The Role of Dual-Self Constructs in Determining Payment Card Choice: Insights for Working with Credit Card Borrowers

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Evidence has shown that consumers are better off using credit cards rather than debit cards as a payment choice (King & King, 2005). This assumes that credit card payers are "convenience users" and do not carry a balance. However, there are habitual credit card borrowers ("revolving users"), as well as those that elect to use debit cards, even though the costs outweigh the benefits. By examining the determinants of payment choice, with a specific focus on dual-self constructs (attitudes, myopia, and financial sophistication), results from this study can provide insight for financial professionals to help mitigate the incidence of revolving credit card users. Using data from Survey of Consumer Finances (SCF) collected between 1998 and 2013, results indicated that while myopia does not explain variation between revolving credit and debit card users, differences in attitudes exist. All dual-self constructs discriminated between revolving and convenience credit card users, with attitudes having the greatest effect. Combining results from these payment choice profile comparisons suggested that financial professionals may find value in initially encouraging revolving credit card users to be debit card users, while working to change credit attitudes, with the goal of transitioning these former revolvers to convenience credit card users.

Keywords: credit attitudes; dual-self; credit card usage

INTRODUCTION

Households have had many choices when it comes to paying for goods and services. The main payment methods included cash, check, credit cards, and debit cards. Through an extensive study, Herbst-Murphy (2015) found that with check usage declining, households tend to use a card to pay for goods and services. There are two main choices when it comes to payment cards – debit and credit. Debit cards are payment cards that pull funds directly from a bank account. Households can use credit cards in two ways: as a convenience user who pays off the balance every month, or as a revolving user who maintains a balance each month. King and King (2005) provided evidence that households will always be better off choosing a credit card over a debit card. The authors suggested households should solely use a credit card because of the benefits they provide. In addition, Zinman (2009) argued that

debit cards offer no benefit for neoclassical consumers (i.e., convenience users). However, the use of debit cards have increased significantly over the past several years (Herbst-Murphy, 2015) and more consumers are using debit cards than credit cards (Stango & Zinman, 2008). Consumers tend to "specialize in their payment choices" meaning that consumers tend to use a card consistently for all purchases rather than switching between payment methods (Stango & Zinman, 2008).

Households select a preferred payment method based on various benefits and costs. The benefits of using a credit card are the ability to float purchases, low (often zero) liability protection, the perks of rewards programs, and the potential to build credit. Costs associated with credit cards are primarily invoked when the card is used a borrowing instrument (e.g., high interest rate for revolving balances, high fees associated with late payments, and fees for carrying a balance over the limit). Debit cards also have both positive and negative characteristics. First, they are widely accepted and are available for consumers that do not have access to credit. Debit cards are also used as a means to control spending for some consumers (Borzekowski, Kiser & Ahmed, 2008; Sprenger & Stavins, 2010; Rogers & Dopico, 2010). However, debit cards can lead to expensive overdraft fees (Stango & Zinman, 2008; Parrish, 2009) and debit card usage is the most likely cause of overdraft fees. Hayashi and Stavins (2012) suggested that those who use debit would face higher debit fees. Debit cards are also risky if the card has been used in situations where the card is not kept in sight, like at a restaurant (Rogers & Dopico, 2010), as well as being susceptible to fraud and identity theft.

From a purely economic perspective, it would appear there is no legitimate role for debit cards in the card payment landscape. Debit cards are an irrational choice because they do not have any tangible benefits compared to credit cards. As King and King (2005) and Zinman (2009) suggested, all households should be credit card users, more specifically convenience credit card users, to benefit from the many advantages of using a credit card. However, there are plenty of people that find themselves regularly using credit cards as debt instruments. How can we help these borrowers, or revolving credit card users, become habitual convenience users? Do they need more education (i.e., a cognitive, human capital) enhancement? A behavioral and/or attitudinal adjustment? Or a combination of all three? By examining the profiles of payment card users – debit and credit (both revolving & convenience users) – perhaps we can extrapolate insights to help reduce the incidence of habitual credit card borrowers.

LITERATURE REVIEW

Since the household tends to use the same payment method across all purchases (Stango & Zinman, 2008; Herbst-Murphy, 2010), examining the rationale behind the chosen payment method can provide insight to a household's financial behavior. Previous research suggested various factors influence a household's choice of debit or credit card choice. The amassed literature reveals several payment card choice determinants including credit attitudes, orientation to time (i.e., present vs. future), financial literacy, education, gender, age, past experiences, card characteristics, income, and wealth.

Dual-Self Models

From a theoretical viewpoint, individuals should choose the payment method that is the least expensive and provides the most reward. From a strictly rational perspective, the evidence is clear that households would all benefit from being convenience credit, rather than debit, card users. However, debit card use is rising and many people habitually invoke the debt instrument features of their credit cards, thus becoming revolving credit card users. Dual-self models, such as the Economic Theory of Self Control, posit that individuals have competing, dual-selves – the "doer" self and the "planner" self (Thaler & Shefrin, 1981). The doer self tends to be ruled by the intuitive-experiential brain system that is fast, instinctual, and emotionally driven, while the planner self is driven by the analytical-rational brain system that is slow, careful, and logical. The doer is nearsighted, myopic, and concerned with using resources in the current period, while the planner is farsighted and focuses on overall lifetime utility.

Several studies use this framework and find that households face issues with self-control when the doer self is more dominant. For example, Meier and Sprenger (2010) found that households that have a dominant doer-self are more likely to have credit card debt, higher levels of credit card debt, and less control with disposable income than those with a dominant planner-self. Bertaut, Haliassos, and Reiter (2009) proposed a similar model to the planner/doer self by suggesting the household in an accountant/shopper framework. The researchers find that the planner self, or accountant, will choose not to pay off credit card balances in order to impose control over the doer self, or shopper. By reducing the available spending limit on the credit card, the planner controls the doer who is now unable to consume more in the current period.

In addition to the planner/doer self, researchers hypothesized that if an individual can picture their future self, they will postpone consuming current resources in favor of saving for future time periods. For example, a study reviewed the dual-self framework regarding retirement savings (Hershfield et al., 2011). In the study, Hershfield and colleagues (2011) manipulated digital images of the participant's future self to reframe the advantages of saving in future periods. The authors suggested that when participants imagine their future selves they would have a tendency to postpone current consumption. The study found that the future self (planner self) would increase savings for future periods, specifically retirement savings.

If one's doer self has a stronger influence, this may entice an individual into habitually revolving debt either through myopia (Gathergood, 2012), positive credit attitude (Chien & DeVaney, 2001), or through a combination of both. Conversely, a negative credit attitude may induce a fear reaction that could provide a catalyst for choosing a debit payment card (Sprenger & Stavins, 2010). Convenience credit card users are characterized by being primarily influenced by the planner self, as evidenced by their relatively high investment in cognitive, human capital specific to personal finance (i.e., financial literacy) (Mottola, 2013).

