	-0.53	0.25	0.59*
Education						
Non-college graduate	-	-	-	-	-	-
College graduate	-0.14	0.17	0.87	0.25	0.17	1.29
Post-graduate	0.03	0.24	1.00	0.62	0.25	1.86*

Independent Variable	Cash Flow			Emergency Fund		
	B	*SE B*	e^B	*B*	*SE B*	e^B
Pay grade						
E1 to E4	-	-	-	-	-	-
E5 to E6	-0.06	0.20	0.95	0.15	0.20	1.16
E7 to E9	-0.04	0.30	1.00	0.33	0.30	1.39
W1 to O10	0.33	0.29	1.39	0.44	0.29	1.56
Household income	0.21	0.06	1.24***	0.01	0.06	1.01
Income shock	-0.41	0.18	0.67*	-0.06	0.18	0.94
Risk tolerance	0.00	0.03	1.00	0.12	0.03	1.13***
Constant		-2.10***			-2.97***	
X^2		99.97***			109.86***	
df		19			19	

Notes: $^*p < .05$. $^{**}p < .01$. $^{***}p < .001$. e^B = exponentiated *B*. Normalized weights applied.

Table 4.3

Summary of Regression Analyses of Variables Predicting Financial Behaviors

Predictor	Auto Title Loan			Payday Loan			Pawn Shop			Rent-To-Own		
	B	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B
Objective knowledge	-0.33	0.08	0.72***	-0.44	0.09	0.64***	-0.30	0.07	0.74***	-0.45	0.10	0.64***
Subjective knowledge	0.42	0.12	1.53***	0.32	0.12	1.37*	0.48	0.11	1.62***	0.69	0.15	1.98***
Financial confidence	-0.22	0.08	0.80**	-0.45	0.09	0.64***	-0.30	0.07	0.74***	-0.36	0.09	0.70***
Age												
18-25	-	-	-	-	-	-	-	-	-	-	-	-
26-35	-0.47	0.31	0.62	0.14	0.37	1.14	0.33	0.29	1.39	-0.56	0.39	0.57
36 and older	-0.44	0.44	0.65	0.60	0.50	1.81	-0.52	0.43	0.60	-0.59	0.52	0.55
Gender												
Male	-	-	-	-	-	-						
Female	-0.73	0.38	0.48	-0.88	0.45	0.42	-0.23	0.31	0.79	0.63	0.38	1.87
Race/ethnicity												
White	-	-	-	-	-	-						
Non-White	0.29	0.24	1.34	0.62	0.26	1.87*	-0.09	0.22	0.91	0.10	0.29	1.11
Marital status												
Single	-	-	-	-	-	-						
Married	-1.03	0.29	0.36***	-0.37	0.33	0.70	-0.26	0.27	0.77	-0.60	0.36	0.55
Number of dependent children												
None	-	-	-	-	-	-	-	-	-	-	-	-
One	0.89	0.33	2.44**	0.46	0.39	1.59	0.41	0.31	1.51	1.67	0.42	5.32***
Two	0.70	0.39	2.01	0.51	0.42	1.66	0.899	0.33	2.43**	1.97	0.47	7.17***
Three or more	0.91	0.41	2.48*	1.11	0.44	3.03*	1.07	0.36	2.92**	2.16	0.51	8.67***
Education												
Non-college graduate	-	-	-	-	-	-	-	-	-	-	-	-
College graduate	0.27	0.29	1.32	-0.02	0.33	0.98	0.29	0.26	1.34	-0.35	0.36	0.70
Post-graduate	0.92	0.38	2.50*	0.34	0.48	1.40	0.49	0.38	1.64	0.57	0.48	1.78
Pay grade												
E1 to E4	-	-	-	-	-	-	-	-	-	-	-	-
E5 to E6	0.14	0.29	1.15	-0.33	0.34	0.72	-0.38	0.26	0.68	-0.75	0.35	0.47*

Predictor	Auto Title Loan			Payday Loan			Pawn Shop			Rent-To-Own		
	B	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B	*B*	*SE B*	e^B
E7 to E9	0.15	0.47	1.17	0.44	0.49	1.55	-0.03	0.44	0.97	0.22	0.49	1.25
W1 to O10	-0.28	0.48	0.76	-0.33	0.61	0.72	-0.43	0.46	0.65	-0.81	0.65	0.45
Household income	-0.18	0.09	0.84*	-0.30	0.11	0.74**	-0.37	0.09	0.69***	-0.27	0.11	0.77*
Income shock	0.72	0.24	2.06**	1.10	0.27	2.99***	0.75	0.23	2.12**	0.81	0.29	2.25**
Risk tolerance	0.04	0.05	1.04	0.06	0.06	1.07	0.03	0.05	1.03	0.14	0.07	1.16*
Constant	-1.53*			-0.12			-0.73			-2.98**		
X^2	126.96***			154.33***			143.31***			184.91***		
df	19			19			19			19		

Notes: *$p < .05$. **$p < .01$. ***$p < .001$. e^B = exponentiated *B*. Normalized weights applied.

