Utilizing the Theory of Planned Behavior to Understand Convenience Use of Credit Cards

Leann G. Rutherford and Sharon A. DeVaney

Utilizing the theory of planned behavior, factors influencing convenience use of credit cards were investigated. The analysis was prepared using data from 3,476 households in the 2004 Survey of Consumer Finances. Results from logistic regression indicated that convenience users of credit cards: were more likely to believe that using credit was bad, had longer financial planning horizons, did more shopping for credit, were older, had a college education, and had higher income. Respondents were less likely to be convenience users of credit cards if they: had no tolerance for risk, were late with payments, thought it was all right to use credit for vacations, and sought credit advice from other people and the media instead of doing their own search.

Key Words: convenience users, credit cards, theory of planned behavior, 2004 Survey of Consumer Finances

Introduction

Consumer credit plays an important role in how U.S. households handle their personal finances. According to a report released by the Federal Reserve Board (2009), although the amount of outstanding consumer credit declined by 1.5% during 2009, the estimated amount of debt was at $2,519.5 billion in May 2009 as compared to $2,387.7 billion in 2006. Such a high amount of outstanding consumer credit is not surprising, considering the recent recession of the economy which *Industry Week* believes started in late 2007 (Duesterberg, 2008). Research shows that when economic conditions worsen, many households experience a shortage of available cash and cash equivalent assets from income, savings, and/or investments (Roe, 2003). As a result, more households are forced to investigate their options of borrowing money (Grant, 2007).

There are two types of credit card users. Those users who receive their credit card statements at the end of the month and pay the balance in full on a regular basis are called convenience users. However, those who receive their credit card statements at the end of the month and pay only a portion of the balance, thus letting the remaining balance accrue interest, are referred to as revolvers. The differences between credit card convenience users and revolvers with regard to the demographics, advantages, and disadvantages have been of significant interest to both researchers and practitioners (e.g., Chakravorti & Emmons, 2003; Kim & DeVaney, 2001). Gross and Souless (2002) suggested that high credit card balances do not stem primarily from liquidity problems but are a result of a person's behavior. In addition, in an attempt to identify the motivational factors that lead to convenience or revolver use of credit cards, several previous studies have looked at the impact that attitude and affective factors have on credit card behavior among students, international consumers, and general U.S. credit card users (e.g., Chien & DeVaney, 2001; Durkin, 2000; Hayhoe, 2002; Kaynak, Yucelt, & MacGregor, 1986). Some studies have identified that credit cards play an important role in leading to compulsive buying as a result of social pressures and lack of self control (Baumeister, 2000; Roberts & Jones, 2001). In addition, existing research addresses the relationship between control factors such as knowledge and income and consumers' financial behavior (Perry & Morris, 2005). However, according to the theory of planned behavior, consumer behavior is based on the intentions determined by behavioral attitude, subjective norms, and perceived behavioral control (Sahni, 1994). Therefore, according to the theory of planned behavior, all three determinants of intentions have to be addressed to accurately predict credit card behav-

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ior. The previous studies, although extensive in analyses of individual determinants of intentions, did not compare consumers' attitudes, norms, and perceived control with regard to credit cards together in one study.

The purpose of this study was to analyze the factors that influence convenience use (or alternatively revolving use) of credit cards based on the theory of planned behavior. The results from this study will extend the current knowledge of consumer credit by providing a better understanding of how credit attitudes, norms, and perceived control influence credit card users' behavior. These results will be beneficial to personal finance educators, financial advisors, and policy makers in assisting consumers with managing credit card debt.

Review of Literature

Background on Theory of Planned Behavior

The purpose of the theory of planned behavior is to predict and understand consumer behavior. According to the theory, a person's behavior can be predicted by intention, which is predicted by the person's attitude toward the behavior, subjective norms, and perceived control (Ajzen, 1991). An attitude toward a behavior is defined as one's positive or negative evaluation of the particular behavior based on the person's beliefs. A subjective norm is a person's perception of whether significant referents approve or disapprove of the behavior. Perceived control is the perceived difficulty of performing the behavior.

The theory of planned behavior is an appropriate theory for studying credit card usage behavior of consumers. The theory can be used to evaluate consumers' general attitudes about credit, their feelings about the social norm pressure, and the difficulty of achieving the desired behavior. Previous research supports the factors used in the theory as predictors of credit card users (Kim & DeVaney, 2001).

Credit Attitude

Based on the theory of planned behavior, attitudes affect one's behavior (Ajzen, 1991). Attitudes are composed of a number of salient behavioral beliefs that affect the outcome behavior (Ajzen, 1985). Conner and Armitage (1998) expanded on the components of behavioral beliefs. They suggested splitting the category of behavior attitudes by affective reactions and spontaneous impacts. Affective reactions are based on the individuals' anticipated feelings of regret after performing a certain behavior, so these emotions cause them to have stronger negative attitudes about the behavior (van der Pligt, Zeelenberg, van Dijk, de Vries, & Richard, 1998). Affective reactions are measured by asking the respondents to rank their feelings as *pleasant-unpleasant, likely-unlikely*, and *good-bad* (Manstead & Parker, 1995; Parker, Manstead, Stradling, Reason, & Baxter, 1992; Richard, van der Pligt, & de Vries, 1996). Spontaneous impacts are based on previous deliberations, rational thinking, and careful planning (Fazio, 1990). For attitudes to guide behavior as a spontaneous impact, attitudes are automatically activated in the presence of the attitude object. For a more accurate measurement of behavior attitudes, it is recommended that both affective reactions and spontaneous impact questions are present.