Credit Attitude

Attitudes are opinion-based heuristics that are readily used by the doer self to aid in decision-making. Attitudes about using credit are generally either positive or negative and provide insight into one's willingness to act. Previous studies agreed that households with a

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positive attitude toward credit tend to use credit cards more freely. Using the Survey of Consumer Finances, Bertaut and Haliassos (2001) used variables such as household willingness to buy furs and jewelry on credit, and willingness to use credit for daily living to measure credit attitude and self-control. Hayhoe, Leach, Turner, Bruin, and Lawrence (2000) found that attitude toward credit influences college students' credit card purchasing behavior. Students with a negative attitude toward credit will feel sorry for making a purchase compared to those with a positive attitude. In addition, the authors found that the more positive the attitude toward credit, the more likely the student is to revolve a credit card balance (Hayhoe et. al, 2000). Although these papers bolster the literature around credit card use and credit attitude, college students are not representative of the general population. In addition, studies found that a positive attitude toward credit have been related to a higher credit card balance (Chien & DeVaney, 2001) and are less likely to be convenience credit card users (Rutherford & DeVaney, 2009). However, it appears this relationship is not monotonic, as Durkin (2000) found that those who have the highest number of credit cards and revolving balances tend to have a negative attitude toward credit cards.

Myopia

Studies have defined myopia as focusing on short-term outcomes (Benartzi & Thaler, 1995; Montier, 2010). Strotz (1955) proposed individuals have conflicting preferences that influence their ability to optimize future behavior. Thaler and Shefrin (1981) suggested the planner self is farsighted (more future oriented) and focused on overall lifetime utility while the doer self is myopic (more present oriented) and focused only on the current period. Meier and Sprenger (2010) found that a consumer's level of myopia influenced the choice of payment method. Many consumers chose to use a debit card for budgeting and control purposes (Sprenger & Stavins, 2010). Although some studies suggested that individuals use debit cards as a control mechanism, others fail to find significant results. For example, Borzekowski, Kiser, and Ahmed (2008) found that only 5.8% of the sample uses a debit card to restrain their spending while Fusaro's (2013) findings did not show evidence to support that debit cards are used to control spending.

Other studies found that consumers use debit cards to control spending, especially with credit cards. Sprenger and Stavins (2010) and Lee, Abdul-Rahman, and Kim (2007) discovered that households who revolve their credit card balance are more likely to adopt and use a debit card. In addition, Stango and Zinman (2008) suggested that revolving status should be the single greatest factor in choosing between payment methods (debit card vs. credit card). According to theory, convenience users should prefer a credit card since these users can float the loan, and avoid costly fees, among other benefits associated with credit cards. Therefore, revolving users should prefer a debit card since revolving a balance often involves high fees and interest payments.

Human Capital

Human capital refers to one's stock of knowledge and skills (Becker, 1962). Human capital is either endowed (i.e., strength, intelligence, and cognitive ability) or acquired. Acquired human capital includes education and financial management behaviors. Individuals can improve their human capital by obtaining a college education, by gaining

experience with financial behaviors, or by taking financial courses to improve their ability to understand financial decisions. Although education and financial experience are both acquired human capital, they are different because education is general human capital, where financial experience is a specific form of human capital. Human capital specific to personal finance is financial literacy (Huston, 2010).

A household's level of human capital influences the ability to make efficient financial decisions. Households with a higher level of financial human capital (i.e., more financial experience and sophistication) have the potential to improve their ability to make effective and efficient financial decisions. Households that perform more positive financial behaviors (i.e., better financial managers) will have a higher level of human capital.

One's human capital – both in general and to a greater extent more specific (i.e., financial literacy) – has a direct impact on payment card choice. Human capital influences the choice of payment method by limiting the available options, as well as the method the household ultimately chooses. The reasoning is that those who are more financially sophisticated (higher human capital) will be able to detect the benefits and choose to be a convenience credit card user.

However, there are conflicting findings regarding specific (financial sophistication) and general (education) human capital and card use. First, Stango and Zinman (2008) found that heavy credit card users (or households that only use a credit card or use a credit card on the majority of their purchases) are more sophisticated, while debit card users are less sophisticated. King and King (2005) showed that debit card use increases with education until the level of college degree. Households with a college degree are no more likely to use a debit card than those with only a high school degree. The authors proposed that those with a college education are more financially sophisticated and therefore know the benefits of using a credit over a debit card (King & King, 2005).

Other Determinants

There are other determinants that have been found to explain variation in payment card choice that simultaneously embody varying degrees of the dual-self constructs (credit attitude, myopia, and financial literacy) such as *gender* (Herbst-Murphy, 2015; Borzekowski, Kiser, & Ahmed, 2008; Choe, Yoon & Johnson, 1991; Ching & Hayashi, 2010) as well as *age*, *level of formal education*, and *experience* (de Bassa Scheresberg, Lusardi & Yakoboski, 2014; Rogers & Dopico, 2010; King & King, 2005; Hayashi & Stavins, 2012; Borzekowski & Kiser, 2008; Rysman, 2009). As such, the study controlled for these determinants in the multivariate analyses but will not be the focus of this study because of their inherent construct interconnectedness.

PURPOSE

The purpose of this research was to examine how constructs related to dual-self brain systems (i.e., doer and planner) can explain variation in payment card choice and help financial professionals understand which elements are most important when developing best practices in working with clients who are typically revolving credit card users (borrowers). This study focused on how credit attitudes, myopia, and financial sophistication relate to payment card choice among American adults.

HYPOTHESES

Using the Economic Theory of Self Control, the following hypotheses were generated to test the influence of credit attitudes, myopia, and financial sophistication in relation to payment card choice by comparing revolving credit card users (borrowers) with both debit card users and convenience credit card users:

H1:   Individuals with positive credit attitudes are more likely to be revolving credit card users compared to both debit card and convenience credit card users.

H2:   Individuals with a higher degree of myopia are more likely to be revolving credit card users compared to convenience credit card users.

H3:   Individuals with a higher degree of myopia are no more or less likely to be revolving credit card users compared to debit card users.

H4:   Individuals with higher financial sophistication are more likely to be revolving credit card users compared to debit card users.

H5:   Individuals with higher financial sophistication are less likely to be revolving credit card users compared to convenience credit card users.

METHODS

Data

The data used were from the first implicate of the 1998-2013 Survey of Consumer Finances (SCF), a triennial survey, sponsored by the Federal Reserve Board and collected by the National Organization for Research at the University of Chicago (Board of Governors of the Federal Reserve System, 1998-2013). The SCF collected detailed information on the finances of U.S. households. The combined number of observations in the public data set is 30,180 households. The sample size was limited to households that only use a debit card or only use a credit card. The limited sample size was 13,137 respondents.

