

2007

Academic success and well-being of college students: Financial behaviors matter (TCAI Report)

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November 2007



ACADEMIC SUCCESS AND WELL-BEING OF COLLEGE STUDENTS: FINANCIAL BEHAVIORS MATTER



Take Charge America Institute for Consumer Financial Education and Research

John and Doris Norton School of Family and Consumer Sciences

College of Agriculture and Life Sciences

The University of Arizona



DR. MICHAEL STATEN
Director
Take Charge America
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FORWARD

I think the TCAI is on its way to becoming an extraordinary resource for Arizona and the nation. Consumers today face a tremendous array of financial products and choices. But lately, not a day goes by without a headline story that highlights the perils for those who make uninformed choices when it comes to borrowing, saving and investing. TCAI has already established an aggressive set of outreach programs. I'm delighted to be a part of the University's effort to build this into a nationally recognized intellectual hub for developing effective financial education programs and policy.

I wish also to acknowledge Jing Xiao, Ph.D (former Director of TCAI) and the authors of this very important major research program. Based on this study, Dr. Soyeon Shim will lead a benchmark longitudinal study, APlus (Arizona Pathways to Life Success for University Students) begins with the UA freshman of 2007. The priority of this benchmark longitudinal study is to help integrate financial literacy principles into the UA's three-pronged mission of Education, Research and Outreach.

MISSION

The mission of the Take Charge America Institute for Consumer Financial Education and Research at The University of Arizona is to improve consumer financial well-being through our research and outreach programs.

FOR MORE INFORMATION about how the Take Charge America Institute for Consumer Financial Education and Research can help you or to order additional copies of this publication, contact Soyeon Shim, Ph.D., Director and Professor, Norton School of Family and Consumer Sciences at shim@ag.arizona.edu

ACKNOWLEDGEMENTS

The authors would like to thank John Nametz, director of the Office of Student Financial Aid at The University of Arizona, and his colleagues for partnering with us to conduct this study. We also thank Robert Lanza for creating our survey Web site. The following graduate research associates provided excellent research assistance: Jing Sun, Chuanyi Tang, and Jada Torres. This study is co-sponsored by the Take Charge America Institute for Consumer Financial Education and Research and the Office of Student Financial Aid at The University of Arizona.

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EXECUTIVE SUMMARY

College students are at a pivotal time in their lives as they face financial independence and responsible decision-making. In moving from dependence to independence, they will chart a course with far-reaching consequences for their future happiness and security. The methods by which college students form desirable financial habits has been largely shadowed in supposition. Because the process is not yet understood, but is of tantamount importance to the future of young people, further study is imperative. Universities have a unique opportunity to influence the development of sound fiscal practices because they combine a pivotal time frame, an educational setting, and a population with newly emerging responsibility for their financial affairs. Further, young adults who are financially responsible as college students are more likely to become well-rounded, happier, and more successful alumni.

The following report examines the financial behavior of undergraduate students at The University of Arizona. Specifically, the study examines cash management, credit management, savings, and risky credit use. We are interested in what elements influence financial behavior, and whether responsible financial habits affect students' quality of life, including financial satisfaction, physical and mental health, academic satisfaction and performance, and life satisfaction in general. A total of 781 undergraduate students responded to our online survey.

In short, we found as predicted, that sound financial decisions and practices are undoubtedly linked to a better life, in a variety of ways. The importance, then, of developing healthy financial habits cannot be overstated. As previously stated, colleges are in a unique position to assist this process, and in fact, we believe they have a responsibility to students as part of an overall educational framework.

Specifically, our study found:

- Undergraduate students manage cash better than credit and savings.
- Students who have a positive attitude about cash management, find it easy to do, and feel a sense of accomplishment do better with cash management.
- Upper-class students, particularly seniors, demonstrate a surprisingly more careless attitude with regard to credit management. Being a first-generation college student, being financially independent, having a higher personal

income, taking fewer credit hours, and living off campus also result in a riskier attitude toward credit use. Negative attitudes, spending less time on studies and more time on the job, and money management also seem to lead to unwise credit use.

- When it comes to saving money, upper-class students do worse than their lower division counterparts. Others who demonstrate poor saving habits are non-business majors, off-campus students, and those receiving financial aid. Again, students with negative attitudes and less financial knowledge are less likely to save money.
- Not surprisingly, our study shows that parents are important role models in encouraging responsible financial behavior. Parental support and advice are key, as are having parents who are married, more highly educated and who own a home.
- The support of college peers is also important, influencing students to develop good financial behaviors.
- In addition to its own rewards, responsible financial behavior leads to a better life. Performing desirable financial behaviors is associated with greater financial satisfaction, better physical and mental health, and higher grades.

These findings have important implications for financial professionals, educators, campus administrators, and policymakers concerned about the well-being of college students. Promoting positive financial habits, according to this report, is likely to improve the overall well-being of college students, in addition to helping them meet their academic goals. Credit management and savings courses may be needed for undergraduates, especially upper-division students (who have worse financial behaviors than their lower-division counterparts). Timing is critical because seniors will soon be entering the job market and facing the financial decisions of independent living.

Because it is a key component of students' financial development, parental involvement should be supported and encouraged. In addition, peer education should be fostered, with colleges creating opportunities for students to learn from each other (especially in the areas of credit and savings). Special attention should be paid to financially at-risk students who are apt to engage in risky credit behaviors, with programs designed specifically for them.

INTRODUCTION

Young people age 18-25 are in a life-cycle stage distinct from other periods of development (Petersen & Leffert, 1995), which is labeled emerging adulthood (Arnett, 2000). In the U.S., about 60 percent of emerging adults are college students. A student's first year in college marks the beginning of this developmental period. It is characterized by major life-changing experiences as students make the transition from adolescence to adulthood. In the midst of these transitional life events, money—and, in particular, the credit system they have gained access to—unarguably plays a central role in shaping the attitudes they form and behaviors they adopt, not only toward financial management but also toward life in general



There can be little doubt that credit cards are an essential component of today's consumer lifestyles in that they provide both utilitarian (e.g., convenience and purchasing power) and hedonic (e.g., life status, lifestyles) benefits. However, if misused or abused, they can also have devastating effects on consumers' overall

well-being (Bernthal, Crockett, & Rose, 2005). One group that may be particularly vulnerable to the potential pitfalls of credit use is college students. Reports indicate that 76 percent of college students have at least one credit card, and 43 percent have reported holding four or more credit cards (Nellie Mae, 2005).

The negative consequences of irresponsible financial behavior, especially for young adults who are financially at risk, can impede academic success and threaten mental and physical health (Lyons, 2007a, 2007b). Economic psychology studies, in general, show that higher financial stress is associated with higher levels of psychological and physical distress (MacFadyen, MacFadyen, & Prince, 1996; Lyons & Yilmazer, 2005). In the long run, adverse financial outcomes can also negatively affect interpersonal and familial relationships, and hence, an individual's success in life (Fisher & Lyons, 2006). Yet, we still know very little about the process by which young adults acquire financial skills and literacy during the critical transitional period of emerging adulthood, and how these skills, (or lack thereof) influence well-being more generally, both in the short- and long-term.

> Purpose of the Study

The purpose of this study was to understand the financial behaviors of undergraduate UA students. More specifically, we are interested in studying four categories of financial behaviors: cash management, credit management, savings, and risky credit use. We want to examine factors that influence those four financial behaviors, as well as whether or not performing positive financial behaviors matters in various aspects of students' quality of life including financial satisfaction, physical and mental health, academic satisfaction and performance, and life satisfaction in general.

This report is organized as follows. We first review previous studies on the financial behaviors of college students and present a conceptual framework. Then the objectives, methodology, and findings of the study are presented. Finally, we summarize major findings and discuss their implications for financial professionals, educators, campus administrators, and policymakers interested in this age group.