Discussion

The difference in the relationships between subjective and objective knowledge and the positive financial behaviors, positive cash flow and emergency fund maintenance, revealed some interesting findings. Seay and Robb (2013) suggested that objective knowledge may be more influential than subjective knowledge when more complex financial behaviors and decisions are involved. The present findings arguably support that suggestion. Subjective knowledge was found to be associated with emergency fund maintenance, but not positive cash flow, while objective financial knowledge was associated with positive cash flow, but not emergency fund maintenance. Maintaining positive cash flow is a more complex endeavor than maintaining an emergency fund because it requires an ongoing evaluation of past and anticipated future cash flows and consideration over a period of time. There is less intellectual effort required to maintain an emergency fund. Once a target amount is calculated, one simply needs to consider whether the fund's balance is at, above, or below the target when evaluating the potential impact of a financial decision on the emergency fund.

Another finding of interest is the contrast among subjective and objective financial knowledge and financial confidence as they relate to AFS use. The negative relationship between AFS use and objective knowledge is consistent with that previous literature (Lusardi & Trufano, 2009; Seay & Robb, 2013). Financial confidence may have registered lower on the survey among AFS users because those who are less adept at day-to-day financial management are more likely to encounter difficulties necessitating extraordinary action. When viewed together with the positive association between subjective knowledge and AFS use, a disconnect between perception and reality seems to exist in that those who consider themselves more financially knowledgeable were more likely to have used AFS than those who were objectively assessed as more knowledgeable.

Although it was negatively related to positive cash flow, income shock was not found to have a significant relationship with emergency fund maintenance. While a recent income shock could reasonably be expected to hamper maintenance of an emergency fund, it is possible there were enough cases of respondents who had both, habitually maintained emergency funds and experienced an income shock, who also managed to have adequate emergency funds at the time of data collection to prevent a statistical relationship from appearing. Among possible explanations would be that, despite an income shock, the emergency fund was not accessed; the shock did not require depletion of the emergency fund below an adequate level; or sufficient time after the shock but prior to participation in the survey had elapsed in which to restore the emergency fund. It is also possible that the experience of an income shock would have motivated a respondent to begin maintaining an emergency fund. Income shock was found to be positively related to all forms of AFS use studied. This finding, though not particularly unexpected, was not a foregone conclusion with a military population. It is reasonable to project that an income shock could render someone financially ineligible for a loan from a traditional lender and lead them to patronize an AFS, but active duty military members have access to sources of relief not available to their civilian counterparts. Each service branch has an associated organization to assist active duty members with financial emergencies through grants and interest-free loans. Army Emergency Relief, the Air Force Aid Society, the Navy-Marine Corps Relief Society, and Coast Guard Mutual Assistance all offer emergency financial assistance to members of their respective branches under far more favorable terms than those offered by an AFS (Army Emergency Relief, 2014; Air Force Aid Society, 2012; Navy-Marine Corps Relief Society, 2014; Coast Guard Mutual Assistance, 2014). While assistance from the service's aid organization would be preferable, it is acknowledged that AFS use need not be limited to situations that would meet an aid organization's criteria for extending emergency financial assistance.

Investing risk tolerance was found to be a significant determinant in only two cases. In one instance, it was positively associated with maintaining an emergency fund. It is possible that it is the existence of an emergency fund that leads to a higher risk tolerance because it strengthens a household's ability to withstand financial loss or to subsist for a longer period of time without disturbing a riskier investment. Although the risk tolerance betas for all AFS indicated a positive relationship, the only statistically significant relationship for risk tolerance was with rent-to-own use. The lack of more consistent results across all forms of AFS is less clear. While rent-to-own stores differ from the other forms of AFS studied in that they do not lend cash, further study would be required to determine if that difference is indeed explanatory.

Overall the present study's results were in keeping with expectations, although there were some inexplicable differences in predictors among the control variable among the various forms of AFS. This could have been a result of the survey construction, in that respondents were asked to report their AFS usage over the last five years. In that period of time, many of the predictors, such as number of dependent children, marital status, education level, and pay grade could have changed, making AFS use either more or less likely. A summary of the valence of the relationships between the independent and dependent variables is presented in Table 4.4.

