Credit Cards Held by College Students

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Attitudes toward credit, money beliefs and behavior, and imagined conversations with parents about credit and debt were found to differ between students with credit cards and those without. Credit attitudes, the money attitudes of independence, power, and inadequacy, and the frequency and pleasantness of imagined interactions were shown to distinguish between students with credit cards and those without. All three credit attitudes and the money attitudes of obsession and retention distinguished between students with four or more credit cards and students with one through three credit cards. Ordered logistic regression was used to model students with four or more credit cards. Nine variables were significant: the affective and behavioral credit attitudes, the retention money attitude, the frequency of imagined interactions, age, ethnicity, having had instruction in personal finance, year in college, and whether they had a student loan.
Keywords: credit card usage, attitudes, imagined interactions, college students

Introduction

The use of credit cards among college students has received much attention in recent years from members of the financial community and policy makers. Credit card companies aggressively target college students because college students are expected to have higher than average earning power and are seen by the credit card companies as a desirable market (Warwick & Mansfield, 2000). However, policy makers are concerned about such aggressive marketing (United States General Accounting Office, 2001). Credit has been linked to multiple problems in the college student population such as anxiety, dropping out of school, filing for bankruptcy and even suicide (Mannix, 1999; McMurtrie, 1999).

Students do not fully understand the financial implications of having a large number of credit cards and/or carrying a large amount of credit card debt. The more credit cards, the more likely they are to spend more (Education Resources Institute, 1998; Feinberg, 1986). Kidwell and Turrisi (2000) noted that if students were embarrassed to borrow money and/or did not have enough money in their checking account to use cash, write a check, or use a debit card, they were more likely to acquire a new credit card.

In addition, increased spending has been associated with increased debt (Faber & O'Guinn, 1988). The average college undergraduate credit card debt was $2,327 in 2001 and 47% of students had four or more credit cards. While the average credit card debt decreased from $2,748 in 2000, the median credit card debt increased from $1,236 to $1,770 and the percentage with balances between $3,000 and $7,000 increased from 13% to 21%. The number of students with balances in excess of $7,000 decreased from 9% in 2000 to 6% in 2001. When combined with their student loan debt, the average debt level for freshman was $3,150 ($1,533 in credit card debt and $1,617 in student loan debt). For seniors, the average combined debt was $20,402 ($3,262 in credit card debt and $17,140 in student loan debt (O'Malley, 2003). Forty-two percent of former undergraduate students who participated in the 2002 National Student Loan Survey reported that student loan debt was a major reason for not attending graduate school (Baum & O'Malley, 2003).

In addition, financial issues are often listed as sources of conflict within the family (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1983; Picard & Fullmer, 1999). Given the salience of credit cards both as an easily accessible financial tool and as a potential problem for college students and their families, it is suggested in this study that students will have imagined interactions, expending mental time and effort, with their parents about their credit card use and their spending habits.

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Parents were chosen as the focus because, although they are not the only source influencing college students' use of credit, they are important sources of information about matters such as credit (American Savings Education Council, 1999). Their communication with their child has an important effect on the child's consumer attitudes and activities (Martin & Bush, 2000; Moore & Moschis, 1983; Moschis & Mitchell, 1986; Moschis & Moore, 1984, 1983; Moschis, Prahasto, & Mitchell, 1986).

Imagined interaction refers to the process in which people imagine themselves interacting with others (Edwards, Honeycutt, & Zagacki, 1988). These mental conversations may precede or follow the actual interaction. The primary function of imagined interactions is to rehearse or review conversations.

This study is the first to examine the frequency and pleasantness of imagined interactions college students report having with their parents about the college student's credit card use. Imagined interactions can play either a positive or negative role in situations where students are having credit card or spending problems. If financial counselors and educators understand the nature of college students' imagined interactions with their parents about credit and spending then programs can be developed to assist college students and their parents in developing more positive communication patterns. It is also important for college students and their parents to understand the students' attitudes toward money and credit to better address the underlying attitudes potentially influencing their imagined interactions.

Purpose

The purpose of this study is to examine the relationship between attitudes about credit and money held by college students, the frequency and pleasantness of imagined interactions with parents, and the number of credit cards held by the student. Because parents are an important source of consumer socialization, how a college student feels about discussing credit and spending habits with his or her parents may have an important impact on their attitudes toward money and credit as well as their subsequent behaviors in those areas.