> Previous Studies on Financial Behaviors of College Students

As the use of credit cards has proliferated on college campuses (U. S. General Accountability Office, 2001; Manning 2000; Nellie Mae, 2005; Education Resources Institute & The Institute for Higher Education Policy, 1998), researchers in disciplines such as economics, sociology, psychology and higher education administration have become increasingly interested in the financial conduct of college students. Some researchers have focused on college students' attitudes about, and behavior with, money in general (Danes & Hira, 1987, Fan & Xiao, 1998; Markovich & DeVaney, 1997, Masuo, Malroutu, Hanashiro, & Kim, 2004; Rindfleisch, Burroughs, & Denton, 1997; Lyons, Neelakantan, & Scherpf, 2007). Others have specifically focused on the ways students use credit cards and the attitudes they have toward them (Armstrong & Craven, 1993; Xiao, Noring, & Anderson, 1995, 1997; Education Resources Institute and the Institute for Higher Education Policy, 1998; Hayhoe, Leach, & Turner, 1999; Hayhoe, Leach, Turner, Bruin, & Lawrence, 2000; Joo, Grable, & Bagwell, 2001; U. S. General Accountability Office, 2001; Hayhoe, 2002; Lyons, 2004, 2007a; Staten and Barron, 2002; Baum and O'Malley, 2003). In particular, earlier studies focused on factors that influence credit card selection (Kara, Kaynak, & Kucukemirouglu, 1994) and relationships between student characteristics and the tripartite (affective, cognitive and behavioral) components of their attitudes (Xiao et al., 1995, 1997).

A few researchers have also attempted to develop a causal model that can predict a college student's attitudes and behavioral tendencies when acquiring a new credit card (Kidwell & Turrisi, 2000) and also describe the role that money attitudes and credit card use plays in the development of compulsive buying (Roberts, 1998; Roberts & Jones, 2001). Also, a group of researchers (Pinto, Parente, & Palmer, 2001a; 2001b) conducted a study to determine whether school solicitation policies or student academic performance caused differences in the ways students used credit cards. They found no evidence of any differences.

With the recent increase in the number of reports regarding college students' misuse or overuse of credit cards, researchers have begun to investigate the personal factors associated with credit card use, specifically the number of credit cards, on average, that a student possesses, as well as the extent to which the average student typically carries a credit card balance (Hayhoe et al., 1999; Hayhoe, et al., 2000; Hayhoe, 2002, Hayhoe, Leach, & Allen, 2005). Also studied is how different promotional mechanisms used by credit card firms influence students' account balance and delinquency status (Staten &

Barron, 2002). Lyons (2004, 2007a) reported a demographic profile of college students (female, Black, and Hispanic) who were more likely to be financially at risk. Researchers also examined the ways in which college students' credit card attitudes and behaviors were related to psychological and social factors such as locus of control (Joo et al., 2003), impulsivity, life satisfaction, and stress (Norvilitis & Maria, 2002; Norvilitis, Szablicki, & Wilson, 2003), parental socialization (Palmer et al., 2001; Lawrence et al., 2005; Lawrence et al., 2006; Lyons et al., 2007), and materialism (Pinto et al., 2000).

> Theoretical Framework

We identified several theories that are relevant to the purpose of our study: the theory of human development (Arnett, 2000; Baltes, 1987; Havighurst, 1972; Shanahan & Hood, 1999), consumer socialization (John, 1999; Moschis, 1987; Ward, 1974), and planned behavior (Ajzen, 1991; Ajzen & Fishbein, 1980). Using these theories as a foundation, we have developed a conceptual framework for analyzing the formation of financial behaviors and the impact that these behaviors have on the well-being of young adults. Integrating these theories, we propose that socialization processes—family, peers, and financial education—combined with demographic factors influence a young adult's attitudes, values, and knowledge about finances. We further hypothesize that these attitudes and values, along with subjective norms and perceived control, influence an individual's behavioral intentions and financial identity, and in turn, influence their actual financial behavior. In our model, we posit that financial behaviors ultimately affect one's overall well-being, not only with respect to his or her personal finances but also with respect to physical and mental health, school achievements, and life satisfaction. For a more detailed discussion of this conceptual model, see Xiao, Shim, Barber, and Lyons, (2006).

RESEARCH OBJECTIVES

The research objectives of this study are as follows:

1. To identify potential factors that affect the formation of financial behaviors among college students;
2. To examine potential effects of financial behaviors on the well-being of college students.

> Survey Methodology

In spring 2006, a survey was developed and pre-tested based on both a literature review and information gathered from college students, using focus group techniques. Upon receiving the university research office's Internal Review Board (IRB) approval, the survey was finalized in the summer of 2006 and put online. In fall 2006, The University of Arizona's Office of Student Financial Aid, in conjunction with the authors of this report, administered the survey.

In November 2006, two consecutive random samples of students (4,000 each) were invited to participate in the online survey via an e-mail invitation. For each random sampling, one follow-up reminder was sent. Overall, 1,197 students responded to the survey, with a return rate of 15 percent. Through a random drawing, thirty-five scholarships ranging from \$100-\$500 were given as incentives for participation. Among the 1,197 students who responded, 976 completed the survey. Of these, 11 percent were graduate students and 89 percent were undergraduate students. We conducted Analyses of Variances (ANOVA) on major demographic variables to see if there were any differences between the two samples. The only difference was related to student status. The first sample had more graduate students than the second (106 graduate students in the first sample compared to 5 in the second). In this report, we focus on the financial behaviors of 781 undergraduate students. The following is a descriptive profile of this sub-sample.



> **Student Demographics**

Table 1 presents descriptive statistics of the sample of undergraduate students. The sample has even distribution of the three upper classes with a slightly higher proportion of first-year students. Most of them are female, white, single, non-business majors, non-transfer students, and in-state students. The age distribution is slightly skewed towards the age 18 group. Hispanic and Asian students are overrepresented while Black students are underrepresented, which is typical in southwestern states. The distribution of GPA is skewed toward the high end, while noticeably 20 percent of students report

“GPA is not available,” possibly because it is their first semester in college. Most of the respondents are registered for 13-15 credit hours and are receiving financial aid. The majority of respondents live in rented apartments or houses. Most of the respondents are not first-generation college students, nor are they financially independent. Forty percent of them do not have their own source of income. The parents of the majority of the respondents own their own homes. The distribution of parental income is even from the low to the high end, while 23 percent of students are not sure about their parents’ income levels.

Table 1. Descriptive Statistics of the Sample (N=781)

CLASS		GPA		PARENT(S) ANNUAL INCOME	
Freshman	36%	Lower than 2.5	7	Less than \$25,000	8
Sophomore	20	2.6-2.9	11	\$25,000-\$49,999	19
Junior	21	3.0-3.5	33	\$50,000-\$74,999	18
Senior	23	3.6-4.0	29	\$75,000-\$99,999	13
		No GPA available	20	\$100,000 or more	19
				Not sure	23
MAJOR		REGISTERED CREDIT HOURS		PARENTS/GUARDIANS OWN OR RENT RESIDENCE	
Business	15	12 hours or fewer	23	Own	83
Non-business	85	13-15	49	Rent	11
		16 or more	28	Other	3
TRANSFER STUDENT		FIRST GENERATION STUDENT		Don't know	3
Yes	16	Yes	20	RECEIVING FINANCIAL AID THIS ACADEMIC YEAR	
No	84	No	80	Yes	71
AGE		FINANCIALLY INDEPENDENT		No	29
18	29	Yes	22	RESIDENCE DURING SCHOOL YEAR	
19	20	No	78	Residential Hall	30
20	19	RESIDENTIAL STATUS		Fraternity/Sorority	3
21	18	In-state student	77	Apartment (rent)	33
22-24	14	Out-state/International student	23	House (rent)	18
GENDER		AVERAGE MONTHLY INCOME FROM WORK		House (own)	3
Male	35	\$0 (not employed)	40	Live at home with parents	13
Female	65	\$1-\$249	16	RESIDENCE DURING SCHOOL YEAR	
PRIMARY ETHNIC BACKGROUND		\$250-\$499	21	Residential Hall	30
African American/Black	3	\$500-\$749	14	Fraternity/Sorority	3
Asian	9	\$750-\$999	4	Apartment (rent)	33
Hispanic/Latino	18	\$1,000-\$1,999	4	House (rent)	18
Native American	2	\$2,000-\$2,999	1	House (own)	3
White	64	RESIDENTIAL STATUS		Live at home with parents	13
Other	4	In-state student	77	RECEIVING FINANCIAL AID THIS ACADEMIC YEAR	
MARITAL STATUS		Out-state/International student	23	Yes	71
Single without children	92	AVERAGE MONTHLY INCOME FROM WORK		No	29
Other	8	\$0 (not employed)	40	RESIDENCE DURING SCHOOL YEAR	
		\$1-\$249	16	Residential Hall	30
		\$250-\$499	21	Fraternity/Sorority	3
		\$500-\$749	14	Apartment (rent)	33
		\$750-\$999	4	House (rent)	18
		\$1,000-\$1,999	4	House (own)	3
		\$2,000-\$2,999	1	Live at home with parents	13

We compared the student characteristics and credit behaviors from our study with those in one national study (Nellie Mae, 2005) and one regional study (Lyons, 2007a). Studies from both Nellie Mae and Lyons focused on credit card behavior, but ours has a broader coverage, with a focus not only on credit but also on other financial behavior. Our sample used for the comparison purpose is restricted to those who are undergraduate students age 24 or younger. [Table 2](#) and [3](#) present comparisons of major demographic and credit behavior variables, respectively.