Operationalization of Concepts

This study aimed to provide empirical evidence of the relation between the dual-self constructs – credit attitude, myopia and financial sophistication – and payment card choice. Credit attitude is reflective of the dual-self constructs in the following ways. The doer-self with a positive credit attitude chooses credit cards over debit cards; however, the doer-self with a negative credit attitude would fear credit and opt for debit cards. The planner-self attributes no value to using a credit card for debt purposes, thus was expected to have a negative credit attitude. High financial sophistication suggests that an individual can make informed and forward thinking financial decisions and is most associated with the planner-self; while lower financial sophistication is associated with the doer-self. Conversely, a high degree of myopia is associated with the doer-self because this self tends to be impatient,

emotionally driven and instant gratification-focused, while the planner-self tends to be more future-oriented (i.e., low degree of myopia). The outcome (or dependent) variable is payment card type – either debit card or credit card, specifically either revolving or convenience users. Please refer to Appendix A for detailed information on the identification and measurement of all variables used in this study.

Credit attitude. Attitudes are opinion-based heuristics that are readily used by the doer system to aid in decision-making. The credit attitude construct explains the individual's willingness to use credit to fund consumption. The SCF has many variables that describe attitude toward spending on credit. Appendix B provides the loadings from principal component analysis used to derive the underlying latent concept for credit attitude. The variables that make up the construct were: has a positive attitude toward credit, willing to use credit to fund a vacation, and willing to use credit to purchase furs or jewelry. A factor score was calculated and two groups were formed to represent a more positive (above the mean) and more negative (below the mean) credit attitude. Previous literature used several variables to measure credit attitude. For example, other studies utilized willingness to borrow money to purchase a fur coat of jewelry and savings habits as measures of a household's ability to control consumption (Bertaut & Haliassos, 2001; Rha, Montalto, & Hanna, 2006).

Myopia. The definition of myopia is focusing on short-term outcomes (Benartzi & Thaler, 1995; Montier, 2010). A high degree of myopia represents the doer self (less able to defer gratification, focused on the now), while a low degree of myopia represents the planner self (more able to defer gratification, focused on the future). While the SCF does not have a direct measure of myopia, Appendix B provides the loadings from principal component analysis used to derive the underlying latent concept for myopia. The variables that make up the construct are: spending exceeded income over the past year, savings habits are described as not saving and spending more or as much as income, and smokes.

Previous literature often has used various factors to measure an individual's level of myopia. Households that consistently spend or have habits of spending over income display the inability to defer resources to a future period (Gathergood, 2012). Smoking is a commonly used as a proxy to measure myopia (Bickel, Odum, & Madden, 1999; Fuchs, 1982; James, 2009). In a seminal article, Fuchs (1982) found a positive correlation between impatience and smoking. Bickel, Odum and Madden (1999) suggested that people who smoke reduce the value of monetary outcomes to a greater level than people that do not smoke or former smokers. A factor score was calculated and two groups were formed to represent a higher (above the mean) and lower (below the mean) degree of myopia.

Financial sophistication. While it would be ideal to use a direct measure of financial literacy to capture the respondent's actual level of human capital specific to personal finance, the SCF does not provide this type of variable. The next best thing was to create a measure of "financial sophistication" using a technique developed by Huston, Finke and Smith (2012). Financial sophistication often serves as a proxy for financial literacy. Financial sophistication refers to the household's ability to apply knowledge and make complex financial decisions. Huston, Finke, and Smith (2012) created an indirect measure of financial sophistication,

which was based on a combination of observed and self-reported variables instead of directly measured financial literacy. The score included four variables: stock ownership (within or outside of tax-sheltered accounts), willingness to accept at least some investment risk, not revolving more than 50% of credit card limit, and the level of understanding of personal finance. Given the dependent variable of this study, the revolving more than 50% of the credit limit was removed from the factor. To see how financial sophistication is distributed among debit and credit card users, the financial sophistication construct was categorized into five quintiles to measure the magnitude between levels of sophistication. Quintile 1 is the most sophisticated group and quintile 5 is the least sophisticated. Quintile 3 was the reference group for the regression analysis.

Additional determinants. Additional variables (containing varying degrees of planner and doer elements) were included to control for these factors in the analysis. These control variables included formal level of education, generational cohort, gender, marital status, children status, income, net worth, and survey year.

Data Analysis

Descriptive statistics were conducted to evaluate the characteristics of the household. In order to generalize the results back to the entire population of the United States, the descriptive statistics were weighted using the weight variable provided by the Federal Reserve Board (Lindamood, Hanna & Bi, 2007). Since the dependent variable is binary, logistic regression was used to predict the likelihood of the dependent variable occurring given the set of independent variables. The regression analyses were not weighted (Lindamood, Hanna & Bi, 2007).

RESULTS

The results for the descriptive statistics are shown in Table 1. For payment card type, debit card users comprised about 31% and 69% were credit card users (both revolving and convenience credit card users). Of the credit card users, about 49% were convenience, and the remaining 21% were revolving credit card users. For a complete listing of the descriptive statistics for all variables used in this study, please see Appendix C.

Approximately 20% of the sample had a more positive credit attitude, 33% had a higher degree of myopia, and 58% had both a negative credit attitude and a lower degree of myopia. In terms of credit attitude, all groups had a similar negative attitude toward credit with convenience credit card users at 86%, revolving credit card users at 72% and debit card users at 79%. Conversely, convenience credit card users had a much higher frequency of lower myopia (82%), compared with both debit card users (55%), and revolving credit card users (65%). Convenience credit card users had the highest percentage (33%) of the most financially sophisticated respondents, and debit card users had the highest percentage (26%) of the least financially sophisticated respondents.

Table 1

Frequencies for the Variables of Interest

Variable	Total Sample	Debit Card User	Revolving Credit Card User	Convenience Credit Card User
	n = 13,137	n = 4,057	n = 2,698	n = 6,382
	100%	31%	21%	49%
Credit Attitude				
Positive Attitude (+)	20	21	28	14
Negative Attitude (-)	80	79	72	86
Myopia				
Higher Myopia	33	45	35	18
Lower Myopia	67	55	65	82
Attitude/Myopia Groups				
+ Attitude/ High Myopia	11	14	15	5
+ Attitude/ Low Myopia	9	7	14	9
- Attitude/ High Myopia	22	31	20	13
- Attitude/ Low Myopia	58	48	52	73
Financial Sophistication				
Quintile 1 (most sophisticated)	20	10	17	33
Quintile 2	20	17	20	23
Quintile 3	20	23	21	16
Quintile 4	20	24	21	15
Quintile 5 (least sophisticated)	20	26	21	13

Four logistic regression models – two models comparing revolving credit card users to convenience credit card users and two models comparing revolving credit card users to debit card users – are summarized in Table 2. For complete regression results (including coefficients and log odds ratios) please refer to Appendix D.