Review of Literature

Credit Attitudes Research

College students' attitudes toward credit were measured by Xiao et al. (1995). These researchers developed a Likert summated rating scale composed of a series of statements relating to credit cards. Fifteen of the statements related to feelings about credit cards (affective), ten statements dealt with knowledge (cognitive), and twelve statements related to usage of credit cards (behavioral). Xiao et al. findings indicated that college students had favorable attitudes towards credit. Of those surveyed, 82% of the students had favorable affective attitudes and 67% had favorable cognitive attitudes. However, 25% of the students had unfavorable behavioral attitudes, while only 20% have favorable attitudes. Consumer affairs majors were more likely to indicate "favorable" behavior attitudes than other majors.

Two subsequent studies suggest many college students have fairly positive views toward credit cards, although these attitudes may become less positive over time. Hayhoe et al. (1999) found that students with no credit cards were more likely to score lower on the affective credit attitude than students with credit cards. Students with four or more credit cards were more likely to score higher on the cognitive credit attitude than students with one through three credit cards. In a follow-up with some of the students two years later, Hayhoe (2002) found that 40% had lower affective credit attitude scores and 35% had higher affective attitude scores. Those who had graduated had lower affective attitude scores.

Yang and Lester (2001), using the modified scale developed by Hayhoe et al. (1999), found that students with high affective credit attitude scores were more likely to have more credit cards. This confirms the results of Hayhoe et al. (1999).

Warwick and Mansfield (2000) found that 1.4% of the college students surveyed felt credit cards are "the best thing man ever invented," 68.6% felt they are "good if used correctly," 21.2% felt "they were not the best way to manage your money," and 8.2% felt "they are the worst thing man ever invented" (p. 622). Older students were more likely than younger students to feel

that credit cards were not the best way to manage money. Given the importance of credit in society in general and to the college student population in particular, the current study provides a valuable extension of knowledge regarding college students' attitudes toward credit.

Money Attitudes Research

Researchers have examined money attitudes and behaviors using different attitudinal and behavior measures. Yamauchi and Templer (1982) developed a psychometric Money Attitude Scale that measured five factors related to the attitudes individuals hold towards money. These factors were power/prestige, retention time, distrust, quality, and anxiety. The authors found money attitudes to be independent of a person's income.

Related research has been conducted on credit and money attitudes. Tokunaga (1993) studied two groups of credit card users, those who had experienced severe financial problems and a control group who had not experienced such problems. Attitudes towards money were measured using a scale similar to the one developed by Yamauchi and Templer (1982). Tokunaga found that heavy users of credit cards viewed money as a source of power/prestige, experienced more anxiety about financial matters than the control group, and were less concerned about retaining money.

The money attitude scale developed by Furnham in 1984 has been widely used (Bailey & Gustafson, 1986; Bailey & Lown, 1993; Furnham, 1984; Hanley & Wilhelm, 1992; Hayhoe, 2002, Hayhoe, et al., 1999; Hayhoe & Wilhelm, 1998; Wilhelm & Varcoe, 1991; Yang & Lester, 2001). Furnham's Money Beliefs and Behaviors Scale (MBBS) is a more inclusive scale initially developed to measure money beliefs and behavior in Britain. The scale consists of sixty items that are rated on a 7-point agree-disagree scale. The items are grouped into six factor areas: obsession, power/spending, retention, security, inadequacy, and effort/ability. Furnham noted that money attitudes are multidimensional and that demographic variables influence a person's money beliefs and behaviors. Obsession and power/spending are significantly related to a person's sex, age, and education. Males and less educated people tended to be more obsessed with money than their counterparts. Younger people are more likely to use money as a means of power than older people.

Modified versions of Furnham's scales have been employed with samples of adults (Bailey & Gustafson, 1986; Bailey & Lown, 1993; Hanley & Wilhelm, 1992; Hayhoe & Wilhelm, 1998; Wilhelm & Varcoe, 1991) and college students (Hayhoe, 2002, Hayhoe et al., 1999; Yang & Lester, 2001) in the United States. Hayhoe et al. (1999) found that students with no credit cards are more likely to score higher on the money attitudes of obsession (emphasis on thinking about different aspects of money) and retention (not wanting to spend money even when it is available) than those with credit cards. Students with four or more cards are more likely to score higher on effort/ability, (one does deserve one's income) than students with one through three credit cards. Yang and Lester (2001) found that students at a private university who scored higher on the money attitude of retention had fewer credit cards, partially confirming the results of Hayhoe et al. (1999). However, for state college students, the retention attitude was not related to the number of credit cards.