There are several noticeable differences between these studies. Compared to studies by Nellie Mae and Lyons, the sample of our study has more first year students, younger, female, and Hispanic students. About 20 percent of our sample report “GPA is not available” while all students in Lyons’ study reported GPAs. In terms of credit card behavior, compared to Lyons’ sample, students who have at least one credit card in our sample have a fewer number of credit cards, are less likely to be late in debt repayments, and are more likely not to pay off a credit card balance.

Table 2. Comparisons of Three Studies: Demographic Variables

	NELLIE MAE (2005)	LYONS (2007A)	THIS STUDY (2007)
CLASS			
Freshman	8%	23.6%	35.72%
Sophomore	31%	22.0%	19.97%
Juniors	30%	25.0%	21.13%
Senior	30%	29.4%	23.18%
AGE			
18	5%		28.88%
19	23%		20.41%
20	21%		18.49%
21	25.5%		18.10%
22	12%		8.46%
23	10%	<25: 94.9%	3.72%
24	3.5%	>25: 5.1%	1.93%
GENDER			
Female		58.8%	64.92%
Male		41.2%	35.08%
RACE/ETHNICITY			
White		79.3%	64.28%
Black		4.8%	2.82%
Asian		9.0%	9.48%
Hispanic		4.1%	17.80%
Other		2.8%	5.63%
MARRIED			
		3.9%	2.68%
GPA			
3.6-4.0		28.5%	28.55%
3.0-3.5		42.6%	33.29%
2.0-2.9		27.3%	16.50%
<2.0		1.6%	1.15%
No GPA			20.36%
FINANCIALLY INDEPENDENT			
		19.5%	22.15%
WORKING HOURS			
0	5%	43.6%	38.7%
1-10	12%	19.4%	13.3%
11-20	34%	25.1%	30.1%
>20	30.5%	11.9%	17.9%
work only during summer/vacations	18.5%		
MONTHLY INCOME			
0	42.4%	39.93%	
\$1-\$249	19.5%	15.49%	
\$250-\$499	20.9%	21.25%	
\$500-\$749	8.6%	14.47%	
\$750-\$999	3.7%	4.35%	
>=\$1000	4.9%	4.49%	

Table 3. Comparisons of Three Studies: Credit Card Behavior

	NELLIE MAE (2005)	LYONS (2007A)	THIS STUDY (2006)
HAVE CREDIT CARD	76%	72.4%	70.0%
NUMBER OF CREDIT CARDS			
>=1	76%	72.4%	70.04%
>=4	43%	18.9%	8.54%
average	4.09		1.77
WHEN GOT FIRST CARD			
Before college	23%	49.5%	47.35%
As freshman	43%	35.9%	35.83%
After first year	33%	14.4%	16.82%
CREDIT CARD DEBT			
>=\$1,000	39%	21.7%	20.84%
>=\$3,000	23%	10.4%	9.71%
LATE ON PAYMENT		8.6%	4.75%
MAX OUT THE LIMIT		21.1%	20.48%
DON'T PAYOFF BALANCE		33.1%	39.31%

> Financial Behaviors

In this study, the students are asked how frequently they perform 10 financial behaviors, where six are about cash management, one about credit management, and three related to saving. All were developed based on previous studies (Hilgert, Hogarth, & Beverly 2003; Xiao, Sorhaindo, & Garman, 2006). The question is worded as “Indicate how often you have engaged in the following activities within the past six months: never, seldom, sometime, often, always, and not applicable.” Most students indicated that they “always” or “often” perform desirable cash management behaviors but are less likely to do

so in the areas of credit management and saving. In addition, a significant percent of students answered “never” or “not applicable” concerning desirable credit management and saving behaviors. For example, 43 percent reported “never” or “not applicable” to paying off credit card debts and 67 percent reported “never” or “not applicable” to contributing to savings/investing accounts. In the category of cash management, 14-18 percent of students do not perform bill-paying related behaviors. Figure 1 presents frequencies of “always/often” performed behaviors based on the report of the sample. Table 4 presents frequencies of the ten financial behaviors.

Figure 1: Financial Behaviors Always/Often Performed

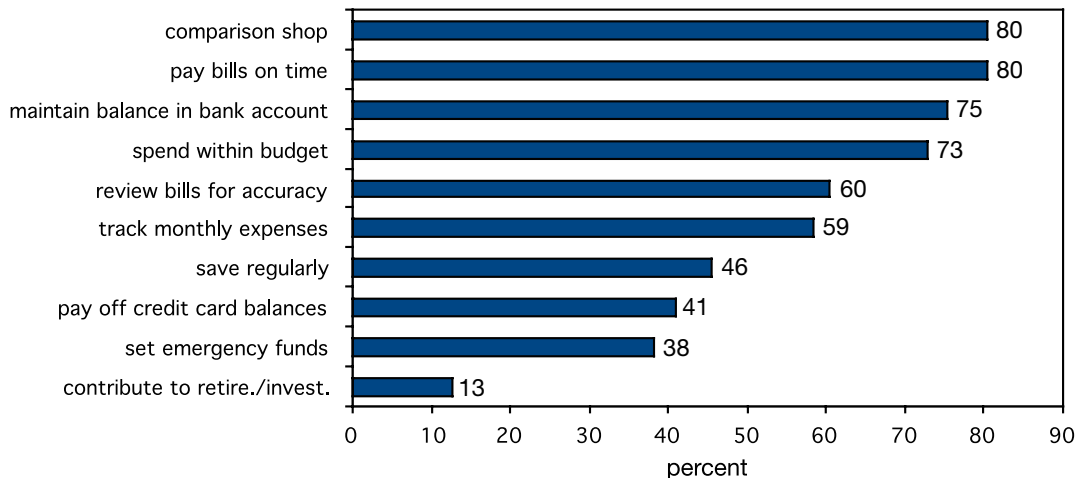


Table 4. Frequencies of 10 Financial Behaviors (%)

	NA/NEVER	SELDOM/SOMETIME	OFTEN/ALWAYS
Pay bills on time	14	6	80
Comparison shop	5	15	80
Maintain balance in bank account	2	23	75
Spend within budget	4	23	73
Review bills for accuracy	18	22	60
Track monthly expenses	6	35	59
Pay off credit card balances	43	16	41
Save regularly	13	41	46
Set emergency funds	20	42	38
Contribute to retire./invest.	67	20	13

> Potential Factors Associated with Financial Behaviors

In the following section, we focus on potential factors that may be associated with three financial behaviors, namely cash management, credit management, and saving. The cash management behavior is measured by adding the scores of the six cash management behaviors and then dividing the

total score by six. The saving behavior is measured by adding the scores of the three saving behaviors and then dividing the total score by three. The original behavior of paying in full a credit card balance is used to measure the credit management behavior. We also present potential factors associated with risky credit card behavior in a separate section.