In the first model (for both comparisons) we found evidence to support the first hypothesis that individuals with positive credit attitudes were more likely to be revolving users compared to both convenience and debit card users. The results also indicated that individuals with a higher degree of myopia were more likely to be revolving compared to convenience credit card users which provides evidence to support the second hypothesis.

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There is no statistically significant difference in myopia between revolving credit card and debit card users indicating that we cannot reject the third hypothesis.
Table 2

Summary of Logistic Regression Results for the Likelihood of Being a Revolving Credit Card User (compared to Convenience Credit and Debit Card Users)

Variable	*Revolving compared to Convenience User*	*Revolving compared to Debit Card User*
Model 1	n = 9,080	n = 6,755
Positive Attitude (vs. Negative)	More Likely	More Likely
Higher Myopia (vs. Lower)	More Likely	No More/Less Likely
Most Financially Sophisticated (Quintile 1 vs. Quintile 3)	Less Likely	More Likely
Quintile 2 (vs. Quintile 3)	Less Likely	No More/Less Likely
Quintile 4 (vs. Quintile 3)	No More/Less Likely	No More/Less Likely
Least Financially Sophisticated (Quintile 5 vs. Quintile 3)	No More/Less Likely	No More/Less Likely
Model 2		
Doer Self Groups (compared to -Attitude/Low Myopia)		
+ Attitude/ High Myopia	More Likely (1)	More Likely
+ Attitude/ Low Myopia	More Likely (2)	More Likely
- Attitude/ High Myopia	More Likely (3)	No More/Less Likely
Planner Self (financial sophisticated compared to Quintile 3)		
Most Financially Sophisticated (Quintile 1)	Less Likely	More Likely
Quintile 2	Less Likely	No More/Less Likely
Quintile 4	No More/Less Likely	No More/Less Likely
Least Financially Sophisticated (Quintile 5)	No More/Less Likely	No More/Less Likely

Note. All *More Likely* and *Less Likely* results are significant at 0.05, numbers in parenthesis represent magnitude with 1 being the highest magnitude of effect. All regressions controlled for age, education, gender, marital status, child status, income, net worth, and survey year – for complete results, please refer to Appendix D.

Hypothesis four posited that those with more financial sophistication were more likely to be revolving credit versus debit card users and results indicate there is evidence to support this hypothesis as well. Finally, when comparing revolving credit to convenience credit card payers, the opposite result is obtained. Thus, the evidence suggests that the hypothesis that individuals with higher financial sophistication are less likely to be revolving

as opposed to convenience credit card users should not be rejected. The findings from the four logistic regression results provided evidence that supports all five hypotheses regarding the impact of credit attitudes, myopia, and financial sophistication on payment card choice.

DISCUSSION

Results in the Context of a Dual-Self Model

This research adds to the literature by using a dual-self model to frame the determinants of payment card choice with the specific purpose of providing insight for financial professionals who work with chronic credit card borrowers (revolving credit card users). This study finds evidence to support all the hypotheses that were generated using the dual-self constructs, which indicate that a dual-self framework may be particularly useful in helping professionals to form best practices around payment card choice when working with our clients. In line with the findings from Meier and Sprenger (2010), the results from the research show that financial therapists/coaches can assist clients by helping them to see their doer-self biases in financial decision making. Financial therapists and coaches can educate clients on how to avoid paying additional fees and expenses associated with revolving a credit card balance. In order to control the doer self, the planner self can constrain spending by using only a debit card until they obtain the skills necessary to become a convenience credit card user.

This study focuses on the dual-self constructs – credit attitude, myopia, and financial sophistication to explain payment choice. The study includes, but doesn't focus on, the variables that embody both doer and planner characteristics including education, gender, age, etc. Credit attitude and myopia are chosen to be more important in describing the doer-self brain system because attitudes and impatience are more a function of the limbic or emotional part of our brain (which represents the doer-self). Financial sophistication is a much more cognitively-based construct and was selected to describe the planner-self brain system because cognitive, rational, deliberate functions are more a function of the prefrontal cortex or reasoning part of our brain (which represents the planner-self).

Limitations

Limitations of the research include the inability to directly measure attitude toward credit card use, myopia and financial literacy. Nationally representative surveys tend to lack measurable constructs such as these. Further work with the Survey of Consumer Finances on adding additional variables to more accurately measure these constructs would be beneficial. For example, the 2016 Survey of Consumer Finances includes additional variables that measure financial literacy and responses to hypothetical income shortfalls (Bricker et al., 2017). These additional variables could provide added insights to the purpose of this paper; however, the sample size of the households of interest from the 2016 collection is very small. Perhaps future research could include ways the planner self can control the doer self from spending more than income and postpone consumption – including how a household handles hypothetical income shortfalls.

Another limitation of the paper is that although the 2016 Survey of Consumer Finances has additional financial literacy variables, that version of the survey lacks one of the key variables to construct the myopia factor (willing to borrow and use credit to purchase furs or jewelry). In order to maintain the myopia factor, this study uses data from 1998-2013 and does not include the 2016 data set.

Discussion of Results

Starting with our descriptive statistics, clues that convenience credit card users were distinctly different from revolving credit and debit card users exist. Convenience users showed high levels of planning-self dominance (i.e., highest financial sophistication and the lack of both myopia and positive credit attitude). The descriptive story is not quite as dramatic for revolving credit and debit card users, but the patterns of relatively higher myopia and positive credit attitude were present. Yet, which doer-self construct may be most important – credit attitude or myopia – was not clearly indicated.

Results from our multivariate analyses provide a better understanding of the differences between all three payment card user types. This study focused on comparing revolving credit card users with the other card users, as habitual credit card borrowers (revolving credit card users) are the most financially vulnerable. The comparison between revolvers and convenience credit card users found exactly what was expected using a dual-self framework: the doer-self constructs (positive credit attitude and higher myopia) are associated with higher likelihood of being a revolving credit card users and the planner-self construct (financial sophistication) is associated with a higher likelihood of being a convenience credit card user.

Similarly, the comparison between revolvers and debit card users was precisely what we would expect in terms of the doer-self constructs in that revolvers have a positive attitude toward credit, and debit card users a relatively more negative attitude toward credit. In terms of myopia, both payment card user types were hypothesized to be more doer-self dominant. Thus, both types of payment card users were expected to be relatively highly myopic, so such differences in myopia were not anticipated. The findings of this study concur: people with high myopia are no more or less likely to be revolvers compared to debit card users. Thus, credit attitude is the key distinguishing feature between revolvers and debit card users in terms of the doer-self constructs.

In terms of the results for financial sophistication, those who chose a credit over a debit card were more financially sophisticated as expected. The findings of this study found similar results for the most financially sophisticated. There is a positive and statistically significant relation between financial sophistication and the likelihood of being a credit (revolver) versus a debit card user.