Table 4.4

Valence of Significant Relationships between Independent and Dependent Variables

	Positive cash flow	Emergency fund	Auto title loan	Payday loan	Pawn shop	Rent-to-own store
Objective knowledge	+		-	-	-	-
Subjective knowledge		+	+	+	+	+
Financial confidence	+		-	-	-	-
Gender (female)	+	+				
Number of dependents	-	-	+	+	+	+
Married			-			
Education level		+	+			
Pay grade						-
HH Income	+		-	-	-	-
Income shock	-		+	+	+	+
Risk tolerance		+				+

Implications

The present study underscores the importance of increased financial knowledge and financial confidence as important areas of focus for those charged with promoting financial wellness within the military population. Instances of severe financial difficulty within the military population continue to exist at unacceptable levels, indicating the need for continued refinement of policy and programs related to promoting sound personal finances. Improvement in content and structure of personal financial improvement programs is needed, so that the right education is provided to the right people at the right time. On these points, the results highlight income shocks and an increase in the number of dependent children as indications of increased need for financial education or counseling on the pitfalls of high-cost borrowing through AFS and the availability of direct financial assistance from service relief societies. Proactive identification of members who lack the financial knowledge or confidence in day-to-day personal financial management skills would be preferable to discovering such deficits through evidence of a financial hardship. The provision of supplemental education and counseling support could then be offered without having to incur the use of resources for those who do not require special attention. There would undoubtedly be income shocks that occur within the military population, such as a civilian spouse's loss of employment, that do not result from a cause that would be automatically apparent to a member's leadership. While such cases would be more difficult to identify, encouraging early self-identification, raising awareness, and encouraging use of available resources would be a prudent course of action.

Limitations

In contrast to the general dataset, the military portion of the 2012 National Financial Capability Study's smaller size presented some minor challenges for the statistical analysis used in the present study. There was some loss of specificity in the results because of the need to combine response categories of certain variables to keep the statistical analysis viable. Furthermore, the make-up of the sample did not correspond perfectly to the study population across all of the variables used in the analysis. Though weighting was used to adjust for differences between the sample and population in gender, pay grade, and service component, there was no assurance that other potentially influential factors were reflected proportionally. To some extent, this limits the generalizability of the current study's results to its population of interest.

The survey was inconsistent in the use of time period references across various survey questions. Of particular impact to the current study, respondents were asked about AFS usage over the last five years, income shocks over the past year, and the current state of a number of other potential predictors that tend to change over time. While the differences in time frame references were not necessarily inappropriate, they did reduce the confidence with which causality of AFS use could be inferred.

Future Research

Investigation of treatments for military members who have deficits in financial knowledge or confidence in their day-to-day personal financial management skills is indicated as a logical extension of the present study. An assessment administered to identify specific areas of weakness, followed by tailored educational or counseling treatment, and monitoring of longer-term financial outcomes would be optimum. Though programs to increase financial knowledge and confidence could be mandated by military leadership for all military members meeting the demographic profile of being at high risk for financial trouble, such a measure would not guarantee that any particular individual's needs would be met. Additional research could assist in identifying more accurate ways to assess and treat knowledge deficits. Experimental studies would be most effective in evaluating the difference in impact of tailored programs and those that are the current norm. Findings could lead to a more efficient use of resources by applying tailored treatments where they are most needed and avoid the eventual costs of dealing with members who have developed severe financial difficulties.

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Chapter 5 - Conclusions of Personal Financial Difficulties of Military Members

This dissertation adds to the small, but growing body of research into the personal financial condition of members the United States' military. Serious concerns have been recognized at the highest levels of government and military leadership including the President and the Chairman of the Joint Chiefs of Staff (Dempsey & Battaglia, 2012; Executive Office of the President, 2011). Educational and remedial programs to address these concerns have been around since at least the 1960's (Fannie Mae Foundation, Institute for Socio-Financial Studies, 2000). The Department of Defense launched their Financial Readiness Campaign, a major effort to promote financial well-being among military members, over a decade ago (Department of Defense, 2003). One recent report noted the potential overlap in programs sponsored by various government agencies, a condition which implies a lack of coordination and efficiency (U.S. Government Accountability Office, 2012). Plantier and Durband (2007) conducted a study that indicated the efforts to inform military spouses on personal finance led to a flood of information through various communication channels that led to inconsistent messages and conflicting information. The large scale, overlap, and lack of coordination suggests a need for a more focused approach with the selection of focal points informed by research. Specifically, research is needed to determine what the most effective methods for facilitating change in behaviors fundamentally necessary to maintenance of personal satisfactory financial condition. To lessen the occurrence of the most serious consequences of personal financial difficulty, resources and attention should be concentrated on promoting a strong foundation for financial health rather than dispersed among multiple efforts that lack coordination or that cloud the most essential messages with more advanced financial subject matter. The research presented in this dissertation contributes to the pursuit of such a direction.

Chapter Summaries

The three essays in this dissertation share the common objective of suggesting critical areas of focus for improving and sustaining personal financial well-being among the military population. The intended audience is anyone who is in a position to influence the nature of financial guidance provided to military members. The audience description is intended to be broadly interpreted as inclusive of policy makers, military members in positions of leadership, and counselors who work directly with military members. Each essay used a separate theoretical approach to examine a distinct set of relationships between personal and situational characteristics and financially relevant emotional and behavioral outcomes.