> Cash Management

To examine potential factors that affect cash management, we excluded students who reported “not applicable” in any of the six cash management questions. The resulting sample size is 624. Based on results of ANOVA, gender, race/ethnicity, credit hour, perceived control, value, financial knowledge, financial education, parental advice, parental approval, parental approval compliance, and peer approval are associated with cash management habits. Students with the following characteristics are more likely to have desirable cash management practices:

- > Females (vs. males)
- > Whites (vs. Hispanics)
- > Enrolling in more credit hours
- > Higher intention to perform the behavior
- > More favorable attitude toward the behavior
- > Perceiving more control over the behavior
- > Higher level of the self-actualization value
- > Higher self-reported financial knowledge
- > Receiving more financial education
- > More parental financial advice
- > Higher level of parental approval of the behavior
- > Higher level of following parental advice
- > Higher level of peer approval of the behavior

Because the above findings are based on a sub-sample of the undergraduate students, we would like to explore the same research question by using the full undergraduate student sample. According to the theory of planned behavior, behavior intention is the major predictor of the behavior. We conducted ANOVA between the behavior intention regarding cash management and potential influential variables available from the survey. All students provided answers for the behavior intention, and the sample size used in the analyses is 781.

Comparing variables that show differences in the behavior intention and the actual behavior, we have the following findings. First, factors that show differences in both the

behavior and the intention include: perceived control, self-actualization value, parental advice, parental approval, following parental advice, and peer approval. Second, several factors show differences in only the behavior. Females are more likely than males and whites are more likely than Hispanics to perform the behavior. Students enrolling in more credit hours or receiving more financial education are more likely to engage in the behavior. Third, several factors show differences in only the behavioral intention. Students who are not first-generation college students, who use more time for school work and money management, and whose parents own homes are more likely to report the intention to have sound cash management habits.

> Credit management

Using the same approach, we conducted ANOVA on the credit management behavior and its behavior intention against potential influential variables. Thirty-six percent of the sample reported “not applicable” for this question and are excluded in the analyses. The sample size is 503 in the credit management behavior analyses. The characteristics of students who are more likely to perform the positive credit management behavior are listed below

- Male (vs. female)
- Asian, white (vs. Hispanic)
- Lower school class standing
- Non-first generation college student
- Those who are not financially independent
- Lower student income
- More credit hours
- Higher intention to perform the behavior
- More favorable attitude toward the behavior
- Higher level of perceived control
- Longer planning horizon
- More time spent on school work
- Less time spent on paid work
- Less time spent on financial management
- Living on campus (vs. off campus)
- More parental financial advice
- Higher level of parental approval of the behavior
- Higher level of following parental advice
- Married parents
- Higher parental income
- Parents being home owners
- Higher level of father's education
- Higher level of mother's education
- Higher level of peer approval of the behavior

Figure 2 presents the negative association between the intensity of performing the behavior and the academic class standing. Figure 3 presents the negative association between the behavior intention and academic class standing. It seems that the higher

the academic class standing, the less likely the students perform or intend to perform the positive credit behavior, which should be a concern to administrators and educators.

Figure 2: Credit Management Behavior

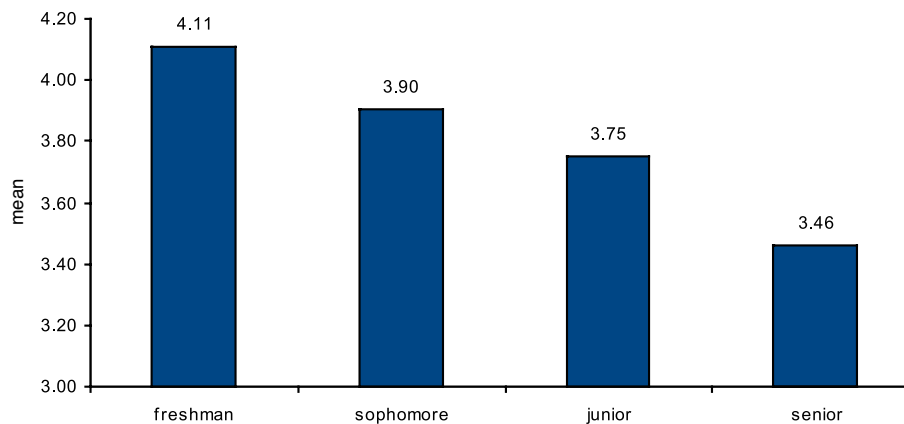
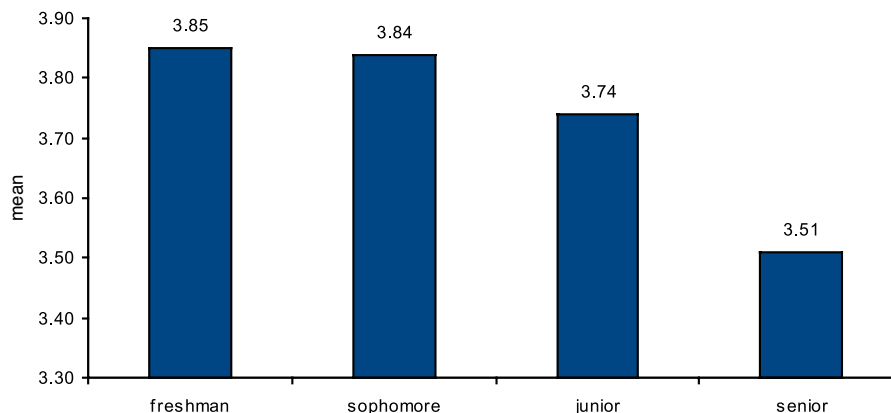


Figure 3: Credit Management Intention



Variables associated with the behavior intention are very similar to those associated with the behavior, with only two exceptions: 1) Gender does not show an association with the behavior intention; and 2) Students who do not receive financial aid are more likely to express the intention to perform the behavior, but this variable is not associated with the behavior.

In comparing potential influential variables of the cash management behaviors and the behavior intention, we found more variables show associations with the credit management behavior, which implies that this age group may be in the process of developing the credit management behavior.

> Saving Behavior

The same approaches are also used to explore the potential influencers of saving behaviors. After excluding students who report “not applicable” to any of the three saving behaviors, the resulting sample size in the analyses is 643. Generally, the respondents reported they are less likely to perform saving behaviors. On a scale of 1 5 (1 never to 5 always), the average score for cash management behaviors is 4.14, credit management is 3.78, while saving is only 2.67. Findings of ANOVA indicate that characteristics of students who are more likely to perform saving behaviors are as follows:

- Lower academic class standing
- Business major (vs. other majors)

- Transfer students
- Not a first-generation college student
- Higher intention to perform the behavior
- More favorable attitude toward the behavior
- Higher level of perceived control of the behavior
- Longer planning horizon
- Longer time spent on school work
- Longer time spent on paid work
- Living on campus
- More parental financial advice
- Higher level of parental approval of the behavior
- Higher level of following parental advice
- Married parents
- Parents being home owners
- Higher level of father's education
- Higher level of mother's education
- Higher level of peer approval of the behavior

Figures 4 and 5 show a pattern similar to Figures 2 and 3. When students move up to a higher academic class, they are less likely to perform or intend to perform positive saving behaviors, which indicates a need for financial education for these students. This may be especially important for seniors who will face real-life, long-term saving decisions as soon as they graduate and accept their first formal jobs.