In Model 2 (combining the doer-self constructs into one variable with four possible attributes), examining revolving compared to convenience users, the largest distinction was between those with positive credit attitude/high myopia and those with negative credit attitude/low myopia, which was expected using a dual-self framework. The second largest

effect was for the positive attitude/low myopia group and the smallest effect for the for negative attitude/high myopia group. Thus, credit attitude was the more important doer-self construct and a key consideration in designing a strategy to transition a revolving into a convenience credit card user.

Ways to Use this Knowledge to Inform Best Practices

Like a growing number of studies that focus on personal finance issues, this study incorporates behavioral economics, as many people do not fit the homo economicus or "rational man" model. Therefore, the use of dual-self, and other behavioral economic concepts can be explored to improve our practice to better serve our clients. If the goal is to help clients optimize their payment card choice (i.e., be convenience credit card users), then how can the results from this study be used to help design possible transition strategies?

Based on evidence from the three dual-self constructs used in this study, three options are available: (a) decrease the degree of myopia (i.e., help our clients to become more forward-thinking); (b) change credit attitudes from more to less positive (i.e., help our clients to become less willing to use credit cards as debt instruments); or (c) increase levels of financial literacy (i.e., improve the personal finance-related knowledge and skills of clients).

The first option – becoming more forward-thinking – may be accomplished by helping clients to build what Becker (2007) referred to as "imagination capital," in which people use strong imagery and/or emotional scenarios to focus on the benefits of delaying gratification. Another option is to take advantage of loss aversion and encourage appropriate behavior by focusing on removing felt losses (i.e., having clients consciously attend to the benefits of not having to pay finance charges and fees for borrowing, etc.). To aid in this process, it may be useful to introduce commitment devices (e.g., using a debit rather than credit card as payment) to help constrain the temptation to use a credit card as a debt instrument. While the client is a debit card user, the financial professional can highlight the positive outcomes the client is experiencing to help translate these successes into eventual attitude changes that would support the client becoming a convenience credit card user.

The second option – changing attitudes – is more focused on the doer-self and our results would suggest this is the key to making a successful transition from revolver to convenience card user. However, we know that attitude alteration is not a quick or effortless process and takes time and commitment to elicit change. The process of attitude change to produce behavioral change requires a cognitive therapy and/or a cognitive-behavioral therapy approach to either alter irrational ways of thinking or correct inappropriate behaviors. Another approach to consider is changing behavior to influence attitudes, where new behaviors or coping strategies are encouraged, such that new behavior patterns lead to subsequent attitude changes over time. Ultimately, changing credit attitudes so that clients are less willing to use credit cards as debt instruments needs to be accomplished to successfully transition credit borrowers to convenience credit card users.

The third option – financial education – is more focused on the planner-self and, although the findings do suggest that financial sophistication plays a role, the results indicate

that the doer-self variables (credit attitude and myopia) have the larger impact in distinguishing revolving from convenience card users. Although the financial education approach has been a popularly proposed solution in the past, it is clear that focusing only on the planner-self construct is not likely to be a successful strategy. It is similar to the obesity problem in the United States – it is not necessarily that people do not have the knowledge and skills to create and consume more healthy diets and increase exercise (though this is certainly likely a factor for some), the bigger issue is the doer-self – having the appropriate attitudes and actions that support a healthy weight.

Summary

This research has successfully demonstrated that viewing payment card choice through a dual-self model lens is a beneficial way of not only predicting debit vs. credit card use, but also provides valuable insight for financial professionals who work with habitual credit card borrowers. The results and subsequent discussion point to a strategy that first involves moving revolving credit to debit card users, either motivated through loss aversion techniques and/or by framing debit cards as a commitment device. Practitioners should then formulate a strategy to change credit attitudes that will support the eventual transition to becoming a convenience credit card user. By understanding how to use dual-self constructs to the client's advantage, financial counselors and educators alike can develop research-based techniques that will help to create best practices for optimal payment card choice.

REFERENCES

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *The Journal of Political Economy*, *70*(5, Part 2), 9-49.

Becker, G. S. (2007). Health as human capital: Synthesis and extensions. *Oxford Economic Papers, 59*(3), 379-410.

Benartzi, S., & Thaler, R. H. (1995). Myopic loss aversion and the equity premium puzzle. *The Quarterly Journal of Economics, 110*(1), 73-92.

Bertaut, C. C., & Haliassos, M. (2001). *Debt revolvers for self-control.* HERMES Center (Working Paper). Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.484.4991&rep=rep1&type=pdf

Bertaut, C. C., Haliassos, M., & Reiter, M. (2009). Credit card debt puzzles and debt revolvers for self control. *Review of Finance*, *13*(4), 657-692.

Bickel, W. K., Odum, A. L., & Madden, G. J. (1999). Impulsivity and cigarette smoking: Delay discounting in current, never, and ex-smokers. *Psychopharmacology*, *146*(4), 447-454.

Board of Governors of the Federal Reserve System. (1998-2013). Survey of Consumer Finances [Data files and codebooks]. Available from https://www.federalreserve.gov/econres/scfindex.htm

Borzekowski, R. & Kiser, E. K. (2008). The choice at the checkout: Quantifying demand across payment instruments. *International Journal of Industrial Organization*, *26*(4), 889-902.

Borzekowski, R., Kiser, E. K., & Ahmed, S. (2008). Consumers' use of debit cards: patterns, preferences, and price response. *Journal of Money, Credit and Banking*, *40*(1), 149-172.

Bricker, J., Dettling, L. J., Henriques, A., Hsu, J. W., Jacobs, L., Moore, K. B., ... & Windle, R. A. (2017). Changes in US family finances from 2013 to 2016: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin*, *103*, 7-8.

Chien, Y. W. & DeVaney, S. A. (2001). The effects of credit attitude and socioeconomic factors on credit card and installment debt. *Journal of Consumer Affairs*, *35*(1), 162-179.

Ching, A. T., & Hayashi, F. (2010). Payment card rewards programs and consumer payment choice. *Journal of Banking & Finance*, *34*(8), 1773-1787.

Choe, H., Yoon, S. J., & Johnson, D. P. (1991). Gender differences in the choice of payment method for purchasing durable goods. In *Gender and Consumer Behaviour Conference Proceedings*. University of Utah.

de Bassa Scheresberg, C., Lusardi, A., & Yakoboski, P. J. (2014). *College-educated millennials: An overview of their personal finances.* TIAA-CREF Institute and the Global Financial Literacy Excellence Center, (February), 1-38.

Durkin, T. A. (2000). Credit cards: Use and consumer attitudes 1970–2000. *Federal Reserve Bulletin*, *86*, 623–634.