To determine the attitudes of convenience users and revolvers toward using credit cards to repay debt, previous studies suggest three attitude factors: attitude toward general credit, attitude toward risk tolerance, and the planning horizon (e.g., Godwin, 1998; Hazembuller, Lombardi, & Hogarth, 2007; Kim & DeVaney, 2001). Each of these factors has been classified as either an affective reaction or a spontaneous impact. Attitude toward general credit and attitude toward risk exposure are measured as affective reactions because they are a reflection of the respondents' inner feelings. Planning horizon, on the other hand, is measured as a spontaneous impact because it requires previous thoughts and deliberation on the time span.

Affective Reactions

Chien and DeVaney (2001), Kim and DeVaney (2001), Hayhoe (2002), and Steidle (1994) found a significant relationship between general attitude and credit card usage. These studies found that households with positive and/or ambivalent attitudes toward general credit were more likely to carry a credit card balance. On the contrary, Durkin (2000) found that among credit card holders with an outstanding balance of more than $1,500, 57% expressed a negative attitude towards credit cards. Also, he found that among consumers who hardly ever pay their outstanding balance in full, 59% had negative attitudes towards credit cards. However, the Durkin study assessed consumers' opinions about credit cards as either a good thing or a bad thing, whereas Kim and DeVaney who also used the Survey of Consumer Finances (SCF) data, measured attitude toward credit cards as good, bad, and the combination of good and bad. The combination of good and bad, also referred to as ambivalent attitude, accounted for over 38% of responses. It is unclear where the ambivalent attitude responses were classified in the Durkin study, but with magnitude of over 38% it is likely to have had an impact on the results. The approach used by Kim and DeVaney appears

to be more appropriate for the purposes of the current study. Therefore, findings from the Chien and DeVaney, Kim and DeVaney, Hayhoe, and Steidle studies are used as a basis for a hypothesis.

> **Hypothesis 1.** Households with a negative attitude toward credit are more likely to be convenience users of credit cards.

A study by Crook (2001) found that consumers demand less debt when they are relatively risk averse. The study suggested that consumers may be wary of paying more for a purchase as a result of the additional interest charges. However, results from another study by Duca and Rosenthal (1993) showed that many financially-struggling families demand more household debt, such as credit cards, when they are risk averse. The explanation given by the authors was that some consumers may be afraid of committing to a formal bank loan, such as a house mortgage or an automobile loan, where they feel the stakes are too high for them. But a "petty" loan, such as credit card debt, does not appear as risky and intimidating to them despite the fact that the costs of the debt may be higher. Hazembuller et al. (2007) also found that credit card users who had low-risk tolerance were more likely to be credit card revolvers. Their study concluded that consumers with low-risk tolerance are more likely to feel that credit cards provide low-risk credit opportunities while consumers with high-risk tolerance are less likely to view and use credit cards as debt because they feel they have better opportunities with other loans. Based on the Duca and Rosenthal, as well as the Hazembuller et al. studies, it is inferred that high levels of risk tolerance may have a significant positive impact on being a convenience user.

> **Hypothesis 2.** Households with high-risk tolerance are more likely to be convenience users of credit cards.

Spontaneous Impacts

Godwin (1998) found that people who prefer present consumption over future consumption are more likely to borrow money. This finding was supported by Hazembuller et al., (2007) who found support that consumers with short planning horizons were more likely to be revolving users of credit than those with longer planning horizons. In addition, Kim and DeVaney (2001) found that holding a longer planning horizon is negatively related to being a revolving credit card user. These studies lead to the hypothesis that a longer planning horizon for saving and investing will be related to convenience usage of credit cards.

> **Hypothesis 3.** Households with longer planning horizons are more likely to be convenience users of credit cards.

Subjective Norms

Based on the theory of planned behavior, one's behavior is affected by subjective norms (Ajzen, 1991). Subjective norms consist of a person's beliefs about whether significant others think that he/she should engage in the behavior. Generally, subjective norms are assumed to assess the social pressures on individuals to perform or not perform a particular behavior (Ajzen, 1985).

Social norms dictate that lifestyles and expectations of people around an individual influence his/her purchasing decisions (Conner & Armitage, 1998). Also, according to the permanent income hypothesis, expectation of higher future income affects current consumption (Friedman, 1957). Both theories suggest that households who desire to hold a comparable lifestyle with those around them and expect higher income in the future will borrow in order to engage in behavior expected by their reference groups. In addition, when people try to conform to the social norms, they are more likely to buy on impulse, which is easy to do with credit cards since the purchase can be charged (Kaynak et al., 1986; Roberts & Jones, 2001). Katz (1997) made a distinction between basic needs and leisure activities and luxury expenses. She suggested that borrowing for expenses such as vacations, jewelry, or fur coats is beyond basic "creature" needs and is a result of social pressure. Based on the conclusions of these studies, the next hypothesis is developed.

> **Hypothesis 4.** Households that borrow for purchases that are beyond their basic needs are less likely to be convenience users of credit cards.