Figure 4: Saving Behavior by Class

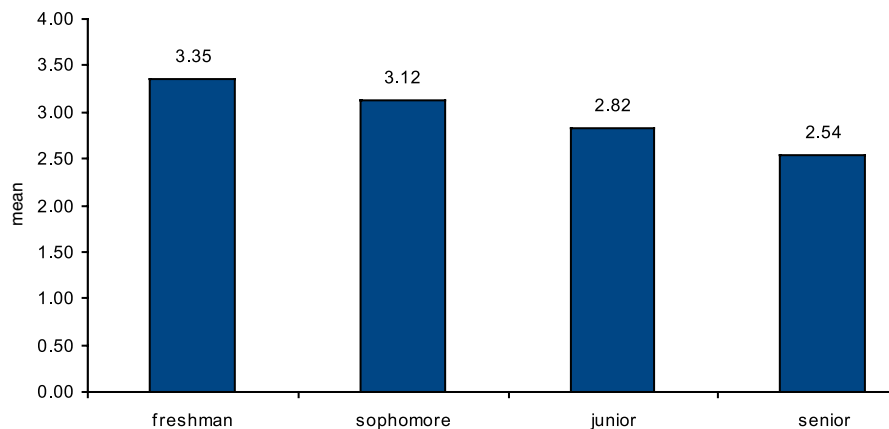
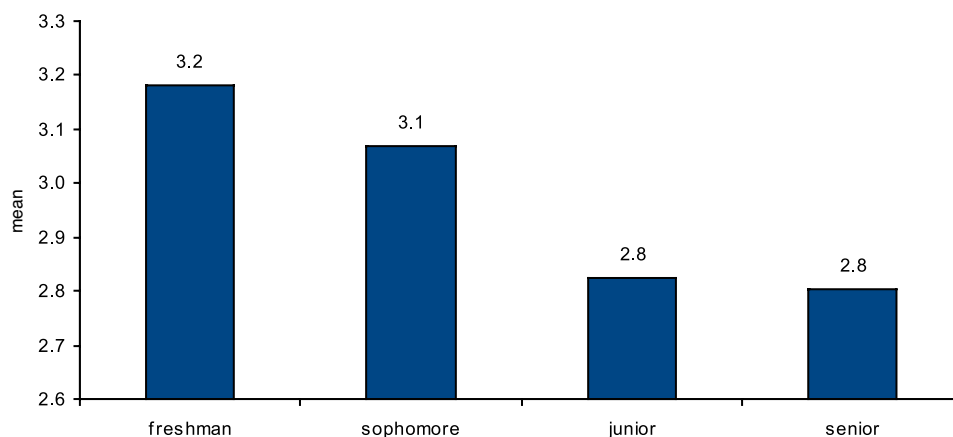


Figure 5: Saving Intention by Class



Potential influential factors relating to the behavior intention of saving are similar to those of the saving behavior, with the following exceptions: 1) Two variables, first-generation college student status and parental marital status show association with the saving behavior but do not show associations with the saving behavior intention; 2) Two variables do not show associations with the saving behavior but show associations with the saving behavior intention. A higher level of risk-taking and less time spent on financial management are associated with a higher level of intention to perform the saving behavior; and 3) One variable shows opposite effects. Compared to others, transfer students are more likely to perform the saving behavior but less likely to express the intention to perform the behavior.

> Risky Credit Behaviors

Risky credit behaviors are defined by six indicators: having three or more credit cards (9 percent of the sample), using credit cards frequently (a few times a day or a week) (32 percent), having credit card debts (68 percent), being late in credit card debt payments (5 percent), never or sometimes not paying in full the credit card balance (39 percent), and almost always or sometimes maxing out the credit card limit (20 percent). Based on Chi-square tests, the following variables show associations with four or more risky behaviors:

Academic class standing has positive associations with six risky behaviors except for the late payment behavior. Students with higher academic class standing, especially seniors, are more likely to engage in these practices. [Figures 6-11](#) present these patterns, which should concern university administrators and educators.