The first essay examined determinants of financial stress in military members. The military lifestyle comes with the potential for exposure to a number of stressors that have the potential to lead to detrimental effects at both organizational and individual levels. Among the more serious indications is the need for particular attention to the effects of excessive stress are instances of suicide and domestic violence at rates above that of the general population (Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011; Rudd, 2013; Slep, Foran, Heyman, & Snarr, 2010). The study employed primary data collected from a group of active duty soldiers and took theoretical guidance from stress and coping theory. In brief, stress and coping theory separates stress reactions into categories of problem-focused and emotion-focused. Problem-focused actions are intended to relieve stress by ameliorating the problem, while emotion-focused strategies seek to escape stress using methods that do not directly address the source of the stress. The theory purports that the choice of strategy is related to an individual's perception of coping resources available (Lazarus & Folkman, 1984). The findings showed that military members with an internal locus of control and who tended to react to financial stress with problem-focused positive financial behaviors were more likely to exhibit lower levels of financial stress. Amount of credit card debt was also found to be positively related to financial stress.

The second essay investigated determinants of two groups of behaviors fundamental to personal financial stability. One group was comprised of behaviors related to maintaining positive cash flow, and the other group included behaviors related to maintaining an adequate emergency fund. Maintaining positive cash flow was defined as keeping expenditure less than income over a specified period of time. An emergency fund was described as a cash reserve maintained to address necessary but unexpected expenses. The theory of planned behavior provided the study's framework. The theory identifies a number of factors that can influence behavior. As is typical of studies based on the theory of planned behavior, this study focused on the behavioral antecedents of attitudes towards the behavior, subjective beliefs, and perceived behavioral control as determinants of behavior (Xiao, 2008). Attitude toward a behavior refers generally to whether or not an individual would consider the likely outcome of the behavior to be desirable. Subjective beliefs are an individual's perceptions of whether significant others, such as authority figures, peers, or loved ones, would view the behavior positively or negatively. Perceived behavior control refers to the degree to which the individual perceives having the capability to perform the behavior (Ajzen, 1991). Eleven individual behaviors were measured. Seven were categorized as being related to maintaining positive cash flow, and four were categorized as supporting emergency fund maintenance. Among the cash flow behavior models, subjective beliefs was the most consistently significant predictor, followed by perceived behavioral control, and then attitude toward the behavior. Race/ethnicity, education level, marital status, and number of financial dependents appeared as significant predictors in various combinations among three of the cash flow behavior models. In contrast, none of the control variables were significant in the emergency fund behavior models. In this group, perceived behavioral control was the most frequently significant predictor, followed by attitude towards the behavior. The subjective beliefs variable was not found to be significant in any of the models in this group. The model for predicting awareness of money on-hand did not have a significant predictive power as a whole, nor did any of the independent variables individually.

The third essay used data from the military sample of the 2012 National Financial Capability Study to examine the effects of objective financial knowledge, subjective financial knowledge, and confidence in dealing with day-to-day financial matters on certain positive and negative financial behaviors. The positive behaviors studied were maintaining positive cash flow and maintaining an adequate emergency fund. The negative behaviors were high-cost borrowing through auto title, payday lenders, pawn shops, and rent-to-own stores, collectively referred to as alternative financial services (AFS). The positive behaviors were chosen because they are fundamental to maintaining a satisfactory personal financial condition (Godwin & Koonce, 1992; Lusardi, 2011; Xiao, Sorhaindo, & Garman, 2006). The use of various types of AFS was chosen for study because these establishments have been known to deliberately cultivate a military clientele (Graves & Peterson, 2005; Harris, 2011). The study revealed differential effects among the determinants with the positive behaviors. Objective knowledge and financial confidence were found to be significant predictors of maintaining positive cash flow, while subjective knowledge predicted emergency fund maintenance. Because maintaining an emergency fund is a relatively simpler behavior, this supported the idea that objective knowledge is a better predictor of more complex behaviors. This finding was further supported by the objective knowledge that was found to be negatively associated with AFS use consistently for all forms studied, while subjective knowledge was positively associated with AFS use. Financial confidence was also found to be negatively associated with all forms of AFS use studied.

Implications

All three essays indicated that further study and action are needed. Stress resulting from financial difficulties can add to the stresses that are inherent in military service resulting, in some cases, in extreme tolls upon the military member and that member's family and military organization. Programs designed to foster a sense of empowerment in the area of personal finance would lead to a greater sense of control, more prominent performance of positive financial behaviors, and less emotional stress related to personal finances. This would, in-turn, improve quality of life for many military members while reducing the financial cost to taxpayers.