Age plays an important role in the consumer decision-making process (Schwarz, 2003). Based on the particular age group, consumers tend to base their decisions on different sets of values and as a result behave differently (Peterson, 2007). Previous research tested the influence of age as a continuous variable. Hamilton and Khan (2001) found support that age has a negative relationship with outstanding credit balances. However, Kim and DeVaney (2001) found that age follows the life-cycle hypothesis pattern (Ando & Modigliani, 1963) and as a result has a curvilinear relationship with outstanding credit balances. According to Kim and DeVaney, the probability of being a credit card revolver increases until around age 37 and decreases after that. This finding suggests that younger consum-

ers are faced with financial obstacles, such as lower-paying jobs and high expenses of raising a family, so there is a stronger incentive to borrow. In addition to the life-cycle hypothesis, this finding may also have been due to other explanations such as the generation effect, where the younger generation is more comfortable with borrowing money than the older generation. Based on these findings, it is reasoned that older consumers are more likely to be credit card convenience users than younger consumers.

> **Hypothesis 5.** Households with an older head of household are more likely to be convenience users of credit cards than those with a younger head of household.

Perceived Control

According to the theory of planned behavior, a person's behavior can be predicted by his/her perceived control of performing the desired task (Ajzen, 1991). Control is achieved through relevant resources and opportunities for performing a given behavior (Madden, Ellen, & Ajzen, 1992). Therefore, the more resources and opportunities individuals think they possess, the greater their perceived control over the behavior.

One important resource is information and knowledge about credit options. Credit knowledge can be obtained through self-education, such as previous experiences and analyses, or by referring to outside sources for advice. The most common sources of advice are financial experts (Elmerick, Montalto, & Fox, 2002), friends and family (Zimmermann, 2004), and mass media outlets (Ford, 1990). Gathering credit information is likely to increase consumers' perceived control of the accuracy of their decisions.

Several previous studies have attempted to profile consumers who are most likely to use a particular source of advice. According to Elmerick et al. (2002), consumers who turn to financial experts for advice typically have high debt-to-income ratios. Also, consumers who ask their friends and family for advice are young and have little knowledge about the subject (Lin & Lee, 2004). However, consumers who educate themselves through past experiences and mass media outlets, such as literature, television, radio, internet, and word-of-mouth, tend to have high-risk tolerance, a college education or advanced education, and income above $100,000 (Lin & Lee). Therefore, it is predicted that households that use financial experts and family/friends as a source of credit advice are less likely to be convenience users, while households that use mass media and existing knowledge as a source of credit advice are more likely to be convenience users.

> **Hypothesis 6.** Households that use financial experts and friends/family as a source of credit advice are less likely to be convenience users of credit cards than those who use credit information provided by mass media or previous experiences.

Another way of gaining control over credit card usage is by actively shopping for credit (Hazembuller et al., 2007; Kerr & Dunn, 2002). Actively shopping around allows the individual to compare different options and choose the option that is most appropriate to him/her. Although convenience users do not have to worry about credit card interest rates, their motivation for shopping for credit cards includes no annual fees, merchant acceptance of the card, and rewards (Furletti, 2003). Therefore, it is predicted that the more shopping that is done for credit, the more likely the user will be a convenience user, while the less shopping for credit is done, the more likely the user will be a revolver.

> **Hypothesis 7.** Households that shop a great deal for credit are more likely to be convenience users of credit cards.

A common argument in previous research is that past behavior is the best predictor of the future behavior (Conner & Armitage, 1998; Sutton, 1994). Kim and DeVaney (2001) found support that past payment habits were a significant predictor of credit card outstanding balances. Therefore, it is predicted that favorable payment habits in the past will be related to convenience use of credit cards.

> **Hypothesis 8.** Households without a previous history of late payments are more likely to be convenience users of credit cards.

Kim and DeVaney (2001) noted a significant relationship between attaining more education and credit card usage. Furthermore, Hazembuller et al. (2007) stressed the importance of education in having control over credit card balances. Therefore, it is predicted that individuals with higher levels of education will be more likely to be convenience users of credit cards.

> **Hypothesis 9.** Household heads with higher levels of education are more likely to be convenience users of credit cards.

Recent research indicates there is a significant relationship between household income levels and credit card usage (Baeck & Kim, 2005; Hazembuller et al., 2007; Kerr & Dunn, 2002). However, the results of these studies were mixed. Kerr and Dunn, as well as Baeck and Kim, suggested that those with a higher income were more likely to be revolvers, while Hazembuller et al. suggested that those with higher income were more likely to be convenience users. Nonetheless, since higher levels of income increase individuals' perceived control, it is predicted that those with higher household income will be more likely to be convenience users of credit cards.

> **Hypothesis 10.** Households with higher annual income are more likely to be convenience users of credit cards.

Methodology

Data and Sample

The data were drawn from the 2004 SCF, a triennial survey sponsored by the Board of Governors of the Federal Reserve System with the cooperation of the Statistics of Income Division of the Internal Revenue Service. The survey was designed to provide detailed information on the U.S. households' balance sheets, income, major expenses, use of credit, employment, and demographics (Kennickell, 2006). Information was collected from 4,519 households; however, this study was limited to only those households with at least one credit card account, so the sample was reduced to 3,476 households.