Figure 6: Having Three or More Credit Cards

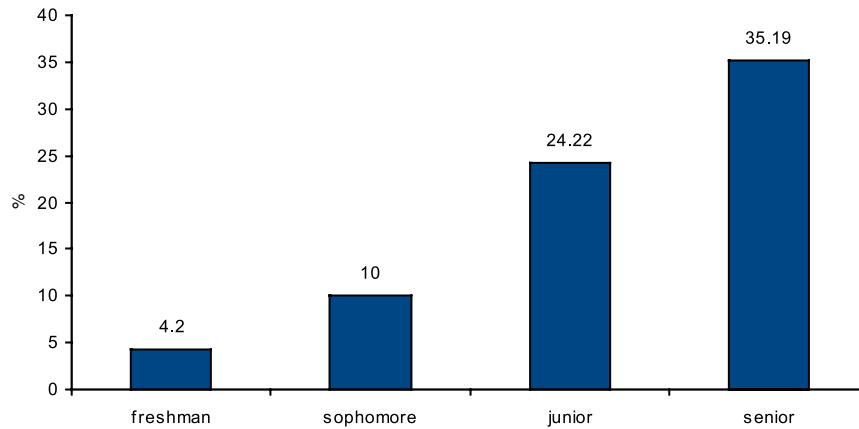


Figure 7: Using Credit Cards Almost Daily or a Few Times a Week

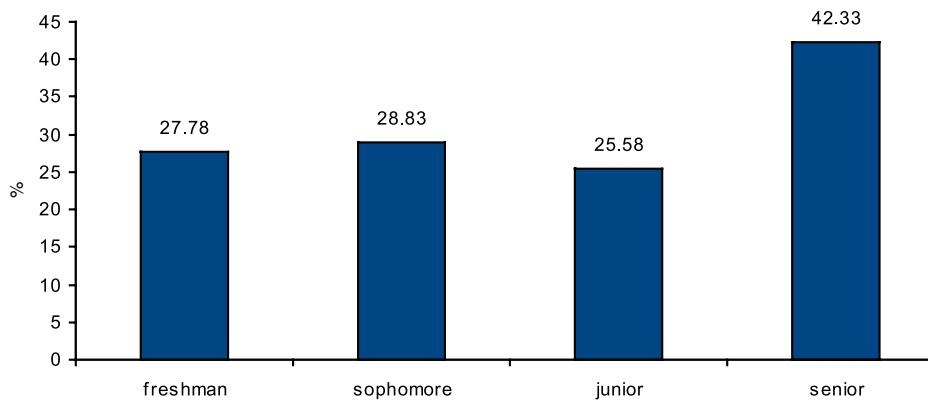


Figure 8: Having Credit Card Debts

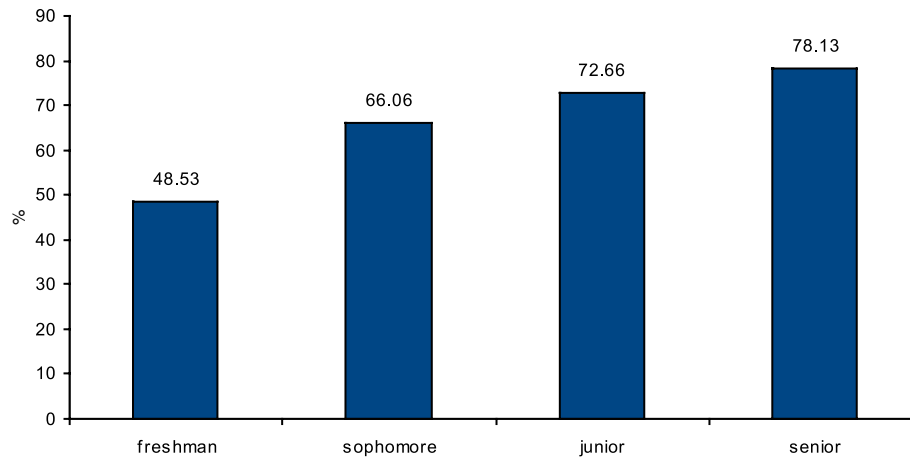


Figure 9: Being Late on Credit Card Payment by 2 or More Months

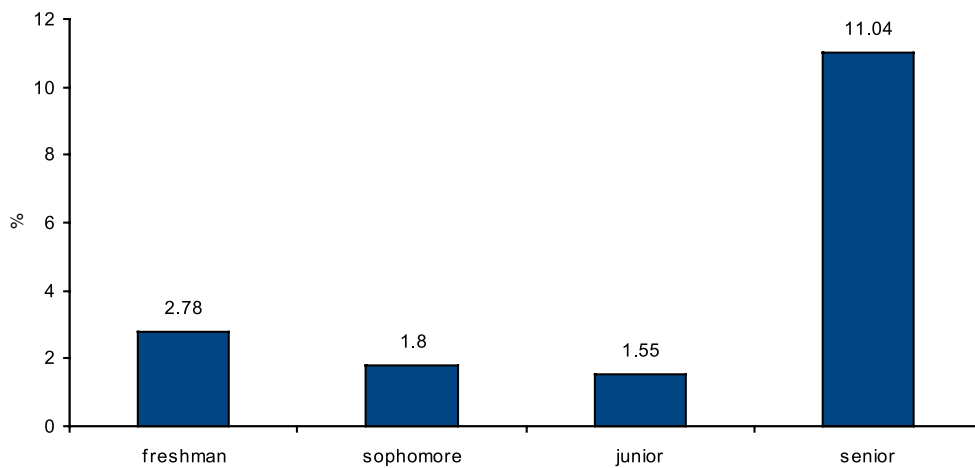


Figure 10: Never or Sometimes Paying Off Credit Card Balance

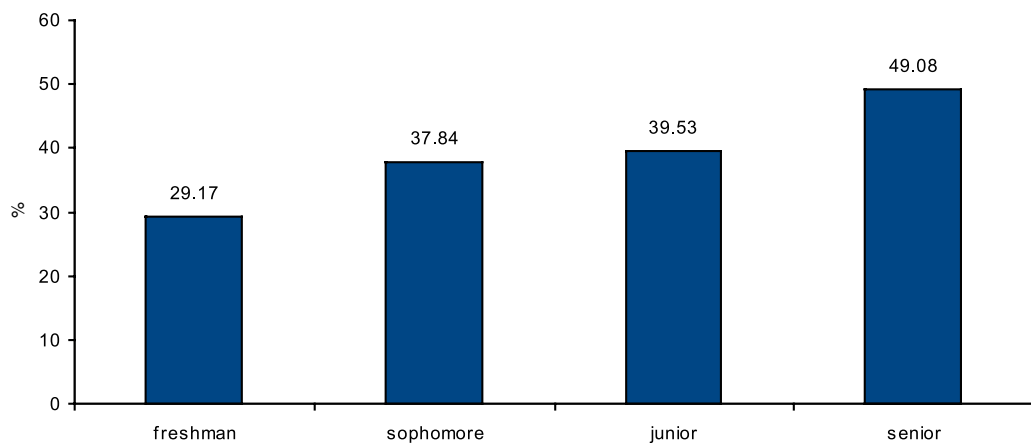
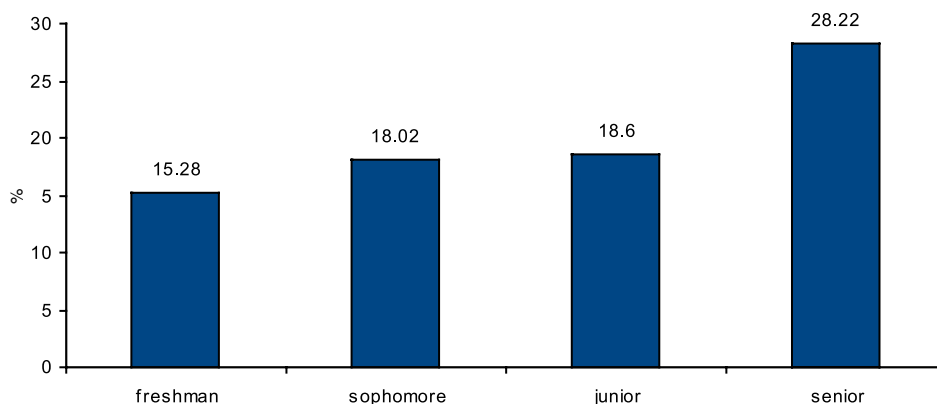


Figure 11: Always or Sometimes to Max Out Credit Card Limit



Holding educational loans is associated with all risky behaviors. It is negatively associated with only one behavior (frequent use of credit cards) but positively associated with the other five risky behaviors.

Holding other loans is positively associated with four risky behaviors: having credit card debts, being late in payments, not paying the balance in full, and maxing the limit.

Receiving financial aid is negatively associated with one behavior: frequent use of credit cards, while positively associated with four behaviors: having credit card debts, being late in payments, not paying the balance in full, and maxing out the limit.

Student income shows positive associations with five risky behaviors. Higher student income is associated with having three or more credit cards, having credit card debts, being late in payments, not paying the balance in full, and maxing out the credit card limit. The finding suggests that student income may be an indicator of financial need.

Living off campus (vs. living on campus) is positively associated with five behaviors: having three or more credit cards, having credit card debts, being late in payments, not paying the balance in full, and maxing out the limit.

Race/Ethnicity shows associations with four risky behaviors. Asians are most likely and Hispanics least likely to use credit cards frequently. Other races are most likely and whites least likely to have credit card debts. Hispanics are most likely and Asians least likely not to pay credit card balances in full and to max out the credit card limit.

First-generation college students are more likely than other students to engage in four risky behaviors: having credit card debts, being late in payments, not paying balances in full, and maxing out the limit. However, they are less likely to use credit cards frequently.

Financially independent students are more likely to engage in four risky behaviors: having three or more credit cards, having credit card debts, being late in payments, and not paying the balance in full.

Time spent for financial management is positively associated with four risky behaviors: having credit card debts, being late in payments, not paying the balance in full, and maxing out the limit. The finding implies that time spent on financial management seems to be an indicator of financial difficulties.

Year the first credit card is obtained is associated with four risky behaviors. The earlier a student gets his first credit card, the less frequently he will use the credit card but the more likely he will have credit card debts. Students who report getting their first credit cards in their first year in college are more likely to be late in payments and not to pay the balance in full.

Perceived controls of performing positive cash, credit, and saving activities are associated with four risky behaviors: having credit card debts, being late in payments, not paying the balance in full, and maxing out the limit. If the desirable cash, credit, or saving actions are considered difficult, students are more likely to act irresponsibly. In addition, if students perceived it is difficult to manage credit wisely, they are more likely to have three or more credit cards.

Parental approval of cash and credit behaviors is associated with four and five risky behaviors respectively. Parental approval of the cash and credit behaviors is both negatively related to being late in payments, not paying credit card balances in full, and maxing out the credit card limit. In addition, parental approval of the cash behavior is negatively associated with the frequency of credit card use. Parental approval of the credit behavior is negatively associated with having three or more credit cards and holding credit card debts.

Not following parental advice is associated with five risky behaviors: having three or more credit cards, having credit card debts, being late in payments, not paying the balance in full, and maxing out the limit.

Father's education shows associations with four behaviors. It is negatively related to three behaviors (having credit card debts, being late in payments, not paying the balance in full) and is positively related to the frequency of credit card use.

> Potential Effects of Financial Behaviors on Quality of Life

Positive financial behaviors seem to have a positive impact on life outcomes. Findings from bivariate analyses indicate that demonstrating good financial practices in cash management, credit management, and saving is positively related to financial satisfaction, physical and health, academic success and satisfaction, and overall life satisfaction (Table 5).

Table 5. Financial Behaviors and Life Outcomes: Results of ANOVA

	NEVER/SELDOM	SOMETIME	OFTEN/ALWAYS
CASH MANAGEMENT (N=624)			
Financial satisfaction	2.56	2.58	2.99
Health	3.34	3.35	3.73
Mental health			
depression	4.36	4.03	3.66
self-esteem	4.11	4.83	5.18
coping	4.77	5.04	5.31
worry	4.69	4.48	4.01
impulsivity	4.21	3.82	3.26
GPA group	3.35	3.86	4.10
Academic satisfaction	3.00	3.46	3.74
Life satisfaction	3.06	3.34	3.51
CREDIT MANAGEMENT (N=503)			
Financial satisfaction	2.41	2.44	3.11
Health	3.36	3.43	3.66
Mental health			
depression	4.06	4.06	3.69
self-esteem	-	-	-
coping	-	-	-
worry	4.71	4.42	3.92
impulsivity	-	-	-
GPA group	3.63	4.00	4.19
Academic satisfaction	3.50	3.47	3.76
Life satisfaction	3.27	3.36	3.51
SAVING (N=643)			
Financial satisfaction	2.60	3.12	3.45
Health	3.46	3.74	3.83
Mental health			
depression	4.02	3.55	3.60
self-esteem	4.92	5.29	5.12
coping	-	-	-
worry	4.35	3.90	3.69
impulsivity	-	-	-
GPA group	3.96	4.08	4.28
Academic satisfaction	3.59	3.78	3.83
Life satisfaction	3.35	3.58	3.64

Notes:

- All findings presented in the table are significant at 5% or better. In several cells, “-” means no statistical difference is found.
- The following are measurements of life outcome variables:
 - Financial satisfaction: 1-very unsatisfied, 7-very satisfied.
 - Health: 1-poor, 5-excellent.
 - Mental health: 1-never, 7-daily.
 - GPA group: 1-<2.0, 2-2.0~2.5, 3-2.6~2.9, 4-3.0~3.5, 5-3.6~4.0.
 - Academic satisfaction: 1-very unsatisfied, 7-very satisfied.
 - Life satisfaction: 1-strongly disagree, 5-strongly agree.
- For example, students who reported never or seldom performing money management behaviors are least financially satisfied (2.56) while those who often or always performed the behaviors are most financially satisfied (2.99).