Although the study based on the theory of planned behavior did not result in findings as strong as they might have been under other conditions, they did provide some support for the theory's predictive power in the context of military members and their financial behaviors. Targeting attitudes, subjective beliefs, and perceived control of desirable financial behaviors needs to be considered in development of financial improvement programs. In other words, focusing on the benefits of the behaviors, encouraging their promotion by leaders, widening target audiences to include military members' significant others, and instilling a sense of control over personal finances is as important as informational content.

The importance of financial knowledge and skill was shown in its relationship with certain positive and negative financial behaviors. Those with greater knowledge are more likely to manage their personal cash flow properly. The practice of keeping expenditures below the level of household income over time makes building and maintaining an adequate emergency fund possible. Greater knowledge is positively associated with good cash flow management and negatively associated with some forms of high-cost borrowing that have been historically problematic for military members. Clearly, the intent behind the long-running Financial Readiness Campaign launched by the Department of Defense is still appropriate (Department of Defense, 2003). Equipping military members with the personal financial knowledge they need continues to be indicated. The combined findings of these essays indicate that the emotional result of personal financial improvement programs is important as well as the rational result. Military members not only need to have the knowledge, but also need to have a recognition of the benefits it will bring them and a sense that they can employ the knowledge effectively and confidently.

Limitations

The interpretation of the findings of the present studies should consider several limitations. The first two studies relied on data from groups that were not representative of the military population on a number of measures. Both samples were from soldiers belonging to the same unit at a large Midwestern U. S. Army installation. The samples did not reflect the demographic make-up of the study population and entirely omitted members of service branches other than the Army. The sample in the second study was particularly small, which limited the extent of statistical procedures that could be employed and the strength of inferences that should be drawn. Furthermore, space on the survey instrument was limited, and the specificity of some items was less than desired. The sample used in the third study was larger, and with use of weighting, was more representative of the study population than the other two studies. Even so, the normalized weights accounted for a limited number of differences between the sample and the population. Despite its larger size, the statistical procedures used were somewhat limited because there were not sufficient numbers in certain categories of respondents.

Future Research

Ideally, future studies would use data from larger, more representative samples to enhance generalizability and fidelity of their findings. Though there have been financial improvement programs in the military for decades, one reason greater progress may not yet have been realized is the lack of coordination and overwhelming amount of information that characterizes these efforts to some degree (Fannie Mae Foundation, Institute for Socio-Financial Studies, 2000; U.S. Government Accountability Office, 2012; Plantier & Durband, 2007). This lack of coordination and glut of information suggests more coordination and a narrower focus on the fundamentals of personal finance is worth investigating. Furthermore, not everyone is on the same plane in terms of financial knowledge and skill, level of confidence, or view of the importance of proper personal financial management. The outgrowth of these observations is that research on ways to tailor and deliver programs to large numbers of military members while maintaining a particular on the fundamentals of personal finance is indicated. Experimental studies that track progress of participants over time would lead to the most definitive findings of the value of such approaches.

Conclusion

The purpose of this dissertation was to suggest the most effective approaches for effecting behavioral changes in the area of personal finance among military members. Obviously, as with any group, there is turnover in the military. Though on any given day, there are changes to the specific set of individuals serving in the military, the prevalence of personal financial difficulties remains unacceptably high. Managing a group of this size is an extremely complex task requiring the efforts of many. There are a host of issues that supersede the personal financial status of individuals in importance where national security is involved. Nonetheless, personal finance is one aspect that, if successfully addressed, would ameliorate a number of other challenges faced by military leaders. If personal financial difficulties were less prevalent among the military, the results would include a better quality of life for members, fewer instances of extreme stress-related behaviors, enhanced readiness, and large cost savings from fewer involuntary discharges and duty restrictions.

Previous literature defined the problem of personal financial difficulties among military members and its impacts. It identified some of the problem's causes, and strengths and weakness in existing programs designed to address the problem. Although additional studies are needed, the present research suggests a new direction for future study related to development of personal financial improvement programs for military members. A focus on behavioral change in areas related to the fundamentals of cash flow management and emergency fund maintenance are strongly suggested. Successful change is likely to require the molding of attitudes and perceptions in addition to the impartation of knowledge. Continued research in this area would be beneficial to all current and future members of the U. S. military, and therefore, for the entire nation.

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Appendix A - Survey Instrument

Financial Resiliency of Fort Riley Service Members and Spouses

This research is a cooperative effort between Fort Riley and Kansas State University's Financial Therapy program and should take you **less than 10 minutes** to complete. Your answers are very important to us and will help us determine what financial needs exist for military families.

Please be assured that:

- Your participation is **voluntary**.
- Your responses will remain **strictly confidential**. An identification number will be assigned, but only used as an attachment to your original responses as a match to a follow-up questionnaire.
- Only members of the **Kansas State University** research team will have access to your data.
- You are **free to not answer** any question that you do not want and may stop at any time with **no penalty** or loss of benefit.
- **No risks** are anticipated from participating in this research study.