Dependent Variable

The dependent variable was convenience use of credit card debt. In the data set, the respondents were asked to state the balance still owed on their main credit card after the last payment was made to the account. This variable was recoded by classifying households with no outstanding balance as convenience users and households with a positive outstanding balance as revolving users of credit cards. Each response was coded as 1 if the household met the convenience user criterion and 0 otherwise. Since the sample was based only on households with at least one credit card account, all respondents who were not convenience users were designated as revolving users. See Table 1 for coding of the dependent variable.

Independent Variables

Based on the theory of planned behavior, three groups of independent variables were identified as behavior predictors: attitudes, subjective norms, and perceived behavioral control. The coding of the independent variables is presented in Table 1.

Attitudes. Attitude toward credit card usage was measured by general attitude toward credit, risk tolerance, and financial planning horizon. The 2004 SCF data set had limited questions that pertained to measures of attitude toward credit. However, according to Kidwell, Bringberg, and Turrisi (2003), risk tolerance and planning horizon are examples of variables that can predict money management attitude. The general attitude toward credit was measured as "credit is good," "credit can be good or bad," or "credit is bad." Risk tolerance was measured as "willingness to take above average financial risks," "willingness to take average financial risks," and "unwilling to take any financial risks." In the survey, respondents were asked which time period was the most important period for planning their household savings and spending. The financial planning horizon was measured as a "few months," " about 1 year," "a few years (2 to 4 years)," about "5 to10 years," and "over 10 years."

Subjective Norms. Subjective norms toward credit card usage were measured by the household's willingness to finance expenses that are commonly a result of normative pressure. Three variables were included to measure subjective norms. Borrowing for vacations and borrowing for purchases of luxury items were used to measure purchases beyond basic needs. Age was used to determine the age cohort of each respondent. The borrowing for vacations and borrowing for luxury items variables were measured as "yes" if the respondent was willing to use credit to finance that expense and "no" otherwise. The age variable referred to household heads and was measured as "under 30" years of age to capture young people many of whom are still single and/or in school, "between 30 and 44" years old for a population segment that is typically married with young children and holds steady but not high-paying jobs, "between 45 and 65" years old for people who are middle-aged with high income, and "over 65" years old for people who have entered the retirement stage of their life.

Perceived Behavioral Control. Perceived behavioral control of credit card usage was measured by five items which most households are able to at least partially control: source of credit knowledge, level of shopping for credit, past payment behavior, level of education, and household income. The source of credit knowledge was measured as "financial experts," "family/friends," "mass media," and "self-advice." The term "financial experts" referred

Table 1. Coding of Variables

Variable	Measurement
Dependent variable	
Convenience user of credit card	1 if yes, 0 otherwise
Independent variables	
Attitude toward behavior	
Attitude towards credit	
Good	1 if yes, 0 otherwise
Ambivalent (reference)	1 if yes, 0 otherwise
Bad	1 if yes, 0 otherwise
Risk tolerance	
High-risk tolerance	1 if yes, 0 otherwise
Moderate-risk tolerance (reference)	1 if yes, 0 otherwise
No tolerance for risk	1 if yes, 0 otherwise
Planning horizon	
Few months	1 if yes, 0 otherwise
About 1 year	1 if yes, 0 otherwise
Few years (reference)	1 if yes, 0 otherwise
5 to 10 years	1 if yes, 0 otherwise
Over 10 years	1 if yes, 0 otherwise
Subjective norms	
Use credit for vacations	1 if yes, 0 otherwise
Use credit for luxury items	1 if yes, 0 otherwise
Age	
Under 30	1 if yes, 0 otherwise
30 to 44	1 if yes, 0 otherwise
45 to 65 (reference)	1 if yes, 0 otherwise
Over 65	1 if yes, 0 otherwise
Perceived behavioral control	
Source of financial credit advice	
Financial experts	1 if yes, 0 otherwise
Friends and family	1 if yes, 0 otherwise
Media	1 if yes, 0 otherwise
Self-advice (reference)	1 if yes, 0 otherwise
Level of shopping for credit	
No shopping	1 if yes, 0 otherwise
Moderate shopping (reference)	1 if yes, 0 otherwise
Great deal of shopping	1 if yes, 0 otherwise
Past payment behavior	
On schedule	1 if yes, 0 otherwise
Behind schedule (reference)	1 if yes, 0 otherwise
Level of education	
Less than high school	1 if yes, 0 otherwise
High school (reference)	1 if yes, 0 otherwise
Some college	1 if yes, 0 otherwise
College	1 if yes, 0 otherwise
Income/$10,000	Continuous

to professionals such as lawyers, accountants, bankers, brokers, and financial advisors. "Family/friends" referred to people who have strong personal relationships with the decision maker. "Mass media" was comprised of television, radio, internet, magazines, newspapers, and mail-in material. "Self-advice" referred to making decisions using one's own judgment without referring to outside sources of information.

The level of shopping for credit was measured as "no shopping," "moderate shopping," and a "great deal of shopping." The past payment behavior was measured as "on schedule" payments and "behind schedule" payments. The level of education was measured only for the head of household and was categorized as: less than 12 years of education, high school graduate, some college education (13 to 15 years), and college education for 16 and above years. Household income, a continuous variable, included income received by the household in 2003 from all sources before taxes and other deductions were made. To make income levels easier to interpret, the household income variable was converted into units of $10,000.