Fuchs, V. R. (1982). Time preference and health: An exploratory study. In V. R. Fuchs (Ed.), *Economic Aspects of Health* (pp. 93-120). Chicago: The University of Chicago Press.

Fusaro, M. A. (2013). Why do people use debit cards: Evidence from checking accounts. *Economic Inquiry*, *51*(4), 1986-2001.

Gathergood, J. (2012). Self-control, financial literacy and consumer over-indebtedness. *Journal of Economic Psychology*, *33*(3), 590-602.

Hayashi, F. & Stavins, J. (2012). *Effects of credit scores on consumer payment choice.* Public Policy Discussion Papers, No. 12-1, Federal Reserve Bank of Boston, Boston, MA. Retrieved from
https://www.econstor.eu/bitstream/10419/59242/1/685247554.pdf

Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., & Lawrence, F. C. (2000). Differences in spending habits and credit use of college students. *Journal of Consumer Affairs*, *34*(1), 113-133.

Herbst-Murphy, S. (2015). *Trends and preferences in consumer payments: Updates from the Visa Payment Panel Study.* Federal Reserve Bank of Philadelphia Payment Cards Center Discussion Paper, (15-02).

Hershfield, H.E., Goldstein, D. G., Sharpe, W. F., Fox, J., Yeykelis, L., Carstensen, L. L., & Bailenson, J. N. (2011). Increasing saving behavior through age-progressed renderings of the future self. *Journal of Marketing Research*, *48*(SPL), S23-S37.

Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs*, *44*(2), 296-316.

Huston, S. J., Finke, M. S., & Smith, H. (2012). A financial sophistication proxy for the Survey of Consumer Finances. *Applied Economics Letters*, *19*(13), 1275-1278.

James III, R. N. (2009). Tenant time preference as a barrier to homeownership. *Applied Economics Letters, 16*(10), 1073-1077.

King, A. S. & King, J. T. (2005). The decision between debit and credit: Finance charges, float, and fear. *Financial Services Review*, *14*(1), 21-36.

Lee, J., Abdul-Rahman, F., & Kim, H. (2007). Debit card usage: An examination of its impact on household debt. *Financial Services Review*, *16*(1), 73.

Lindamood, S., Hanna, S. D., & Bi, L. (2007). Using the Survey of Consumer Finances: Some methodological considerations and issues. *Journal of Consumer Affairs, 41(2),* 195-222.

Meier, S., & Sprenger, C. (2010). Present-biased preferences and credit card borrowing. *American Economic Journal: Applied Economics*, *2*(1), 193-210.

Montier, J. (2010). *The little book of behavioral investing: How not to be your own worst enemy* (Vol. 35). John Wiley & Sons.

Mottola, G. R. (2013). In our best interest: Women, financial literacy, and credit card behavior. *Numeracy, 6*(2), 4.

Parrish, L. (2009). Overdraft explosion. *Center for Responsible Lending.* Retrieved from https://www.responsiblelending.org/overdraft-loans/research-analysis/crl-overdraft-explosion.pdf

Rha, J. Y., Montalto, C. P., & Hanna, S. D. (2006). The effect of self-control mechanisms on household saving behavior. *Journal of Financial Counseling and Planning*, *17*(2).

Rogers, B. & Dopico, L.G. (2010). *Debit or credit: Either, both, neither or how much?.* Retrieved from https://www.lscu.coop/wp-content/uploads/2015/03/216_Dopico_DebitCredit.pdf

Rutherford, L. G. & Devaney, S. A. (2009). Utilizing the theory of planned behavior to understand convenience use of credit cards. *Journal of Financial Counseling and Planning*, *20*(2), 48-63.

Rysman, M. (2009). Consumer payment choice: Measurement topics. *The changing retail payments landscape: What role for central banks*, 61-81.

Sprenger, C., & Stavins, J. (2010). Credit card debt and payment use. *Financial Services Review*, *19*(1).

Stango, V., & Zinman, J. (2008). Debit vs. credit: How people choose to pay. Filene Research Institute.

Strotz, R. H. (1955). Myopia and inconsistency in dynamic utility maximization. *The Review of Economic Studies*, 165-180.

Thaler, R. H. & Shefrin, H. M. (1981). An economic theory of self-control. *The Journal of Political Economy*, *89*(2), 392-406.

Zinman, J. (2009). Debit or credit?. *Journal of Banking & Finance*, *33*(2), 358-366.

Appendix A

Identification and Coding of Variables Used in the Study

Variable	Measurement
Debit Card User (X7582)	1 if yes, 0 otherwise
Revolving Credit Card Users (X410/X7973, X427, X413, X421, X430, X424)	1 if yes, 0 otherwise
Convenience Credit Card Users (X410/X7973, X427, X413, X421, X430, X424)	1 if yes, 0 otherwise
Independent Variables	
Credit Attitude (X401, X402, X404)	
Positive (Above the Mean) Credit Attitude	1 if yes, 0 otherwise
Negative (Below the Mean) Credit Attitude **	1 if yes, 0 otherwise
Myopia (X7510, X7508, X3015, X3016, X7380, X7395)	
Higher (Above the Mean) Myopia	1 if yes, 0 otherwise
Lower (Below the Mean) Myopia **	1 if yes, 0 otherwise
Human Capital	
Financial Sophistication (X3913, X3014, X6525)	
Quintile 1 (most sophisticated)	1 if yes, 0 otherwise
Quintile 2	1 if yes, 0 otherwise
Quintile 3 **	1 if yes, 0 otherwise
Quintile 4	1 if yes, 0 otherwise
Quintile 5 (least sophisticated)	1 if yes, 0 otherwise
Education (X5901, X6101)	
Less than high school	1 if yes, 0 otherwise
High School	1 if yes, 0 otherwise
Some College	1 if yes, 0 otherwise
College **	1 if yes, 0 otherwise
Life-Cycle Factors	
Generational Cohort (Age) (X14, X19)	
Greatest Generation (1900-1925)	1 if yes, 0 otherwise
Silent Generation (1926-1945)	1 if yes, 0 otherwise
Baby Boomer Generation (1946-1964)	1 if yes, 0 otherwise
Generation X (1965-1980)	1 if yes, 0 otherwise
Millennial Generation (1981-2000) **	1 if yes, 0 otherwise
Gender (X8021, X103)	
Male **	1 if yes, 0 otherwise
Female	1 if yes, 0 otherwise
Married (X7372, X7018)	1 if yes, 0 otherwise
Have children (X108, X114, X120, X126, X132, X202, X208, X214, X220, X226)	1 if yes, 0 otherwise
Finances	
Income (X5729)	
Less than $25,000 **	1 if yes, 0 otherwise
$25,001-$50,000	1 if yes, 0 otherwise
$50,001-$75,000	1 if yes, 0 otherwise
$75,001-$100,000	1 if yes, 0 otherwise
Greater than $100,000	1 if yes, 0 otherwise
Net Worth	
Less than $10,000	1 if yes, 0 otherwise
$10,001-$50,000	1 if yes, 0 otherwise
$50,001-$100,000	1 if yes, 0 otherwise
$100,001-$150,000	1 if yes, 0 otherwise
Greater than $150,000 **	1 if yes, 0 otherwise
From the Survey of Consumer Finances 1998-2016 (year 2016 is reference category)	
X8000 was used for age, gender, and education. Net Worth provided by Federal Reserve. ** Indicates reference category.	