By returning this questionnaire you acknowledge your voluntary agreement to participate in this study, and you give consent for your results to be used in data analysis.

The Institutional Review Board has approved this research concerning the Involvement of Human Subjects at Kansas State University (Proposal #5602; will expire October, 13, 2011). For any questions, please contact Dr. Sonya Britt, Principal Research Investigator, 317 Justin Hall, Kansas State University, Manhattan, KS 66506, 785-532-3541 or Dr. Rick Scheidt, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, 785-532-3224.

Student ID Number:
Step 1: Please enter 1 if you are military or 2 if you a military Spouse in the first circle.
Step 2: Enter the last four numbers of your Social Security number (last four only).
Step 3: Enter the year you were born (ex. 1986).
Example: If I am a Soldier born in 1979 and my Social Security number ended with 7835, my student identification number would read: 178351979.

Please bubble the response that most closely matches YOU, not your spouse (leave blank if item does not apply to you).

1. A) Male B) Female
2. A) White (non-Hispanic) B) Hispanic C) African American D) Other
3. A) Single B) First Marriage C) Re-married D) Divorced E) Separated
4. A) Army B) Air Force C) Army Reserve D) Army National Guard E) Other
5. A) Combat Arms B) Support (Intel, Signal) C) Service & Support D) Aviation E) Other
6. A) E-1 or E-2 B) E-3 or E-4 C) E-5 or E-6 D) E-7 to O-2 E) O-3 and up
7. A)Less than High School B)High School/GED C)Some college D)Bachelor's Degree E)Graduate Degree
8. **How many financial dependents (excluding spouse) do you have?**
   A) 0 B) 1 C) 2 D) 3 E) 4 or more
9. **How many months have you been deployed to an area that qualifies for hazardous duty pay in the last 7 years?**
   A) 0 B) 1 to 12 C) 13 to 24 D) 25 to 48 E) 49 or more
10. **Do you plan on re-enlisting while in theater during this deployment?**
    A) Yes B) No C) Not applicable
11. **Do you plan on contributing to the Savings Deposit Program (SDP) while deployed?**
    A) Yes B) No C) I'm not familiar with SDP
12. **Do you plan on contributing to the Thrift Savings Plan (TSP) while deployed?**
    A) Yes B) No C) I'm not familiar with TSP
13. **If you do plan on contributing to TSP while deployed, how much do you plan on contributing while in theater?**
    A) $1 to $500 B) $501 to $2,000 C) $2,001 to $5,000 D) $5,001 to $10,000 E) $10,001 or more
14. **How much money do you have set aside in a savings account for emergencies?**
    A) $0 B) less than $500 C) $501 to $1,000 D) $1,001 to $2,000 E) $2,001 or more
15. **How much credit card debt do you have?**
    A) $0 B) $1 to $1,000 C) $1,001 to $2,500 D) $2,501 to $5,000 E) $5,001 or more
16. **How much in auto/motorcycle/truck/boat/ATV/personal watercraft loan(s) do you currently owe?**
    A) $0 or I don't own a vehicle B) $1 to $5,000 C) $5,001 to $10,000 D) $10,001 to $20,000 E) $20,001 or more
17. **In the past 12 months, have you used any of the following? (Mark all that apply)**
    A) payday loan B) rent to own C) auto title loan D) AER (Army Emergency Relief) loan E) Other type of loan
18. **Suppose you were to sell everything you own and pay all of your debts with the cash you currently have with no new loans. Would you be in debt, break even, or have something left over?**
    A) Be in serious debt B) Some debt C) Break even D) Have money left over E) Be set for retirement
19. **How satisfied are you with your current financial situation?**
    A) Very dissatisfied B) Dissatisfied C) Neutral D) Satisfied E) Very satisfied
20. **How would you rate your financial knowledge level compared to your friends?**
    A) Much lower B) Somewhat lower C) About equal D) Somewhat higher E) Much higher

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How often do you feel the following ways when thinking about your financial situation?	
21. I feel anxious about my financial situation.	A) Never B) Almost never C) Sometimes D) Almost always E) Always
22. I have difficulty sleeping because of my financial situation.	A) Never B) Almost never C) Sometimes D) Almost always E) Always
23. I have difficulty concentrating because of my financial situation.	A) Never B) Almost never C) Sometimes D) Almost always E) Always
24. I worry about my financial situation.	A) Never B) Almost never C) Sometimes D) Almost always E) Always

25. **Have you talked to any of the following military/service providers in the last 12 months about your personal financial situation?** **(Mark all that apply)**
A) ACS/Financial Readiness program B) Chain of command C) Military OneSource D) PFC (part of the MFLC program)
E) Other military personnel

26. **Have you talked to any of the following non-military sources about your personal financial situation in the past 12 months?** **(Mark all that apply)**
A) Family member/spouse B) Friend C) Financial advisor/planner D) Internet
E) Other