Imagined Interaction Research

Imagined interaction is grounded in symbolic interaction theory (Rosenblatt & Meyer, 1986). Imagined interactions allow people to script potential conversations (Schank & Abelson, 1977). Edwards and colleagues found that imagined interactions involved significant others as imagined partners and were used most often to rehearse for upcoming interactions.

Imagined interactions can be used to clarify one's thoughts and feelings as well as to reduce stress or relieve emotions over anticipated reactions from the imagined party (Edwards et al., 1988; Gotcher & Edwards, 1990; Rosenblatt and Meyer, 1986). They also may be used as a substitute for conversations that a person feels will be received negatively (Berkos, Allen, Kearney, & Plax, 2001) or when the significant other is not physically present (Allen & David, 1994, cited in Berkos et al., 2001). All of these situations may be present for college students wishing to discuss financial issues with their parents.

This study employs two characteristics of imagined interactions: frequency and pleasantness.[a] Frequency refers to how often an individual experiences imagined interactions. Pleasantness refers to the degree the imagined interaction is enjoyable and free from conflict. Edwards et al. (1988) found that women have more frequent imagined interactions than men. When studying the imagined interactions of first year university students and their parents when attending an on-campus orientation, Woods and Edwards (1990) found that parents reported more pleasant and more frequent imagined inactions than students reported.

Descriptive Variables. Owning multiple cards may increase the likelihood of having a high amount of debt (Feinberg, 1986). Hayhoe et al. (1999) found, in addition to credit and money attitudes, gender, having a course in personal finance, and age were significant variables predicting students with four or more credit cards. They also examined employment status, student status (graduate student compared to undergraduate), perceived economic well-being, having a student loan, and income, but these measures were not significant. Lyons (2003) found that 77% of financially at-risk students with credit cards receive financial aid. She also found that 32% of these students were not employed and an additional 31% were employed 11-20 hours per week. These students were predominately (73%) white, non-Hispanic.

To confirm the Hayhoe et al. (1999) and Lyons (2003) results, the following variables were included in this study: gender, age, having a course in personal finance, having a student loan, ethnicity, and employment status. Year in school (freshman, sophomore, junior, or senior) was used instead of student status since all the students were undergraduates. Hayhoe et al. found that if the student's family of origin used money as a reward, the student was more likely to have four or more credit cards. This measure was not available in the current study. However, how money was handled in the student's family (i.e., argue, work together to solve financial problems, one person handles the finances) was available and is used in the analysis.

Dependent Variable. The number of credit cards the student possessed is used as the measure of the propensity for the student to mismanage their debt. The number of credit card was chosen rather than the amount of the debt since most of the students were freshman. Lyons (2003) found that only 4% of freshman had balances of $1,000 or more but that 55% of seniors carried balances of $1,000 or more. Thus the number of credit cards shows the propensity to carry a larger balance in the future.

Methods

Participants

The participants were college students who attended one of four state sponsored universities in Arkansas, Kentucky, Louisiana, and Missouri. Students at these universities come from all socioeconomic levels.

Data was gathered from a questionnaire in Kentucky, Louisiana, and Missouri. In Arkansas and Kentucky, the survey was administered to students in communication classes. In Arkansas, an on-line version of the survey was used to because the in-class surveys were not permitted. In Louisiana, the survey was administered to first-year English classes, to students enrolled in communication classes, to students in dormitories, and to students waiting for advising. In Missouri, respondents were enrolled in a freshman seminar. Subsequent analysis through ANOVA and regressions found no significant differences in the data from the four states. Students in Arkansas, Kentucky, and Missouri received class credit and alternate assignments were available for those who did not wish to participate.

Sample

College students are an ideal population for this study. College freshmen and sophomores are at a crossroads; many are living away from home for the first time. Unlike high school students, college freshmen and sophomores are beginning to make new and more complex financial decisions. Credit card marketers aggressively target the college population. Their financial attitudes and beliefs have important implications for their financial health. However, they remain at least partially financially and emotionally dependent on their parents. This dependence means they are likely to think about and have more frequent financial discussions than a typical college graduate.

