

Insights: Financial Capability

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Award-Winning Paper

This issue brief is based on the paper that won the 2019 FINRA Foundation National Financial Capability Study Research Award. The full paper can be obtained by contacting the authors. More information about the award and the National Financial Capability Study can be found at USFinancialCapability.org.

Millennials' Credit Card Management: Ways to Improve through Planning and Financial Knowledge

Summary

Using data from the FINRA Investor Education Foundation's 2015 National Financial Capability Study (NFCS), this research examines the relationship between millennials' propensity to plan, their objective and subjective financial knowledge, and their credit card management behaviors. Propensity to plan was found to increase positive credit card behaviors and decrease non-optimal, costly credit card management behaviors. Objective financial knowledge had a considerably different impact on credit card behavior than subjective financial knowledge. Objective knowledge is positively related to performing positive behaviors, while subjective knowledge (based on self-evaluation) is positively associated with performing negative behaviors. The bigger the difference between objective and subjective knowledge (overconfidence), the more likely the respondent is to have credit card behavior problems. Our main takeaway from this study is that overconfident millennials, those with a divergence between objective and subjective knowledge, are less likely to manage credit cards appropriately. At the same time, millennials who engage in planning appear less likely to engage in negative credit card behaviors.

Background

The term "millennials" has been commonly used for the past few decades after being coined by authors Strauss and Howe (1991) in their book *Generations: The History of America's Future*. The millennial generation refers to the group of people who were born between 1981 and 1997 (Pew, 2015). At the time of the 2015 National Financial Capability Study (NFCS), the dataset on which this issue brief is based, millennials were between 18 and 34 years old and were establishing financial behaviors that would impact their adult lives. We would expect millennials to exhibit common characteristics of young adults who are making numerous life-altering choices (West & Friedline, 2016).

Many of those decisions are related to finances — the purchase of a home, tuition payments, and loans to help fund those financial needs. Compared to other generations, millennials have their own distinctive characteristics due to different socioeconomic, cultural, and technological conditions. Millennials were exposed to technological development at a younger age, went through drastic changes in the economy during and after the Great Recession, had relatively easier access to higher education than older generations, and are the most diverse population.

One common financial experience of young adults is getting their first credit card.

At the time of this survey, about 70% of millennials owned at least one credit card.

Credit cards were more accessible for millennials compared to preceding generations (Manning & Kirshak, 2005) due to deregulation of retail banking, the growth of online markets, and the development of financial technology. While the survey showed that millennials do not hold a greater number of credit cards compared to other generations (NFCS 2015), the number of credit cards tends to increase with age, so we assume that millennials will acquire more credit cards in the future.

Millennials are currently the largest generation (Kim, Anderson, & Seay, 2019), and they will constitute a considerable portion of the labor force as they continue to enter the job market. With these factors in mind, it is crucial to understand how millennials are managing their credit cards. Credit card management today could have significant impact on their credit scores and financial stability in the future.

Methodology

To better understand the credit card behaviors of millennials, we examine the propensity to plan, objective and subjective knowledge, and six credit card behaviors. We use the 2015 NFCS dataset, restricting the sample to those age 18 to 34 at the time of the survey who had at least one credit card. The resulting sample of 4,483 was weighted using the NFCS national-level weights.

The NFCS credit card behaviors include one optimal behavior, paying in full each month, and five non-optimal behaviors: using the card for a cash advance; exceeding the card's limit; making a late payment; making only the minimum payment; and carrying over a balance.

Each behavior is measured on a seven-point scale based on responses to statements ranging from (1) strongly disagree to (7) strongly agree.

Previous studies suggest that higher financial knowledge leads to better financial behaviors (for example, Friedline & West, 2016; Henager & Mauldin, 2015). Few studies have assessed the connection of knowledge to credit card management behaviors (Allgood & Walstad, 2013; Robb & Woodyard, 2011). The NFCS measured financial knowledge in two ways: subjective knowledge and objective knowledge. Subjective knowledge is the respondents' perception of what they think they know. In contrast, objective knowledge is what they actually know, based on answers to questions about interest, inflation, mortgage finances, stocks, bonds, and the time value of money. Each knowledge measure is based on a seven-point scale. To capture the difference between objective and subjective knowledge, we created a variable we call "overconfidence," which is the difference between a person's subjective knowledge score, what they think they know, and their objective knowledge score, what they do know.