Appendix B

Loadings for Credit Attitude and Myopia Variables

SCF Variable	Credit Attitude
Has a positive attitude toward credit	0.59253
Willing to use credit to fund a vacation	0.75536
Willing to use credit to purchase furs or jewelry	0.70764
	Myopia
Spending exceeds or is equal to income	0.70972
Does not save since spending exceeds or equals income	0.75329
Currently smokes	0.50333

Appendix C

Complete Descriptive Statistics for ALL Variables in this Study.

Variable	Total Sample	Debit Card User	Revolving Credit Card User	Convenience Credit Card User
	n = 13,137	n = 4,057	n = 2,698	n = 6,382
	100%	30.88%	20.54%	48.58%
Credit Attitude				
Above Mean Attitude	20.44	20.98	28.21	13.81
Below Mean Attitude	79.56	79.02	71.79	86.19
Myopia				
Above Mean Myopia	32.79	45.09	34.74	18.11
Below Mean Myopia	67.21	54.91	65.26	81.89
Groups				
AM Attitude/ AM Myopia	11.07	14.16	14.63	4.99
AM Attitude/ BM Myopia	9.37	6.83	13.58	8.82
BM Attitude/ AM Myopia	21.73	30.93	20.10	13.12
BM Attitude/ BM Myopia	57.84	48.09	51.68	73.08
Human Capital				
Financial Sophistication				
Quintile 1 (most sophisticated)	19.97	9.94	17.45	32.68
Quintile 2	20.01	17.12	20.07	23.06
Quintile 3	19.98	22.65	21.18	16.19
Quintile 4	19.99	24.20	20.50	15.09
Quintile 5 (least sophisticated)	20.05	26.09	20.80	12.98
Education				
Less than high school	14.11	19.02	13.47	9.35
High School	32.87	37.15	34.68	26.87
Some College	25.48	29.78	26.78	19.85
College	27.54	14.05	25.07	43.93
Life-Cycle Factors				
Generational Cohort (Age)	51.5500	43.0254	51.2858	60.8955
Greatest Generation (1900-1925)	7.26	1.50	4.44	16.64
Silent Generation (1926-1945)	26.05	10.43	29.18	40.35
Baby Boomer Generation (1946-1964)	36.48	32.76	46.39	32.76
Generation X (1965-1980)	22.84	37.82	18.30	10.30
Millennial Generation (1981-2000)	7.37	17.49	1.68	0.94
Gender				
Male	46.09	40.92	43.20	53.87
Female	53.91	59.08	56.80	46.13
Married	49.05	34.44	55.99	59.33
Have children	40.66	52.05	43.44	26.28
Finances				
Income	$ 80,958.05	$ 38,624.14	$ 68,725.93	$ 135,852.88
Net Worth	$ 625,432.61	$ 86,975.70	$ 358,990.10	$ 1,409,785.87

From the Survey of Consumer Finances 1998-2013. Statistics derived from the weighted analysis of one implicate. Income & net worth are in 2013 dollars. The mean is presented for age, income and net worth; column percent's are included for all categorical variables.

Appendix D

Complete Logistic Regression Results Used to Create Summary Table 2.

Model 1: Logistic Regression of the Likelihood of Being a <u>Revolving Credit Card User Compared to a Convenience Credit Card User</u> in the SCF between 1998-2013 (n=9,080)

	Parameter Estimate	p	Odds Ratio	
Intercept	-2.3837	<0.0001		***
Credit Attitude				
Above Mean Attitude	0.6812	<0.0001	1.976	***
Myopia				
Above Mean Myopia	0.5682	<0.0001	1.765	***
Human Capital				
Financial Sophistication				
Quintile 1 (most sophisticated)	-0.5407	<0.0001	0.582	***
Quintile 2	-0.2637	0.0027	0.768	***
Quintile 4	-0.0436	0.6675	0.957	
Quintile 5 (least sophisticated)	-0.1621	0.1496	0.85	
Education				
Less than high school	0.607	<0.0001	1.835	***
High School	0.6078	<0.0001	1.836	***
Some College	0.6529	<0.0001	1.921	***
Life-cycle Factors				
Generational Cohort				
Greatest Generation (1900-1925)	-0.9898	0.0012	0.372	***
Silent Generation (1926-1945)	0.0302	0.9161	1.031	
Baby Boomer Generation (1946-1964)	0.653	0.0217	1.921	**
Generation X (1965-1980)	0.6197	0.0316	1.858	**
Female	0.2421	<0.0001	1.274	***
Not Married	-0.1593	0.02	0.853	**
Have children	0.2648	<0.0001	1.303	***
Finances				
Income				
$25,001-$50,000	0.2646	0.0093	1.303	***
$50,001-$75,000	0.3194	0.0063	1.376	***
$75,001-$100,000	0.4768	0.0003	1.611	***
Greater than $100,000	-0.4581	0.0001	0.633	***
Net Worth				
Less than $10,000	1.811	<0.0001	6.116	***
$10,001-$50,000	1.4336	<0.0001	4.194	***
$50,001-$100,000	1.0846	<0.0001	2.958	***
$100,001-$150,000	0.9831	<0.0001	2.673	***
Survey Year				
Year 1998	0.7144	<0.0001	2.043	***
Year 2001	0.5676	<0.0001	1.764	***
Year 2004	0.4625	<0.0001	1.588	***
Year 2007	0.5378	<0.0001	1.712	***
Year 2010	0.0241	0.8481	1.024	
R2	0.2648			
Adjusted R2	0.3762			
*p < 0.10; **p < 0.05; ***p < 0.01.				