A demographic description of the sample is provided in Table 1. Over 75% of the respondents were freshmen; 40% were male. Most respondents were 18 (61%) or 19 (24%). Almost all the students were single.

Table 2 presents the descriptive information on credit card usage. Fifty-one percent of the students did not have a credit card. Of those students with credit cards, 54 % had one through three cards and 44% had four or more cards. The number of credit cards ranged from one to 22 credit cards. Of the students with credit cards, 73% said they had at least one card that was in their name only and 14% carried the maximum balance on one card with an additional 1% carrying the maximum on 2 to 6 cards. Only 20% of all the respondents reported having had three or more sessions of instruction in high school dealing with credit cards and only 7% had such in college. Most of the students (79%) had a student loan. Eighty percent of the students worked at least part-time during the year.

Measurement of variables

Credit attitudes were measured by a modified version of the credit attitude scale (Hayhoe et al., 1999; Xiao et al., 1995). The scales were formed from 12 questions rated with a 5-point Likert scale from Strongly Disagree (1) to Strongly Agree (5). Credit attitudes were measured on three dimensions: affective (alpha =.76), cognitive (alpha=.58), and behavioral (alpha=.80). Each scale consisted of four questions with a maximum score of 20.

Credit Attitudes

Affective	Emotional (using credit makes my feel happy)
Cognitive	Knowledge (interest is the cost of using credit)
Behavioral	Actions (apply for credit cards at every opportunity)

Money attitudes were measured using a modified version of Furnham's (1984) Money Beliefs and Behavior Scale (Hayhoe & Leach, 1997). Questions were rated with a 5-point Likert scale from Strongly Disagree (1) to Strongly Agree (5). Five scales were the same as Furnham's: obsession, power, retention, effort/ability, and inadequacy. Furnham's security scale was modified to reflect independence as more fitting college students. The obsession scale, which represents an emphasis on thinking about different aspects of money, was measured with six questions

Table 1
Description of the Sample (N = 1293)

	Frequency	Percentage distribution[a]
Grade Level		
Freshman	990	77%
Sophomores	198	15%
Juniors	74	8%
Seniors	29	2%
Gender		
Male	514	40%
Female	775	60%
Missing	4	
Age		
18	790	61%
19	310	24%
20+	193	15%
Ethnicity		
Caucasian	1044	81%
African-American	80	6%
Asian	31	3%
Hispanic	20	2%
Other	14	1%
Missing	97	7%
Major		
Business or related areas	322	25%
Family or consumer areas	22	2%
Other	891	70%
Missing	58	4%

[a] Percentages may not add to 100 due to rounding or missing data.

Table 2
Credit Card Usage (N = 1293)

	Frequency	Percentage distribution[a]
Credit Cards (N = 1293)		
None	654	51
1 to 3	339	26
4 or more	278	22
Missing	22	2
Students with credit cards (N = 639)		
Age when received first card		
12–17	227	36
18	334	52
19	40	6
20 or older	31	5
Received card		
From parent	308	48
Mail solicitation	101	16
Campus solicitation	20	3
Other	202	32
Bill paying practice		
Paid in full each month	416	65
Partial payment	126	20
Minimum payment	59	9
Payment responsibility		
Student only	289	45
Student with rare help from parent	72	11%
Student and parent	90	14
Parent only	172	27
Carry balance at times on		
0 cards	172	27
1 card	287	45
2 cards	79	12
3 cards	26	4
4 - 15 cards	23	4

[a] Percentages may not add to 100 due to rounding or missing data.

(alpha = .79). The power scale, which represents using money for influence, was measured by three questions (alpha = .70). The retention scale, which represents not wanting to spend money even when it is available, consisted of two items (r = .65). The effort/abilityscale, which represents the concept that one does not deserve one's income, consisted of two items (r = .49). A high score on this money attitude implies that the respondents felt they should be paid more for their labor. Inadequacy, which represents worrying about not having enough money, consisted of three items (alpha = .61). The lower the score, the higher the person's feeling of inadequacy. The independence scale, which represents wanting to be financially independent, consisted of four items (alpha = .75).