Propensity to plan is one's tendency to plan for long-term financial goals, which generally is positively related to wealth accumulation (Ameriks, Caplin, & Leahy, 2003; Lee & Kim, 2016). It is easy to become distracted from these long-term goals, but those who do plan should be better prepared to monitor progress and avoid distractions. The NFCS propensity to plan measure is based on a single question.¹ The higher the score, the greater the propensity to plan.

In this research brief, we first present basic descriptive statistics for propensity to plan, objective and subjective knowledge, and each of the six credit card behaviors. Then, to better understand factors associated with each of the six behaviors, we perform two sets of logistic regressions. In each set, the dependent variables were the six behaviors. The first set of regressions focuses on financial knowledge, with the key independent variables being propensity to plan, objective knowledge, and subjective knowledge.

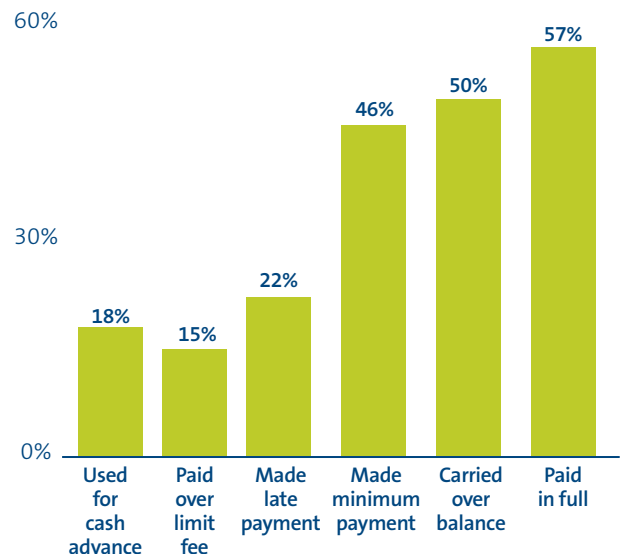
The second set of regressions focuses on the role of overconfidence in each of the six behaviors, with the propensity to plan and overconfidence as independent variables. Both sets of regressions include the control variables of age, gender, education, employment status, marital status, race/ethnicity, having dependent children, household income, financial education experience, whether they had a substantial income drop, financial hardship, risk tolerance, financial confidence, and state of residence.

We found that many millennials exhibit costly credit card behaviors.

Descriptive Findings

We found that many millennials exhibit costly credit card behaviors (Figure 1). Almost half carried over a balance (49.5%), 46% only made minimum payments, 22.4% were charged a late fee, 18.1% used the credit card for a cash advance, and 14.8% were charged a fee for exceeding the card's limit. These behaviors are not optimal for financial reasons and may cause a drop in a credit score, increasing future borrowing costs.

FIGURE 1: Incidence of Credit Card Behaviors among Millennials

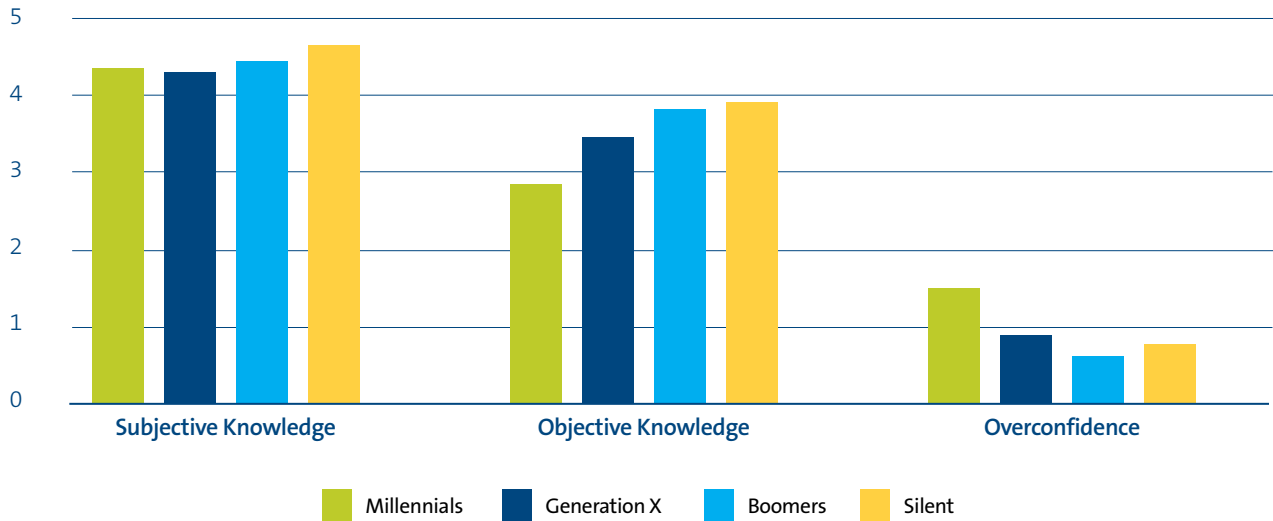


Note: Authors' analyses of NFCS 2015 dataset.