27. **In general, how would your best friend describe you as a risk taker?**
A) A real gambler B) Willing to take risks C) Middle of the road D) Cautious
E) A real risk avoider

How much do you know about the following?	
28. Interest rates, finance charges, and credit terms	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
29. Credit ratings and credit reports	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
30. Managing finances/budgeting	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
31. Investing money	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
32. Life insurance/SGLI/TSGLI	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
33. Will	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
34. Retirement accounts (i.e. TSP, IRA, 401k)	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot
35. Taxes	A) Nothing B) Very Little C) Some D) A Fair Amount E) A Lot

START OF NEW COLUMN ON SCANTRON

36. **Do you openly and honestly discuss your finances with your spouse?**
A) Yes B) No C) Not applicable

37. **Do you openly and honestly discuss your finances with your children?**
A) Yes B) No C) Not applicable

Please indicate how often you agree with the following statements:	
38. There is really no way I can solve some of my problems.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
39. I have a weekly or monthly budget that I follow.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
40. I have specific short-term, mid-term, or long-term written financial goals.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
41. I am being pushed around in my life.	**A) Almost Never B) Seldom C) Sometimes D) Often E)**

	Almost Always
42. I pay my credit card bills in full and avoid finance charges.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
43. I reach the maximum limit on my credit cards.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
44. There is little that I can do to change the important things in my life.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
45. I spend more money than I earn.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
46. I can do anything I set my mind to.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
47. I have difficulty paying bills because of not enough income.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
48. I am helpless in dealing with the problems of life.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
49. What happens to me in the future depends on me.	**A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always**
50. I have little control over the things that happen to me.	A) Almost Never B) Seldom C) Sometimes D) Often E) Almost Always

Thank you for participating in this research!

Your results will help us identify how to help build financial resiliency in service members!
Requests for a summary of the results may be sent to Dr. Sonya Britt at sbritt@k-state.edu or 317 Justin Hall, Manhattan, KS 66506.

Appendix B - Survey Instrument

EMERGENCY FUND AND CASH FLOW STUDY

This should take you **less than 15 minutes** to complete. Your answers are very important to us and will help us determine what financial needs exist for military families.

Please be assured that:

- Your participation is **voluntary**.
- Your responses will remain **strictly confidential**. An identification number will be assigned, but only used as an attachment to your original responses as a match to a follow-up questionnaire.
- Only members of the **Kansas State University** research team will have access to your data.
- You are **free to not answer** any question that you do not want and may stop at any time with **no penalty** or loss of benefit.
- **No risks** are anticipated from participating in this research study.

By returning this questionnaire you acknowledge your voluntary agreement to participate in this study, and you give consent for your results to be used in data analysis.

The Institutional Review Board has approved this research concerning the Involvement of Human Subjects at Kansas State University (Proposal #6284; will expire July 5, 2013). For any questions, please contact Dr. Sonya Britt, Principal Research Investigator, 317 Justin Hall, Kansas State University, Manhattan, KS 66506, 785-532-3541, Committee on Research Involving Human Subjects, 203 Fairchild Hall, Kansas State University, Manhattan, KS 66506, 785-532-3224.

Student ID Number:
Step 1: Enter the last four numbers of your Social Security number (last four only).
Step 2: Enter the year you were born (ex. 1986).
Example: If I am a Soldier born in 1979 and my Social Security number ended with 7835, my student identification number would read: 178351979.

Please bubble the response that most closely describes YOU.

38. A) Male B) Female

39. A) White (non-Hispanic) B) Hispanic C) African American D) Other

40. A) Single B) First Marriage C) Re-married D) Divorced/Separated E) Widowed

41. A) E-1 to E-4 B) E-5 or E-6 C) E-7 to E-9 D) O-1 or O-2 E) O-3 and up

42. A) Less than High School B) High School/GED C) Some College/2-year degree D) Bachelor's Degree E) Graduate Degree

43. How many financial dependents (excluding yourself and your spouse, if applicable) do you have?
A) 0 B) 1 C) 2 D) 3 E) 4 or more

44. How much money do you have set aside for unexpected expenses?
A) $0 B) less than $500 C) $501 to $1,000 D) $1,001 to $2,000 E) $2,001 or more

45. Thinking about what your current monthly expenses are, how long would your savings last if you had no income?
A) I have no savings B) 1 to 14 days C) 15 to 30 days D) More than 1 but less than 3 months E) 3 months or more

46. Please rate the difficulty of maintaining enough savings to cover 3 months' worth of your living expenses.
A) Extremely difficult B)Difficult C) Neither easy nor difficult D) Easy E) Extremely easy

47. If you wanted to, you could easily save up and maintain enough cash to cover 3 months' worth of your living expenses.
A) Extremely false B)False C) Neither true nor false D) True E) Extremely true