Financial Satisfaction

A 5 point Likert scale was used to measure financial satisfaction. The students were asked: “How satisfied are you with your current financial status: 1 very unsatisfied, 2 unsatisfied, 3 neutral, 4 satisfied, 5 very satisfied.” Students who reported sound practices regarding money management, credit management, and saving “often” or “always” were more likely to report a higher level of financial satisfaction (Figure 12). For example, students who “never” or “seldom” managed their money reported the lowest level of financial satisfaction (2.56 out of 5) while those who “often” or “always” did reported the highest level of financial satisfaction (2.99). The same pattern is also found in credit management and saving.

Health

Health is measured by a 5 point Likert scale: “How would you rate your overall health? 1 -poor, 2 fair, 3 good, 4 very good, 5 excellent.” Those with positive financial habits also reported better health (Figure 13). For example, students who “never” or “seldom” manage their money reported the worst health (3.34 out of 5) while those reporting “often” or “always” do reported the best health (3.73). The same pattern is also found in credit management and saving.

Figure 12: Those who perform positive financial behaviors are more satisfied with their finances

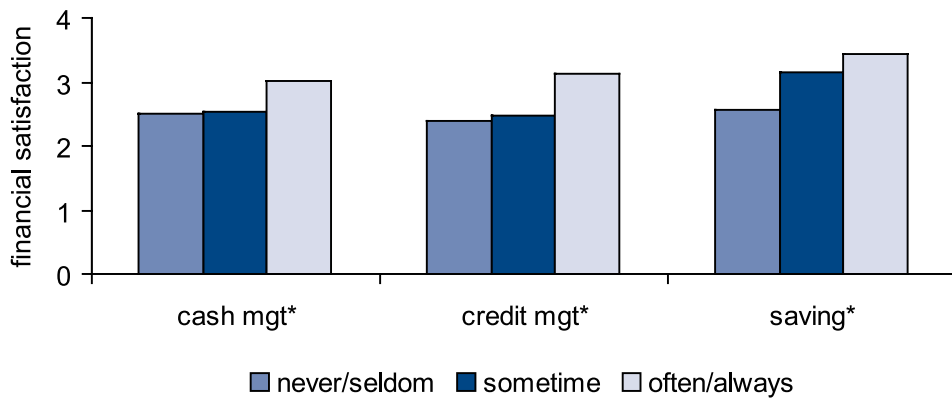
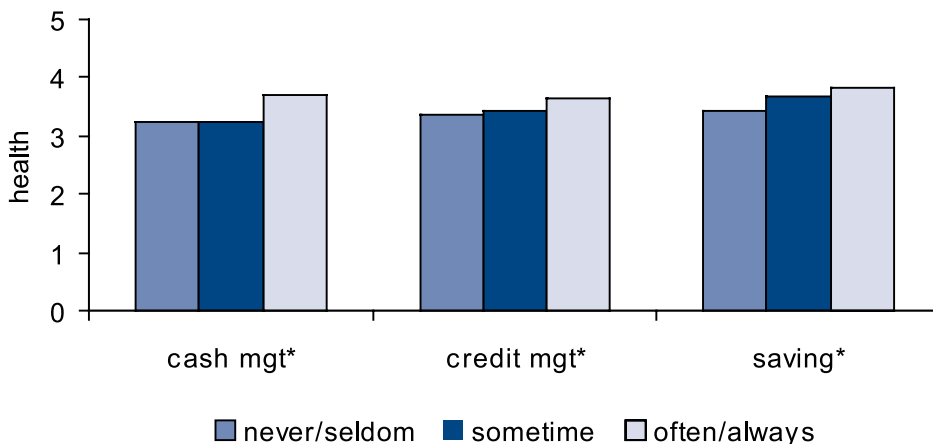


Figure 13: Those who perform positive financial behaviors have better health



Mental Health

Mental health was measured by 18 items with 5 dimensions: depression, self-esteem, coping, worry, and impulsivity. For each item, scores range from 1 to 7, with 1 never and 7 daily.

Two dimensions, depression and worry, showed negative associations with all three financial behaviors. For example, students who “never” or “seldom” managed their money were depressed most (4.36 out of 7) while those who “often” or “always” did were depressed least (3.66). The same pattern is found in credit management and saving (Figure 14).

Self-esteem showed associations with two financial behaviors, money management and saving behaviors. For example, students who “never” or “seldom” managed their money reflected the lowest self-esteem (4.11 out of 7) while those who “often” or “always” did reflected the highest self-esteem (5.18).

Two dimensions, coping and impulsivity showed associations with only the money management behavior. Coping is positively associated, while impulsivity is negatively associated with the frequency of practicing money management.

Grade Point Average

GPA is a measure of academic success in five levels: 1 lower than 2.0, 2 2.0~2.5, 3 2.6~2.9, 4 3.0~3.5, and 5 3.6~4.0. GPA is positively associated with all three financial behaviors (Figure 15). For example, students who “never” or “seldom” manage their money have the lowest GPA index (3.35 out of 5) while those do “often” or “always” have the highest GPA index (4.10).

Academic Satisfaction

A 5-point Likert scale was used to measure academic satisfaction. The students were asked: “How satisfied are you with your current academic progress?: 1 very unsatisfied, 2 unsatisfied, 3 neutral, 4 satisfied, 5 very satisfied.” Students who reported managing their money or credit “often” or “always” were more likely to report a higher level of academic satisfaction. For example, students who “never” or “seldom” did reported the lowest level of academic satisfaction (3.00 out of 5) while those who “often” or “always” performed the behavior reported the highest level of academic satisfaction (3.74). The same pattern is also found in credit management and saving.

Figure 14: Those who perform positive financial behaviors are less depressed

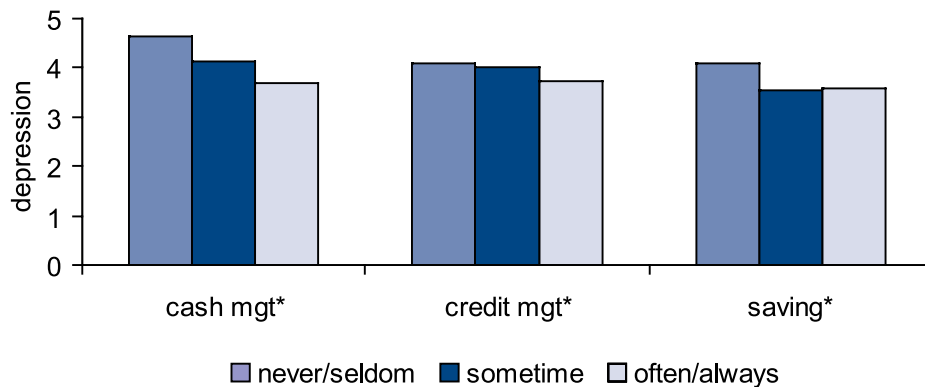
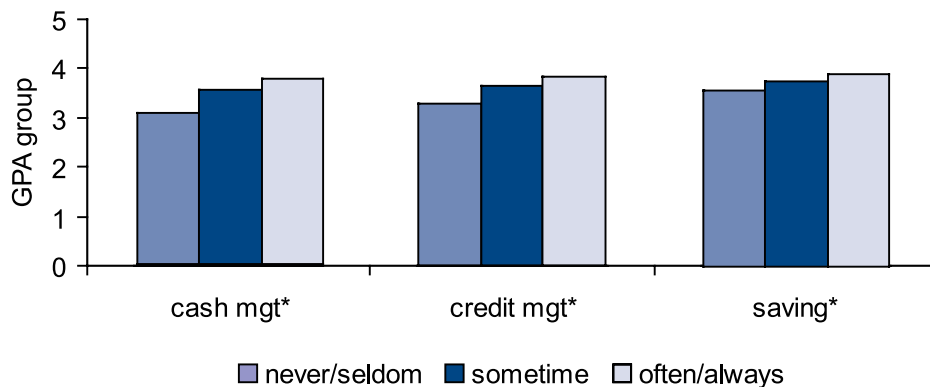


Figure 15: Those who perform positive financial behaviors have a higher GPA



Life Satisfaction

A 5-item measure was used for measuring life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). The five items include: “1) In most ways my life is close to my ideal; 2) The conditions of my life are excellent; 3) I am satisfied with my life; 4) So far I have gotten the important things I want in life; and 5) If I could live my life over, I would change almost nothing.” For each item, scores range from 1 to 5: 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree.