A comparison of subjective financial knowledge scores of millennials to the scores of Generation X, Baby Boomers, and the Silent Generation reveals little difference between the generations. It is notable that objective knowledge, however, tends to increase with age, and millennials have considerably lower levels of actual knowledge than the three other generations.

1. In the NFCS, respondents were asked, "How strongly do you agree or disagree with the following statements? I set long-term financial goals and strive to achieve them." Respondents could answer on a seven-point scale, ranging from (1) strongly disagree to (7) strongly agree. "Don't know" and "Prefer not to say" responses were considered as missing values and observations with those responses were dropped in the multivariate analyses.

FIGURE 2: Objective and Subjective Financial Knowledge and Overconfidence across Generations



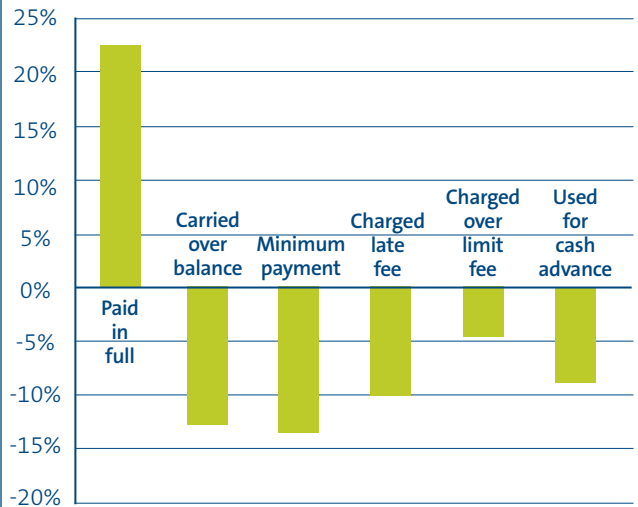
Note: Authors' calculations of NFCS 2015. Analyses restricted to credit card holders.

Millennials have significantly higher levels of overconfidence than older generations. This gap between what they think they know and what they actually know (i.e., their overconfidence) could pose a problem if it affects their finances in general and their credit card behaviors. Figure 2 illustrates the objective knowledge, subjective knowledge, and overconfidence of millennials compared to Generation X, baby boomers, and the silent generation.

What Is Related to Credit Card Behavior?

We found a strong relationship between millennials' propensity to plan and credit card behavior, with planning both increasing the likelihood of paying in full and decreasing the likelihood of negative behaviors (see Figure 3). A one-unit increase in propensity to plan increased the odds of paying the credit card in full by 23%.² Further, a one-unit increase in propensity to plan resulted in a 13% decrease in the odds of carrying over a balance, a 14% decrease in making a minimum payment, a 10% decrease in being charged a late fee, a

FIGURE 3: Change in the Odds of Performing Six Credit Card Behaviors by Propensity to Plan



Note: The percent increase or decrease in the odds of credit card behavior for each unit increase in propensity to plan level. See Appendix A for detailed regression results.

2. In the logistic regression, the coefficient β of estimation is the log of the odds. Odds ratios can be calculated by $\exp(\text{coefficient})$.

4% decrease in being charged a fee for exceeding credit limits, and a 9% decrease in using the credit card for a cash advance. Paying the credit card in full is considered a positive behavior, while the remaining five actions are considered negative behaviors (Mottola, 2013). We conclude that a propensity to plan leads to better credit card management behaviors by millennials.

Higher objective financial knowledge lowered the probability of making non-optimal and potentially costly credit card management actions.