Analysis of Data

Descriptive statistics were conducted to examine the characteristics of households. Chi-square analysis was conducted to understand the relationships between the variables and convenience use or revolving use of credit cards. *T-tests* were conducted to compare the mean of household income, the only continuous variable, between the convenience users and the revolving users. Logistic regression was conducted to predict and explain the dependent variable using a covariate of independent variables (Hair, Black, Babin, Anderson, & Tatham, 2006). Logistic regression is a statistical tool that is used to predict the likelihood of a discrete outcome from a set of variables that may be continuous, discrete, dichotomous, or a combination. Since the dependent variable in the current study is dichotomous (1 if convenience user and 0 otherwise) logistic regression is the appropriate method to predict the likelihood of the dependent variable occurring given the set of independent variables.

Results

Descriptive Statistics

To apply the results of this study to the entire U.S. population, a weight variable provided by the Federal Reserve was used (Kennickell & Woodburn, 1999). Therefore, the reported population percentages, mean values, and standard deviations were weighted to represent all U.S. households. See Table 2 for a summary of descriptive statistics.

On average, 43.65% of U.S. households with credit cards were convenience users. About one third (32.44%) of the households said that "credit was good," one third (29.64%) said "credit was bad," and about one third (37.92%) said that "credit could be good or bad." In the risk tolerance category, 44.55% had a moderate tolerance for risk, 33.30% had no tolerance for risk, and 22.15% had a high tolerance for risk. Based on the sample that was used, 28.20% of respondents stated that their preferred planning horizon for saving and investing was between 5 and 10 years, and 15.63% said their preferred planning period was over 10 years.

The majority of respondents did not think favorably of borrowing for purchases beyond basic needs, since only 15.04% and 6.52% approved borrowing for vacations and luxury purchases, respectively. Over half of respondents (57.91%) reported that their first choice for credit information is education material provided by media sources such as television, radio, internet, newspapers, magazines. About 20% of households used financial experts, and 12% used friends and family for credit advice. Only 10% of respondents stated that they preferred to make credit decisions by themselves.

Slightly over half (54.38%) of the sample did a moderate amount of shopping for credit, while a fifth (21.12%) did no shopping, and a fourth (24.50%) did a great deal of shopping. Most respondents (72.50%) said they made their payments on schedule. About 39% of respondents were between 45 and 65 years of age. Almost 92% of the respondents had at least a high school education, and about two thirds (65%) of respondents had at least some college education. The average annual household income for these households who held at least one credit card was $83,350.

Test of Relationship Between Convenience and Revolver Users of Credit Cards

The relationship between the categorical independent variables and the types of credit card usage was analyzed with a chi-square test. See Table 3 for a summary of chi-square results. Each relationship was statistically significant. The convenience users tended to have a less favorable attitude toward credit, while revolving users were more positive, thus supporting previous research that the ambivalent attitude category played an important role in the attitude of credit card users (Chien & DeVaney, 2001; Hayhoe, 2002; Kim and DeVaney, 2001; Steidle, 1994). The convenience users had a higher level of risk tolerance than the revolving users. Convenience users put more importance on long-

Table 2. Statistics of Households in the 2004 SCF with at Least One Credit Card (*N* = 3,476)

Variable	Population %	*M*	*SD*
Dependent variable			
Convenience user of credit cards	43.65		
Independent variables			
Attitude toward behavior			
Attitude towards credit			
Good	32.44		
Ambivalent	37.92		
Bad	29.64		
Risk tolerance			
High-risk tolerance	22.15		
Moderate-risk tolerance	44.55		
No tolerance for risk	33.30		
Planning horizon			
Few months	15.61		
About 1 year	12.43		
Few years	28.13		
5 to 10 years	28.20		
Over 10 years	15.63		
Subjective norms			
Use credit for vacations	15.04		
Use credit for luxury items	6.52		
Age			
Under 30	10.73		
30 to 44	29.30		
45 to 65	39.11		
Over 65	20.86		
Perceived behavioral control			
Source of financial credit advice			
Financial experts	19.77		
Friends and family	12.22		
Media	57.91		
Self-advice	10.09		
Level of shopping for credit			
No shopping	21.12		
Moderate shopping	54.38		
Great deal of shopping	24.50		
Past payment behavior			
On schedule	72.56		
Behind schedule	14.83		
Do not have monthly payments	12.61		
Level of education			
Less than high school	8.03		
High school	27.32		
Some college	24.10		
College	40.55		
Income		$83,350	$240,372

Table 3. Chi-square Tests for Households in the 2004 SCF with at Least One Credit Card (*N* = 3,476)

Variable	Convenience User (*n* = 2,014)	Revolving User (*n* = 1,462)	*p*
Attitude towards credit			***
Good	26.86	37.55	
Ambivalent	35.40	37.89	
Bad	37.74	24.56	
Risk tolerance			***
High-risk tolerance	33.27	23.19	
Moderate-risk tolerance	49.80	42.07	
No tolerance for risk	16.93	34.75	
Planning horizon			***
Few months	8.99	17.72	
About 1 year	7.20	14.30	
Few years	22.69	27.63	
5 to 10 years	35.10	26.33	
Over 10 years	26.02	14.02	
Maintenance of standard of living			
Use credit for vacations			***
Yes	11.47	19.56	
No	88.53	80.44	
Use credit for luxury items			*
Yes	6.16	8.28	
No	93.84	91.72	
Age			***
Under 30	4.02	11.29	
30 to 44	17.43	34.95	
45 to 65	51.84	42.89	
Over 65	26.71	10.88	
Source of financial credit advice			***
Financial experts	29.79	18.06	
Friends and family	7.85	13.20	
Media	43.84	62.79	
Self-advice	18.52	5.95	
Level of shopping for credit			***
No shopping	26.76	19.36	
Moderate shopping	47.86	57.52	
Great deal of shopping	25.37	23.12	
Past payment behavior			***
On schedule	94.55	76.54	
Behind schedule	5.45	23.46	
Level of education			***
Less than high school	4.27	7.87	
High school	14.20	29.48	
Some college	13.95	26.54	
College	67.58	36.11	