48. Suppose you were to sell everything you own and use the money to pay everything you owe. Would you be in debt, break even, or have something left over?
A) Be in serious debt B) Some debt C) Break even D) Have a little left over E) Have a lot left over

49. How would you rate your financial knowledge level compared to that of your friends?
A) Much lower B) Somewhat lower C) About equal D) Somewhat higher E) Much higher

How does a soldier getting into FINANCIAL TROUBLE SERIOUS ENOUGH TO REQUIRE A SUPERVISOR TO TAKE ACTION compare to these other situations?			
50. Getting a DUI is…	A) Worse	B) About the same	C) Not as bad
51. Failing to meet Army physical fitness standards is...	A) Worse	B) About the same	C) Not as bad
52. Getting injured off-duty in an activity where normal safety precautions were NOT taken is…	A) Worse	B) About the same	C) Not as bad
53. Being noticeably out of Army appearance standards (haircut, uniform, etc.) is…	A) Worse	B) About the same	C) Not as bad
54. Failing to follow the legal order or a superior is…	A) Worse	B) About the same	C) Not as bad
55. Lying to a superior is…	A) Worse	B) About the same	C) Not as bad
56. Letting down another soldier when it could have been avoided is…	A) Worse	B) About the same	C) Not as bad

Please indicate how much you agree or disagree with the following statements.	
57. I am aware of how much money I have at any given time	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
58. I am aware of how much debt I have at any given time	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
59. I know about what my total monthly expenses are	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
60. Most people in my unit have their finances in order	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
61. I am in better financial shape than others in my pay grade	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
62. The Army provides all the information I need to know to keep my personal finances in order	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
63. My leaders place a high priority on soldiers keeping their personal finances in good shape	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree
64. Most months, I have more money coming in than going out	A) Strongly Disagree B) Disagree C)Neither Agree or Disagree D)Agree E) Strongly agree

65. Please rate the difficulty of keeping your spending to less than or equal to what you make.
A) Extremely difficult B)Difficult C) Neither easy nor difficult D) Easy E) Extremely easy

66. If you wanted to, you could easily keeping your spending to equal or less than what you make.
A) Extremely false B)False C) Neither true nor false D) True E) Extremely true

For this section, you will fill in only one answer on EITHER question 23 or 24, and the other line will be <u>blank</u>. Choose the ONE statement you feel best describes you.

67. & 31. Which of the following statements best describes you?
30A) Just when I think I have a handle on my finances, something always happens that sets me back from my financial goals.
30B) I am disciplined at saving
30C) I am willing to take substantial financial risk for substantial gain written financial goals
30D) I frequently spend money when I do not plan to buy anything
30E) I pay off my credit cards at the end of every month.
31A) I always research and plan for a big purchase.
31B) I am not willing to take any financial risks, no matter what the gain.
31C) I enjoy financial planning.

32. Which of the following statements best describes you?
A) I think anyone can have a comfortable lifestyle, if they just plan and save.
B) I feel it is pointless to plan for the future because it is too far away to know what I will need.
C) If I just save some money each month, I will be fine in the future.
D) I think planning for the future takes too much time and effort.
E) I am more of a saver than an investor.

In the past 12 months, how often have the following happened to you?	
33. Received an overdue notice from a creditor	**A) Never B) Once C) More than once**
34. Paid one or more utility bills late	**A) Never B) Once C) More than once**
35. Paid a credit card bill late	**A) Never B) Once C) More than once**
36. Paid a late fee for paying a bill late	**A) Never B) Once C) More than once**
37. Received a call from a creditor about a past due bill	**A) Never B) Once C) More than once**
38. Received a call from a collection agency about an overdue bill	**A) Never B) Once C) More than once**
39. Reached the maximum limit on a credit card	**A) Never B) Once C) More than once**
40. Did not have enough to pay for a minor emergency	**A) Never B) Once C) More than once**
41. Could not afford to go out when desired	**A) Never B) Once C) More than once**
42. Could not afford to make vehicle payments	**A) Never B) Once C) More than once**
43. Overdrew a bank account	A) Never B) Once C) More than once

How frequently have you…	
44. Monitored your spending to see if it is within your income?	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
45. Monitored your spending to see if it is going for the things you need	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
46. Monitored your income to see if it is in line with what you expected	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
47. Thought of ways to increase your income to match your needs or wants	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
48. Tried to think of ways to decrease your expenses to match your income	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
49. Re-estimated your future expenses after finding they will exceed your income	**A) Never B) Rarely C) Sometimes D) Most of the time E) All the time**
50. Assessed whether the spending you'll have to do is less than or equal to your income	A) Never B) Rarely C) Sometimes D) Most of the time E) All the time

Thank you for participating in this research!

Your results will help us help you and your fellow soldiers.

Requests for a summary of the results may be sent to Dr. Sonya Britt at <u>sbritt@k-state.edu</u> or 317 Justin Hall, Manhattan, KS 66506.