Objective financial knowledge had a statistically significant negative effect on making only a minimum payment (- 8%); making a late payment and being charged a fee (-15%); going over the spending limit and being charged a fee (-24%); and using the credit card for a cash advance (-26%). At the same time, higher subjective knowledge led to a significant increase in the

positive credit card behavior of paying off the full balance (18%) but also had a positive and significant impact on increasing three negative credit card behaviors: making a late payment and being charged a fee (11%); going over the spending limit and being charged a fee (35%); and using the credit card for a cash advance (33%). It is notable that while the objective and subjective measures were constructed to estimate financial knowledge level, the two types of knowledge had a considerably different effect on millennial credit card management behaviors, with objective knowledge being related to positive results and subjective knowledge being related to negative results. Figure 4 shows the impact of objective and subjective financial knowledge on credit card management behaviors.

Our analysis of overconfidence demonstrates that overconfidence generally increased the probability of costly credit card management behaviors. Even though overconfidence was positively related to paying off a credit card balance in full, which is a positive action, it had a considerably higher magnitude of impact on incurring a fee for being over the credit limit and using the card for a cash advance. Figure 5 illustrates the odds ratio of overconfidence scores on the six credit card behaviors.

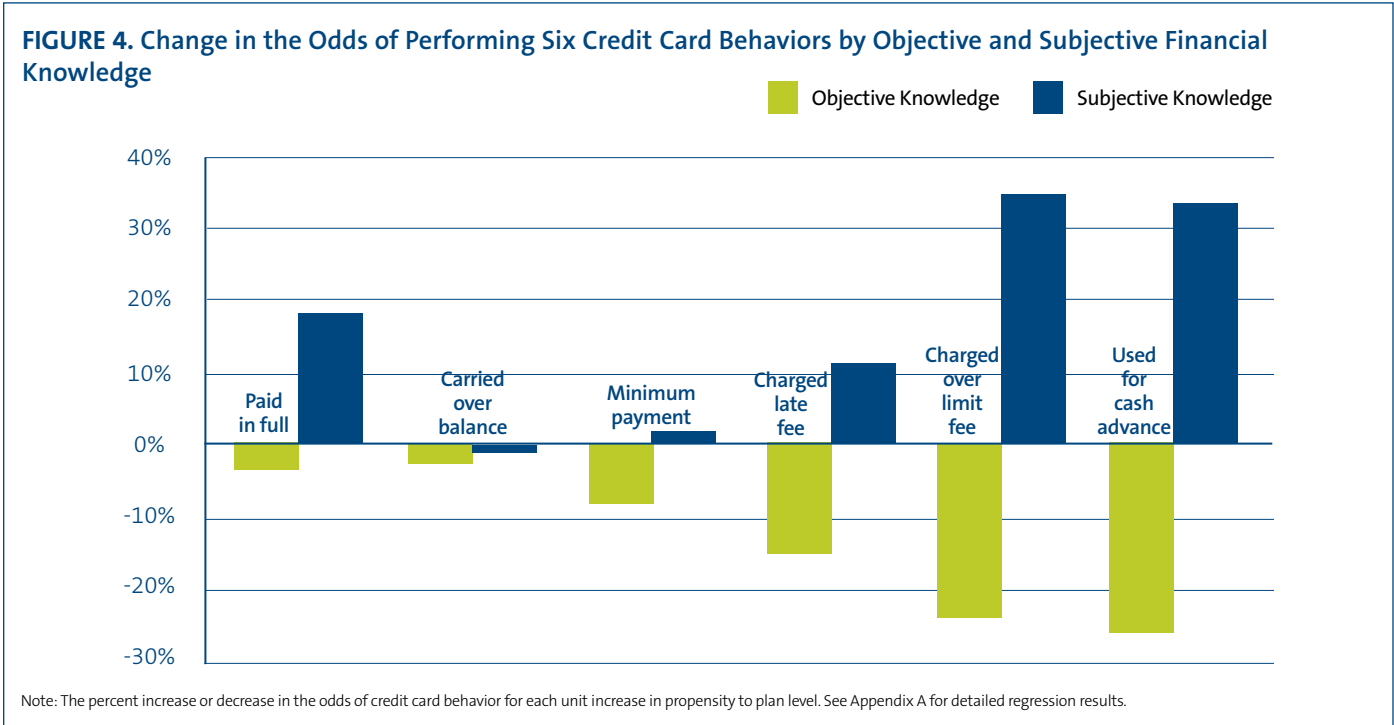
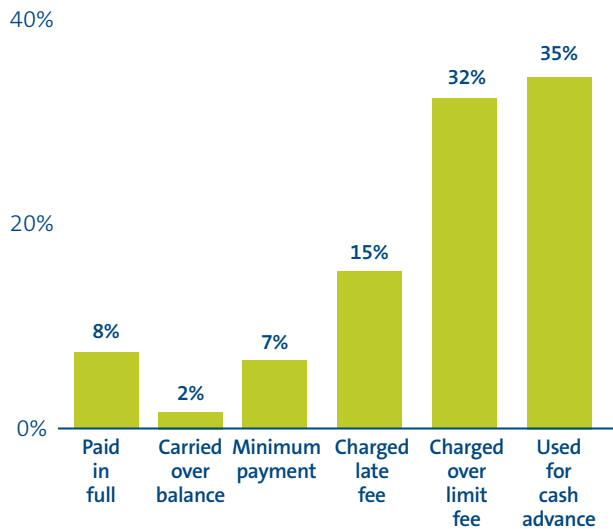