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

term financial planning, while more revolving users were concerned with short-term planning. More of the revolving users of credit cards were willing to use credit for vacations and luxury purchases. More of the convenience users were over 45 years old.

A higher percentage of the convenience users used either financial experts or self-advice, while more of the revolving users used friends or family and mass media material for credit advice. Although professional advice from financial experts is essentially the opposite of self-advice, this finding suggests that when convenience users are faced with complicated financial decisions, they are more likely to turn for help to financial experts; otherwise, they are more likely than the revolving users to use their own judgment. The level of shopping for credit showed that the convenience users were more likely to either not shop for credit at all or to do an extensive search but were less likely to do moderate shopping around for credit when compared to the revolvers. More of the convenience users paid their bills on schedule, as compared to the revolving users. Almost twice as many convenience users were college graduates, while about twice as many revolving users had less than a college degree education.

A *t-test* was conducted to examine the difference in the mean of household income between convenience users and revolving users of credit cards. The average annual income for convenience users was $110,717, as compared to revolving users' income of $62,184. Therefore, the results showed that the difference in the means for household income was statistically significant.

Results of Logistic Regression on Type of Credit Card Usage

The results of logistic regression for convenience users of credit cards are presented in Table 4. Odds ratios were used to compare the magnitude of the effect that each independent variable had on the dependent variable.

Attitude Toward Behavior. Most of the attitude variables were significantly related to the likelihood of being a convenience user of credit cards. Compared to respondents with an ambivalent attitude toward credit, those who think that credit is a bad idea were 44.1% more likely to be convenience users of credit cards, while those who think that credit is a good idea were 21.4% less likely to be convenience users. Although there was no significant difference between households with moderate and high-risk tolerance, those with no risk tolerance were 47.1% less likely to be convenience users. Length of the planning horizon was related to convenience usage of credit cards. Compared to households with a planning horizon of 2 to 4 years, those with a planning horizon of over 5 years were more likely to be convenience users. The results were not significant for households with planning horizons of less than 2 years.

Subjective Norms. Two of the three subjective norm variables were significant. As predicted, convenience users were 39.7% less likely to say it was all right to use credit for vacations. There was no support for the hypothesis about using credit for luxury expenses. This might be due to the small percentage of respondents (6.52%) who preferred to use credit for luxury items. Compared to household heads between 45 and 65 years of age, those who were younger than 30 years old were 39% less likely to be convenience users, those who were between 30 and 44 years of age were 41% less likely to be convenience users, while those who were over 65 years old were 145.7% more likely to be convenience users.

Perceived Behavioral Control. Most of the variables measuring perceived behavioral control were significantly related to convenience use of credit cards. Compared to households who depended on themselves for information about credit, those who went to financial experts for credit advice were 43.2% less likely to be convenience users, those who asked their friends/family for advice were 55.7% less likely to be convenience users, and those who used mass media as a source of information about credit were 63.8% less likely to be convenience users.

Shopping for credit appeared to play a significant role in predicting convenience use of credit cards. Compared to those who made a moderate effort to shop for credit, households that shopped a great deal for credit were 36.8% more likely to be convenience users. There was no difference between those who did not shop for credit and those who did a moderate amount of shopping in the likelihood of being a convenience user. Consumers who made their payments behind schedule were 79.1% less likely to be convenience users than those who paid their bills on schedule.

The results showed that having higher education and higher income had an effect on being a convenience user. Compared to households whose head had only a high school education, those with a college education were 142.5% more likely to be convenience users of credit cards. For every $10,000 increase in household income, households were 1.3% more likely to be convenience users of credit cards.

Table 4. Logistic Regression Predicting Convenience Users of Credit Cards for Households in the 2004 SCF with at Least One Credit Card (*N* = 3,476)

Independent Variables	Parameter Estimate	*p*	Odds Ratio
Attitude toward behavior			
Attitude towards credit (reference group = ambivalent)			
Good	-0.2406	*	0.786
Bad	0.3650	***	1.441
Risk tolerance (reference group = moderate-risk tolerance)			
High-risk tolerance	0.0557		1.057
No tolerance for risk	-0.6360	***	0.529
Planning horizon (reference group = about 2 to 4 years)			
Few months	-0.1932		0.824
About 1 year	-0.1778		0.837
5 to 10 years	0.2503	*	1.284
Over 10 years	0.4299	***	1.537
Subjective norms			
Use credit for vacations	-0.5055	***	0.603
Use credit for luxury expenses	-0.0241		0.786
Age (reference group = 45 to 65)			
Under 30	-0.4940	**	0.610
30 to 44	-0.5276	***	0.590
Over 65	0.8988	***	2.457
Perceived behavioral control			
Source of credit advice (reference group = self education)			
Financial experts	-0.5649	***	0.568
Friends/family	-0.8151	***	0.443
Media	-1.0155	***	0.362
Level of shopping for credit (reference group = moderate shopping)			
No shopping	0.1061		1.112
Great deal of shopping	0.3134	**	1.368
Past payment behavior (reference group = on schedule)			
Behind schedule	-1.5659	***	0.209
Level of education (reference group = high school)			
Less than high school	0.2711		1.311
Some college	0.1754		1.192
College	0.8857	***	2.425
Income/$10,000	0.0128	***	1.013
Intercept	0.4284	*	