Money Attitudes

Obsession	Always thing about money and money solves all problems
Retention	Not wanting to spend money
Effort/Ability	Being paid adequately for work performed
Power	Using money to control others
Inadequacy	Not having enough money
Independence	A means to independence

To represent the imagined interactions scale (Honeycutt et al., 1990), three items measured frequency of experiencing imagined interactions (alpha=.84) and another three items measured pleasantness (alpha=.83). For those with credit cards, the focus was on their imagined interactions with parents about credit card use. For those without credit cards, the focus was on their imagined interactions with parents about spending habits. Higher scores indicate more frequency and more pleasantness, respectively. The frequency questions simply measured frequency. Items measuring pleasantness included "My imagined interactions with my parents about my credit card use (or spending habits) usually involve conflicts or arguments," "I dislike most of my imagined interactions with my parents about my credit card use (spending habits)," and "My imagined interactions with my parents about my credit card use (spending habits) are quite unpleasant."

A single question measured how finances are handled in the student's family of origin; responses were "argue", "work together", or "father or mother handles on their own". Student's employment status was coded 0 for not employed and 1 for employed. Ethnicity was coded 0 for "White non-Hispanic" and 1 for "Other" since only 13% of the sample was coded in the multiple "Other" categories. The presence of a student loan was coded 0 for no and 1 for yes. The student's year in school was coded 1=freshman, 2=sophomore, 3=juniors, and 4 =seniors.

Results

Inferential statistics results

This study sought to identify any differences between those with credit cards and those without. The results are shown in Table 3. Students who reported not having credit cards were more likely to score higher on the behavioral and cognitive credit attitudes and have more frequent imagined interactions as compared with students with credit cards. Students with credit cards were more likely to score higher on the money attitudes of power, inadequacy, independence, the affective credit attitude, and had more pleasant imagined interactions than those students without credit cards. There were no significant differences between students with and without credit cards on the money attitudes of obsession, retention, and effort.

This study also identified differences between students who acquire more credit cards and those with fewer cards. The average college student has three cards (Nellie Mae, 2002). therefore, students were separated into those with three or fewer and four or more. The results are shown in Table 4. Students with one through three credit cards were more likely to score higher on the money attitude of obsession and the cognitive credit attitude than students with four or more credit cards. Students with four or more credit cards were more likely to score higher on the retention money attitude and the affective and behavior credit attitudes. There were no significant differences between those with one through three credit cards and those with four or more credit cards on the frequency or pleasantness of imagined interactions or the money attitudes of inadequacy, independence, power, or effort.

Table 3
T -tests of differences between students with and without credit cards (only significant results are shown)

	n	t-value	Prob.(p<)
Attitude			
Affective	1290	11.07	0.001
Behavior	1290	-3.28	0.001
Cognitive	1290	-2.47	0.015
Independent	1291	3.87	0.001
Power	1291	2.87	0.004
Inadequacy	1292	2.57	0.010
Imagined Interactions			
Frequency	1269	-6.50	0.001
Pleasantness	1258	5.23	0.001

Table 4
T -tests of differences between students 1 through 3 cards and 4 or more credit cards. (only significant results are shown)

	n	t-value	Prob.(p<)
Attitude			
Affective	615	-3.17	0.002
Behavior	615	-2.33	0.020
Cognitive	615	2.10	0.037
Obsession	616	2.62	0.009
Retention	616	-2.24	0.026

Ordered logistic regression results

In order to identify which variables significantly distinguish the number of credit cards a student had, ordered logistic regression was used instead of ordinary regression as the dependent variable was categorical. Similar to Hayhoe et al. (1999), the dependent variable tested three categories, (no cards, one through three, and four or more). The model was ordered to predict students with four or more credit cards. The number of credit cards was grouped to reduce the effect of outliers such as the one student with 22 credit cards. Logistic regression was used instead of discriminant analysis since some of the predictor variables were categorical in nature (Press & Wilson, 1978).

The original logistic regression employed 19 predictors, affective, cognitive, and behavioral credit attitudes; obsession, power, retention, inadequacy, independence, and effort/ability money attitudes; imagined interaction frequency and pleasantness; gender; age; year in college; employment status; having student loans; having instruction in personal finance; ethnicity, and parental management of money. The results are shown in Table 5.