Model 2: Logistic Regression of the Likelihood of Being a <u>Revolving Credit Card User</u> Compared to a <u>Convenience Credit Card User</u> in the SCF between 1998-2013 (n=9,080)

	Parameter Estimate	p	Odds Ratio	
Intercept	-2.3853	<0.0001		***
Attitude/Myopia Groups				
AM Attitude/ AM Myopia	1.2389	<0.0001	3.452	***
AM Attitude/ BM Myopia	0.6906	<0.0001	1.995	***
BM Attitude/ AM Myopia	0.5772	<0.0001	1.781	***
Human Capital				
Financial Sophistication				
Quintile 1 (most sophisticated)	-0.5407	<0.0001	0.582	***
Quintile 2	-0.2635	0.0027	0.768	**
Quintile 4	-0.0432	0.6703	0.958	
Quintile 5 (least sophisticated)	-0.1617	0.1505	0.851	
Education				
Less than high school	0.6068	<0.0001	1.835	***
High School	0.6079	<0.0001	1.837	***
Some College	0.6527	<0.0001	1.921	***
Life-cycle Factors				
Generational Cohort				
Greatest Generation (1900-1925)	-0.99	0.0012	0.372	***
Silent Generation (1926-1945)	0.0303	0.9159	1.031	
Baby Boomer Generation (1946-1964)	0.6531	0.0217	1.922	**
Generation X (1965-1980)	0.6201	0.0315	1.859	**
Female	0.2421	<0.0001	1.274	***
Not Married	-0.1598	0.0197	0.852	**
Have children	0.2644	<0.0001	1.303	***
Finances				
Income				
$25,001-$50,000	0.2647	0.0092	1.303	***
$50,001-$75,000	0.3194	0.0063	1.376	***
$75,001-$100,000	0.4767	0.0003	1.611	***
Greater than $100,000	-0.458	0.0001	0.633	**
Net Worth				
Less than $10,000	1.8102	<0.0001	6.112	***
$10,001-$50,000	1.4333	<0.0001	4.193	***
$50,001-$100,000	1.0842	<0.0001	2.957	***
$100,001-$150,000	0.9829	<0.0001	2.672	***
Survey Year				
Year 1998	0.7145	<0.0001	2.043	***
Year 2001	0.5677	<0.0001	1.764	***
Year 2004	0.4626	<0.0001	1.588	***
Year 2007	0.5379	<0.0001	1.712	***
Year 2010	0.0241	0.848	1.024	
R2	0.2648			
Adjusted R2	0.3763			
*p < 0.10; **p < 0.05; ***p < 0.01.				

Model 1: Logistic Regression of the Likelihood of Being a <u>Revolving Credit Card User</u> <u>Compared to a Debit Card User</u> in the SCF between 1998-2013 (n=6,755)

	Parameter Estimate	p	Odds Ratio	
Intercept	-1.8409	<0.0001		***
Credit Attitude				
Above Mean Attitude	0.5273	<0.0001	1.69400	***
Myopia				
Above Mean Myopia	-0.0401	0.5943	0.96100	
Human Capital				
Financial Sophistication				
Quintile 1 (most sophisticated)	0.3338	0.0065	1.39600	***
Quintile 2	0.1269	0.2559	1.13500	
Quintile 4	-0.1277	0.2285	0.88000	
Quintile 5 (least sophisticated)	0.0577	0.5952	1.05900	
Education				
Less than high school	-0.4291	0.0007	0.65100	***
High School	-0.2751	0.0063	0.75900	***
Some College	-0.3344	0.0011	0.71600	***
Life-cycle Factors				
Generational Cohort				
Greatest Generation (1900-1925)	1.7383	<0.0001	5.68800	***
Silent Generation (1926-1945)	1.9753	<0.0001	7.20900	***
Baby Boomer Generation (1946-1964)	1.2011	<0.0001	3.32400	***
Generation X (1965-1980)	0.4697	0.0116	1.59900	**
Female	0.0925	0.1958	1.09700	
Not Married	-0.4781	<0.0001	0.62000	***
Have children	-0.3439	<0.0001	0.70900	***
Finances				
Income				
$25,001-$50,000	0.1888	0.0404	1.20800	**
$50,001-$75,000	0.1233	0.2939	1.13100	
$75,001-$100,000	0.3602	0.0179	1.43400	**
Greater than $100,000	0.9272	<0.0001	2.52700	***
Net Worth				
Less than $10,000	-1.3323	<0.0001	0.26400	***
$10,001-$50,000	-1.0698	<0.0001	0.34300	***
$50,001-$100,000	-0.5756	<0.0001	0.56200	***
$100,001-$150,000	-0.4033	0.0041	0.66800	***
Survey Year				
Year 1998	3.1934	<0.0001	24.37100	***
Year 2001	2.5543	<0.0001	12.86300	***
Year 2004	1.7324	<0.0001	5.65400	***
Year 2007	1.1781	<0.0001	3.24800	***
Year 2010	0.0705	0.5487	1.07300	
R2	0.4187			
Adjusted R2	0.5662			
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$.				

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Model 2: Logistic Regression of the Likelihood of Being a Revolving Credit Card User Compared to a Debit Card User in the SCF between 1998-2013 (n=6,755)

	Parameter Estimate	p	Odds Ratio	
Intercept	-1.858	<0.0001		***
Attitude/Myopia Groups				
AM Attitude/ AM Myopia	0.442	<0.0001	1.556	***
AM Attitude/ BM Myopia	0.6527	<0.0001	1.921	***
BM Attitude/ AM Myopia	0.0224	0.7971	1.023	
Human Capital				
Financial Sophistication				
Quintile 1 (most sophisticated)	0.3336	0.0065	1.396	***
Quintile 2	0.1278	0.2529	1.136	
Quintile 4	-0.1258	0.2358	0.882	
Quintile 5 (least sophisticated)	0.0533	0.624	1.055	
Education				
Less than high school	-0.4236	0.0008	0.655	***
High School	-0.2753	0.0063	0.759	***
Some College	-0.3365	0.001	0.714	***
Life-cycle Factors				
Generational Cohort				
Greatest Generation (1900-1925)	1.7302	<0.0001	5.642	***
Silent Generation (1926-1945)	1.9733	<0.0001	7.195	***
Baby Boomer Generation (1946-1964)	1.1992	<0.0001	3.318	***
Generation X (1965-1980)	0.4695	0.0116	1.599	**
Female	0.0921	0.1978	1.096	***
Not Married	-0.4804	<0.0001	0.619	***
Have children	-0.3446	<0.0001	0.708	***
Finances				
Income				
$25,001-$50,000	0.1892	0.0399	1.208	**
$50,001-$75,000	0.1204	0.3056	1.128	
$75,001-$100,000	0.3553	0.0195	1.427	**
Greater than $100,000	0.9274	<0.0001	2.528	***
Net Worth				
Less than $10,000	-1.3348	<0.0001	0.263	***
$10,001-$50,000	-1.0738	<0.0001	0.342	***
$50,001-$100,000	-0.5778	<0.0001	0.561	**
$100,001-$150,000	-0.4043	0.004	0.667	***
Survey Year				
Year 1998	3.1968	<0.0001	24.455	***
Year 2001	2.5578	<0.0001	12.907	***
Year 2004	1.7363	<0.0001	5.677	***
Year 2007	1.1834	<0.0001	3.265	***
Year 2010	0.0703	0.5501	1.073	
R2	0.4189			
Adjusted R2	0.5664			
*p < 0.10; **p < 0.05; ***p < 0.01.				