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

Study Limitations and Future Research

As with all research, some limitations of this study need to be addressed. First, the causality between the variables and credit card use behavior is uncertain. Although each variable was based on previous literature as a predictor of behavior, it is possible that they may not hold under some unique circumstances. Because the SCF data is cross-sectional, the time order between predictors and behavior is not known. Second, the SCF contains only a few variables that specifically measure credit card usage. It is suggested that a survey should be developed to specifically identify attitudinal factors related to being a convenience user of credit cards. Another suggestion for future research is to compare the results of this study against previous and subsequent SCF surveys to learn if the results are consistent.

Conclusions and Implications

A contribution of this study was examining how components of the theory of planned behavior influence credit card users' convenience or revolving behavior. The results provide an extension to the existing knowledge on credit card usage. By identifying factors that measure attitude, subjective norms, and perceived behavioral control, the research was able to focus on several important predictors of convenience use of credit. As a result, personal finance educators and financial advisors can gain a deeper understanding of the attitude and behavior that motivates consumers in their use of credit cards. In addition, findings from this study provide further insight of how financial advisors and educators can help credit card revolving consumers to change their behavior and use credit cards as a convenience tool. For example, the discussion of findings provides specific suggestions on how financial advisors and educators can reach out to consumers who do not use financial services and encourage these consumers to come to their office for financial advice, better education about credit, and help with developing a spending plan.

As hypothesized in hypothesis 1, attitude toward credit influenced the likelihood of being a convenience user of credit cards. This confirms previous research that consumers who do not favor using credit to make purchases generally do not like carrying a balance on their credit cards (Chien & DeVaney, 2001; Kim & DeVaney, 2001; Hayhoe, 2002; Steidle, 1994). This finding suggests that convenience users tend to be conservative with their money and use of credit. Another possible explanation is that convenience users do not carry credit card balances due to fear and concern over debt. Regardless of the reason, it appears that consumers with negative attitudes toward credit adjust their behavior to avoid paying unnecessary financing charges; as a result, they do not view credit cards as a credit option. On the other hand, consumers who think that credit in general is useful and helpful to them are more likely to carry outstanding balances on their credit cards. This finding suggests that consumers who view credit favorably tend to use it excessively without realizing the consequences of credit mismanagement, such as high interest rates and overspending. Financial advisors and educators must focus on helping consumers understand that how they view credit influences their financial behavior and as a result their financial success. An emphasis must be made to point out that it is better to have a negative attitude toward credit and avoid using credit cards as an easy access to credit. However, consumers must also understand that in some instances, such as when purchasing a house, borrowing is an acceptable option that should not be overlooked. Perhaps financial advisors and educators can use a case study to help consumers understand the problems related to excessive use of credit.

Respondents' willingness to take various levels of financial risk has a significant impact on their use of credit cards. Consumers who are not willing to take financial risks are less likely to be convenience users of credit cards than those who take moderate financial risks. This result partially supports hypothesis 2; significant support was found for differences between no risk and moderate risk, although the difference between high risk and moderate risk was not significant. However, the results provide empirical support in the debated issue of how consumers' risk levels affect their credit card usage. This study supports previous research that consumers who do not take any financial risks are likely to perceive credit card debt as low-risk not necessarily because of their competitive interest rates with other forms of credit but because they face lower risk of being turned down for credit and do not have to commit themselves to a large installment loan (Duca & Rosenthal, 1993; Hazembuller et al., 2007). In addition, the results suggest that consumers make rational decisions based on their own knowledge and interpretations, which are not necessarily the most efficient in economic terms. More consumer education is needed about the risks and benefits of using credit cards. If consumers understand the risk that revolving use of credit cards poses to their long-term financial well-being, they might reconsider being a revolver and attempt to change to convenience use of credit.

Financial planning horizons of at least 5 years had a significant influence on convenience use of credit cards. However, planning horizons of shorter periods of time did not have a significant impact on being a convenience user. Therefore, hypothesis 3 was partially supported. This result suggests that households that focus on their long-term finances are more likely to plan their consumption based on their available income without incurring credit card debt. The finding suggests that planning horizons of just a few years are not enough to incorporate long-term expenses, such as mortgage, college expenses, retirement, etc. In order to be able to effectively spread income from one time period to another requires an extensive planning process. Financial advisors and educators must encourage and assist their clients in preparing budgets and other financial plans that extend beyond 5 years. As suggested by DeVaney, Gorham, Bechman, and Haldeman (1996), well thought-out budgets and cash flow management plans will provide consumers with a guide for their financial behavior in paying off existing debt and saving for the future.