Table 5
Parameter estimates of ordered logistic regression models predicting those with four or more credit cards

Predictor	All Variable Model	Restricted Model
Credit Attitudes		
Affective Attitude	1.31***	1.37***
Behavioral Attitude	-0.63***	-0.55***
Cognitive Attitude	-0.22	
Money Attitudes		
Obsession	0.07	
Retention	0.27*	0.28*
Power	0.12	
Inadequacy	-0.05	
Independence	0.15	
Effort/Ability	-0.00	
Imagined Interactions		
Frequency	-0.52***	-0.52***
Pleasantness	0.12	
Remaining Predictors		
Gender	-0.18	
Age	0.53*	
Ethnicity	-0.17*	
Unit in Personal Finance	-0.40***	-0.38**
Grade (year??)	0.40	0.43***
Student Loan	0.54**	0.57***
Parents handle money issues	-0.01	
Employment	0.10	
Chi-Square Score	219.63***	210.15***
Degrees of freedom	19	9
Percent of respondents correctly assigned to categories	72.3%	71.2%

* p<0.05, ** p<.01, ***p<.001

A parsimonious model using stepwise selection tested for variables that were significant at a probability of less than 0.05 level. Results are shown in Table 5. Nine variables entered the model. Variables are listed in order of significance: affective credit attitude, year in college, frequency of imagined interactions, behavior credit attitude, having a student loan, having instruction in personal finance, race, age, and the money attitude of retention. Students with four or more credit cards were more likely to score high on the affective credit attitude, to be in a higher year in college, to have fewer imagined interactions, to score lower on the behavior credit attitude, to have a student loan, to not have had instruction in personal finance, to be a White–non Hispanic, to be older, and to score higher on the retention money attitude. (See Table 3 for a description of the money and credit attitudes.

Discussion and Implications

This study focused on three possible explanations of college students' possession of credit cards: credit attitudes, money beliefs and behavior and imagined conversations with parents about credit and debt. The results and their implications will be discussed in that order.

Having a higher cognitive credit attitude means that the student has a better understanding of how credit works. Scoring high on the behavioral credit attitude means that the student likes to apply for credit cards and would like more of them. Having a higher affective credit attitude means the student enjoys having credit cards and likes using credit. Students without credit cards scored higher on the cognitive and behavioral credit attitudes. In the Hayhoe et al. (1999) analysis, the cognitive and behavior credit attitudes were not significant. While scoring higher on the cognitive credit attitude may mean that because these college students understand how credit cards work, they have decided not to have one. Scoring high on the behavioral credit attitude may seem contradictory for college students who do not have a credit card. However, as the behavioral score can be interpreted as "I want more credit cards," this simply may mean they don't have any credit cards but want one or more. Because the sample was mainly freshmen, they may not have received credit cards yet. Further study is needed to clarify this result. Both studies found that students without cards scored lower on the affective credit attitude. This is as expected because they haven't used credit cards.

The results also were different between this study and the Hayhoe et al. study (1999) when comparing students with four or more credit cards as compared to students with one through three credit cards. This study found that students with four or more credit cards scored higher on the affective and behavior credit attitudes, and lower on the cognitive credit attitude. The findings in the current study verify what would be expected when examining these attitudes. Students who feel good when they use credit and who like to apply for credit have more cards. Students who understand how credit works have fewer cards. Hayhoe et al. found that students with four or more credit cards scored higher on the cognitive credit attitude. The differences in the two studies may be due to the age of the students; most of the students in the current study were 18 or 19 compared to a mean age in the Hayhoe et al. study of 23.

People who score high on the obsession money attitude feel that money can solve all their problems. Scoring high on the retention money attitude means people do not want to spend money even if they could. Scoring high on the power money attitude means people want to spend money to impress others or to feel better. Scoring high on the effort money attitude was scored so that it meant the student felt they should earn more for the work they do. Scoring high on the independent money attitude means the student wants to be financially independent. Scoring higher on the inadequate money attitude means the student feels they do have enough money.

In this study, students without credit cards scored lower on the money attitudes of independence, power, and inadequacy. This is as expected since it shows they did not feel financially independent, did not feel the need to spend money to impress people or feel better, and that they felt they did not have enough money. This is not the same as Hayhoe et al. (1999), in which independence was not employed as a money attitude. In addition, Hayhoe et al. found that students without credit cards scored higher on the money attitudes of obsession and retention. More study is needed in this area on a more age-diverse population of students to verify these results and investigate the differences found in the two studies.