In the analyses, the scores of the five items are added and then divided by five, and the scores of the new composite measure range from 1 to 5. Positive financial habits are positively associated with life satisfaction (Figure 16). For example, those who reported “never” or “seldom” manage their cash reported the lowest level of life satisfaction (3.06 out of 5) while those who “often” or “always” did reported the highest level of life satisfaction (3.51). The same behavioral pattern can be seen in credit management and saving behavior.

In addition, risky credit behaviors may lower financial satisfaction, increase financial difficulties, decrease physical and mental health, lower GPA, and lower life satisfaction (Table 6).

Limitations of this study need to be acknowledged. First, this study only collected and analyzed cross-section data. The findings need support from future longitudinal research. Second, the findings presented in this report are only from bivariate statistical analyses. More advanced analyses, such

as structural equation modeling have been conducted and presented in another paper (Shim, Xiao, Barber, & Lyons, 2007). In addition, more advanced analyses focusing on specific topics are underway. Thus, the following findings should be considered preliminary and suggestive.

Summary of Major Findings

This report documents preliminary findings from a study that collected data regarding the financial behaviors and life outcome information from 781 undergraduate students at The University of Arizona in fall 2006. The research questions are to identify potential factors that affect financial behavior and the potential effects of these practices on the lives of college students.

In general, undergraduate students in the sample are more likely to have desirable cash management habits and less likely to manage credit and savings wisely. This is consistent with theory and previous studies indicating that this age group has completed the process of socialization with cash management and is starting the process of learning credit management for their current lives and, for their futures, long-term saving options.

Several psychological variables are associated with students’ cash management practices. If students have a more positive attitude, perceive it as easy to do, and beneficial?, they are more likely to manage money responsibly.

Figure 16: Those who perform positive financial behaviors are more satisfied with their lives

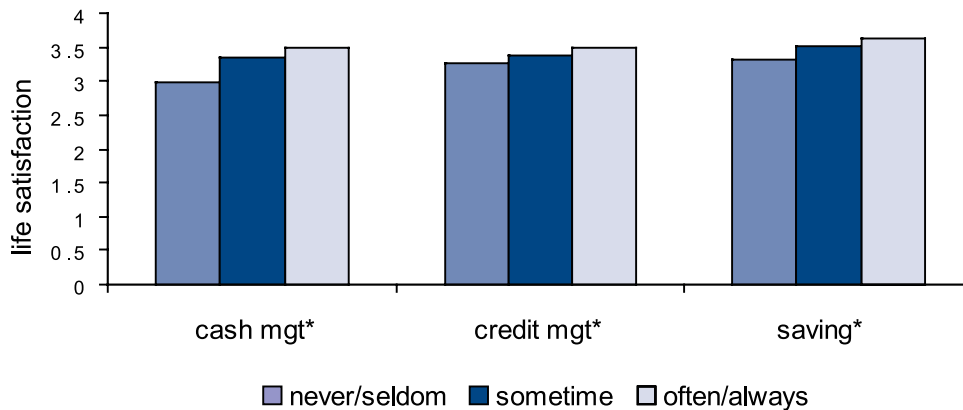


Table 6. Number of Risk Credit Behaviors and Life Outcomes: ANOVA Results

	NO RISK BEHAVIOR	1-2 BEHAVIORS	3-5 BEHAVIORS
Financial satisfaction	3.29	3.06	2.46
Financial difficulty	1.64	1.94	2.73
Health	3.81	3.66	3.39
Mental health-depression	3.61	3.71	4.01
Mental health-worry	3.72	4.1	4.45
GPA group	4.45	4.15	3.83
Life satisfaction	3.59	3.52	3.35

Note: results presented here are statistically significant at 5% or better.

Credit behaviors are associated with a number of student characteristics, psychological variables, and time-use patterns. Upper-class students are less likely to perform the desirable credit behavior. Others in this group include first-generation college students, those who are financially independent, have higher personal income, have a lighter course load, and live off campus. Other factors that negatively affect credit use are less positive attitudes, perception of difficulty, and a shorter time-planning horizon. Time use seems to affect the behavior in that students who spend less time for school work but more time for paid work and money management are less likely to have positive credit management practices.

Saving behaviors are associated with several student characteristics, psychological variables, and time-use factors. Less likely to save money are upper-class students, non-business majors, those living off campus, and those receiving financial aid. In addition, students with less favorable attitudes, who perceive saving to be difficult and who have less financial knowledge, who spend less time for school work but more time for paid work are less likely to save money.

Strong evidence from this study indicates that parents are important in promoting desirable financial behaviors. Students whose parents provide more financial advice are more likely to perform positively. If students believe these practices are approved of by their parents and they usually follow their parents' advice on money issues, they are more likely to do them. In addition, several parental characteristics show associations with these positive financial practices. For example, parents who are married, own a home, and have a higher level of education are more likely to have children with positive credit and saving habits.

College peers may play an important role for students' financial practices. Evidence from this study shows that if students perceive the desirable cash, credit, or saving behaviors are approved of by their peers, they are more likely to engage in them.

Risky credit behaviors are measured by six indicators: having three or more credit cards, using credit cards daily, having credit card debts, being late in credit card payments, maxing credit card limit, and not paying off credit card balances. Students with a higher academic class standing, especially seniors, are more likely to engage in these risky credit habits. Other factors that influence risky credit behaviors: include holding educational loans, being a first-generation college student, having a higher student income, finding responsible credit behavior difficult, receiving financial aid, and living off-campus.

Again, parents may play a positive role in encouraging responsible use of credit. Parental approval and a history of following parental advice are correlated with less risky credit card use. In addition, a father's education level may decrease the likelihood of three risky credit behaviors. Positive financial behavior is associated with positive life outcomes. Specifically, students with responsible financial habits are more likely to have higher financial satisfaction, better physical and health, higher grades, more academic satisfaction, and greater satisfaction for life as a whole.

IMPLICATIONS

Although the findings reported here are preliminary and suggestive, they provide helpful insight for educators and administrators who care about the well-being of college students. These findings could be used to promote effective financial education programs that not only assist students to form positive financial behavior but also directly improve the quality of their lives. The following are suggested.

1. Positive financial behaviors could be promoted through financial education on campuses since they may improve the well-being of students directly. Financial educators could encourage college and university administrators to be aware of this fact and thus encourage them to provide more support for financial education course offerings.
2. Financial education, especially in the areas of credit management and saving, is needed for undergraduate students, especially upper-division students. Evidence from this study shows that upper-class students are less likely to have desirable credit and saving practices, which should concern educators, administrators, and parents. These students will face independent decisions about credit and saving now and in their immediate futures. To make their lives better, they need to understand the importance of credit management and saving, avoid risky use of credit, start saving early for long-term goals, and learn practical skills and strategies to do so.
3. Financial educators and university administrators could encourage parents to inspire, support, and encourage their children to develop positive financial behavior. This study found that a number of parent-related variables are associated with students' positive financial behaviors, which implies that parents have significant influence on the formation of their children's financial behavior. To make financial education more effective and beneficial, financial educators need to develop programs to connect parents and their children.
4. Peer education should be encouraged to let college students interact with each other to develop positive credit and saving habits. Some evidence shows that peers also influence financial practices of college students. Many universities have student-run financial education initiatives, and these efforts should be encouraged, expanded, and formalized.
5. Financial education programs for college students should pay special attention to financially at-risk students. Students with certain characteristics are less likely to develop positive financial habits, and therefore they need special attention in financial education. Special classes should be offered for these students to address specific financial issues relevant to them.

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