Currently, many consumers want to occasionally splurge to impress or keep up with their peer groups. However, such spending might shift them from convenience use of credit to revolving use of credit. Hypothesis 4 was partially supported; the results show that households that borrow to cover vacation expenses are less likely to be convenience users. More financial education is needed to help consumers understand the importance of planning their expenses to match their income and to allow for saving. Consumers also need tips for coping with the pressure to spend more than they can afford in order to keep up with their referent groups.

Age cohorts are known to prefer different spending behaviors (Peterson, 2007). Based on previous studies, hypothesis 5 hypothesized that older consumers were more likely to be convenience users of credit cards than those who were middle-aged or younger (Hamilton & Khan, 2001; Kim & DeVaney, 2001). The results showed that households whose heads are at least 45 years old are more likely to be convenience users than those who are younger than 45. Since over 40% of credit card users are under 45 years of age, this age group deserves special attention from researchers, financial advisors, and educators to identify potential financial management problems and suggest behavior to improve their financial management skills. Compared to household heads who feel sufficiently well-informed to make their own decisions, those who use outside sources (such as financial experts, friends, family, and mass media materials) are significantly less likely to be convenience users of credit cards. This result suggests that consumers who make credit decisions on their own are more knowledgeable about credit management and are more experienced in the field of personal finances. In addition, this result suggests that revolving credit card users tend to seek professional financial advice retroactively. This finding carries an important implication for financial advisors, since the revolvers are typically in weaker financial situations. According to the chi-square analysis, 62.79% of revolvers use mass media materials as a source of financial advice; therefore, financial advisors and educators should use those media sources to reach the financially struggling consumers and encourage them to come for professional financial services and advice on a regular basis.

Extensive shopping for credit information is an excellent means of saving money. Consumers who do a great deal of shopping for credit are likely to find loans with good terms and conditions as well as being more likely to be convenience users of credit cards. Although for convenience users the credit card APR is not of importance, searching for a card that does not have hidden fees is widely accepted by various merchants, provides rewards and perks, and has good security features takes effort. Since the revolving users typically do not engage in an extensive search for credit, they put themselves at risk of overlooking some important terms and conditions before accepting the card. For example, if the revolving user looks only for a low APR, he/she is at risk of overlooking the annual fee on one card or passing over some advantageous rewards offered by another.

Financial advisors and educators must focus their efforts on improving consumers' personal finance management skills by encouraging consumers to conduct a thorough research of credit options before making their final decisions. In addition, financial advisors and educators should help their revolving credit card user clients by evaluating the clients' current credit cards and educate them in what to look for when searching for a new credit card. Whenever possible, financial advisors should recommend credit cards that require all balances to be paid in full at the end of every month. Such credit cards may be used as a training tool to assist revolving users to get in the habit of paying off their credit cards on a regular basis.
Making payments behind the scheduled date has numerous repercussions, such as late fees and a record on the credit report. In addition, according to the current study consumers with a history of late payments are less likely to

pay off their credit cards in full at the end of each month. This result may be due to poor financial management skills. Financial advisors and educators should stress the importance of these skills to improve consumers' financial competency. Learning how to properly handle financial responsibilities is likely to increase consumers' control over credit behavior.

Higher levels of education offer many advantages to consumers, such as higher paying jobs. However, compared to households whose head had a high school education, only those with a college degree were significantly more likely to be convenience users of credit card, while those with less than high school and some college education were not significantly related to being a convenience credit card user. Many previous studies have also shown that consumers, especially students, severely lack in comprehension of personal finance topics (DeVaney et al., 1996; Lyons & Hunt, 2003; Peng, Bartholomae, Fox, & Cravener, 2007). Educators and legislators should work to increase financial management education in middle schools and high schools. By providing students with strong financial management tools early in life, they are likely to influence a person to be a convenience credit card user. Financial advisors, educators, and legislators should work closely together to allocate adequate resources for middle and high school financial management education, provide educators from other specialty areas with training (including a competency test) to teach personal finances, and monitor the students' financial knowledge.

Affluent households typically have more income that they can use to pay off credit card balances. However, although hypothesis 10 received significant support, for every $10,000 increase in household annual income, the likelihood of being a convenience user of credit cards increases by only 1.3%. These results suggest that being either a convenience or revolving user of credit card debt depends on consumer behavior patterns. The finding confirms the study by Gross and Souleles (2002). Financial advisors should be aware that compared to their peers, clients with outstanding credit balances might not experience a shortage of income, but instead are mismanaging their money in a form of overspending. Financial advisors are encouraged to evaluate their clients' spending and suggest that the clients cut unnecessary expenditures. In addition, financial advisors are encouraged to provide their clients with templates of how their goals can be achieved without crossing the budget limits.

In conclusion, it is indisputable that credit cards are an important part of most U.S. consumers' everyday lives. However, although credit cards have been in use for decades, many consumers still have misconceptions about the proper use of credit cards and put more charges on their credit cards than they can afford to pay off at the end of the month, thus falling into the trap of revolving credit with high interest rates that accrue on unpaid balances every month. It has been the purpose of this research to help such consumers by using the theory of planned behavior to analyze the factors that influence consumers to pay off their credit card balances. The results of the study suggest that financial advisors and educators who seek to help revolving users of credit cards do the following: try to discourage clients' positive and irresponsible attitudes toward credit, encourage clients to make financial plans that extend beyond 5 years, promote financial education, and use mass media outlets to persuade consumers who are not comfortable making financial decisions on their own to ask for advice from a local financial professional.

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