The results also were different between this study and Hayhoe et al.'s (1999) when comparing college students with four or more credit cards and those with one through three credit cards. This study found that college students with four or more credit cards were more likely to score higher on the money attitude of retention and lower on the money attitude of obsession. Perhaps this shows that students with a lot of credit cards were already feeling the need to reduce their spending because of their credit card debt. Neither of these money attitudes was significant in the Hayhoe et al. study. They did find that students with four or more credit cards scored higher on the money attitude of effort. However, that money attitude was not

significant in the present study. That may be due to the types of jobs that these younger students held. More study is needed on a student population that has a larger number of older students.

In comparing the results of the parsimonious models describing students with four or more credit cards, two variables were included in both. Both Hayhoe et al. (1999) and the current study found that students with four or more credit cards were more likely to be older and to score higher on the affective credit attitude. An additional two variables, the money attitude of retention and having instruction in personal finance, were in both models but in opposite directions. Hayhoe et al. found students with four or more credit cards were more likely to score lower on the money attitude of retention and to have had instruction in personal finance. The current study found the reverse. Again, this may have been due to the differences in age between the two samples. Younger students have had less time to accumulate large credit card balances. The behavior credit attitude and having a student loan were not significant in the Hayhoe et al. model but were significant in the current model. The remaining significant variables in the current study were not included or were measured differently in both studies so they cannot be directly compared. Because of different variables employed and difference in mean age of the two samples, one would expect the findings in the two models to differ somewhat.

The new piece added in this study examined the frequency and pleasantness of imagined interactions. Students without a credit card had more frequent imagined interactions with their parents about the student's spending habits but fewer pleasant imagined interactions than did students with credit cards who were reflecting upon imagined conversations about their credit card use. In the model, the frequency of imagined interactions was significant in distinguishing the number of credit cards a student held. Students with four or more cards had fewer imagined interactions about credit use with a parent. Working with students and parents on discussions about money may be one way to help students reduce the need for carrying several credit cards. Financial counselors, university financial aid advisors, and freshman seminar teachers can help ascertain how college students feel about unpleasant imagined interactions and help them learn how to better communicate with family members to reduce the perceived unpleasantness of such interactions. They also can help those who do not frequently have imagined interactions, but who need to plan for credit and spending-related discussions, learn how to better hold such conversations.

One of the immediate policy implications of this study relates to the number of credit cards this young, largely freshman sample has amassed. Forty-nine percent of the college students in this sample had at least one credit card although most were in their first semester of college. This suggests that the freshman college student is heavily targeted for credit cards through "tabling" (3% reported from this method), mailed applications (16% reported this method), and other credit card marketing strategies. On campuses where excessive credit use is a concern, campus policies prohibiting credit card companies from soliciting on campus might be enacted. It must be noted that the Arkansas, Kentucky, and Missouri campus policies prohibit credit card companies from "tabling" on campus. Further research must be done to show whether this has been a beneficial policy.

Another policy implication relates to the finding that this largely freshman sample was less likely to have had four or more cards if they had received instruction in personal finance. A possible reason why this result contradicts Hayhoe et al (1999) is that the age range of the earlier sample was broader; those students might have taken a personal finance class because of problems with indebtedness. Therefore, requiring personal finance at the high school or freshman level might reduce accumulation of cards among college students in later years.

In conclusion, understanding college students' credit and money use in contexts of credit and money attitudes and imagined interactions yields results of interest to family and financial counselors, college financial aid personnel, policymakers at the college and state level, and researchers, as well as the college students and families themselves. Additional research is needed to clarify differences in results with previous studies and to clarify these glimpses into family communication about money and credit.

Endnote

[a]Other characteristics of imagined interaction are theoretically relevant to family communication and financial issues including self-dominance, proactivity, retroactivity, discrepancy, variety, and specificity. However, in a pilot study we discovered that proactivity was strongly correlated with activity and did not provide additional insight. We also experienced difficulty with the reliability of measuring discrepancy and so did not include it in this investigation. Other characteristics were of less theoretical interest to the present investigation and were not included in order to control the length of the questionnaire.

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