FIGURE 5: Change in the Odds of Performing Six Credit Card Behaviors by Overconfidence



Note: The percent increase or decrease in the odds of credit card behavior for each unit increase in propensity to plan level. See Appendix A for detailed regression results.

Discussion

This brief sheds light on the relationship among propensity to plan, financial knowledge, and credit economic power, having a full picture of the diverse variables related to their credit card management behaviors has importance.

A major takeaway from this research is the relationship between planning and outcomes. Those who planned were more likely to display positive credit card behaviors, while those who did not were significantly more likely to have negative behaviors. The relationship between propensity to plan and better credit card management is indirect evidence of the benefit of general planning. Financial counselors could assist

millennials by emphasizing the relationship between setting long-term financial goals and better credit card management, which results in lower costs and better financial well-being. Another major finding is the role of overconfidence in negative credit card behaviors. Overconfidence is related to those behaviors but could, at the same time, prevent the learning that should take place to change behaviors.

While financial counselors should be aware of the lack of financial knowledge prevalent among millennials, the related issue of overconfidence may be difficult to overcome.

As actual knowledge was found to increase with age, it is possible that millennials' objective knowledge will catch up with their subjective assessment of their knowledge. We found that knowledge increased with each generation, so perhaps millennials just need time. However, it is possible that overconfidence will lead to millennials continuing to make the same mistakes. Financial counselors can help to achieve a better balance between subjective and objective knowledge by carefully assessing their millennial clients' financial literacy. Such information would enable a more nuanced approach to education.

Those responsible for designing, promoting, and funding financial education programs should keep in mind that even attracting millennials to educational programs needs to be done with the understanding that millennials may be overconfident and think that they do not need financial education. Further research about appropriate educational approaches to reduce the gap between objective and subjective financial knowledge could assist in the development of programs, outreach strategies, and policies that would best serve this age group.

Disclaimer

The results, interpretations, conclusions, and opinions provided herein are those of the authors and do not necessarily reflect the views of FINRA or the FINRA Investor Education Foundation.

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Appendix A. Logistic Regression Results of Key Variables

Variables	(1) Full Pay		(2) Over Balance		(3) Min Payment		(4) Late Fee		(5) Over Limit Fee		(6) Cash Advance	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Panel A												
Propensity to plan	0.204***	0.030	-0.136***	0.029	-0.149***	0.029	-0.106**	0.034	-0.046	0.046	-0.095*	0.041
Objective FK	-0.036	0.028	-0.024	0.027	-0.083**	0.027	-0.159***	0.034	-0.273***	0.041	-0.300***	0.038
Subjective FK	0.167***	0.049	-0.005	0.042	0.021	0.044	0.107*	0.052	0.298***	0.070	0.288***	0.061
Control variables	Yes		Yes		Yes		Yes		Yes		Yes	
Regional fixed effect	Yes		Yes		Yes		Yes		Yes		Yes	
Panel B												
Propensity to plan	0.213***	0.030	-0.138***	0.028	-0.154***	0.029	-0.109***	0.034	-0.044	0.045	-0.096*	0.041
Overconfidence	0.075**	0.025	0.015	0.023	0.065**	0.024	0.143***	0.029	0.281***	0.036	0.297***	0.032
Control variables	Yes		Yes		Yes		Yes		Yes		Yes	
Regional fixed effect	Yes		Yes		Yes		Yes		Yes		Yes	

Notes: Authors' analyses of NFCS 2015 dataset. Significance level: *p < .05, **p < .01, ***p < .001.