Financial Confidence, Credit Card Use and Financial Satisfaction

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This paper investigates the impact of confidence about financial knowledge on financial behaviors. On one hand, confidence is necessary to make proactive decisions, yet overconfidence has been associated with a range of negative financial behaviors and outcomes. The role of confidence in credit card choices is unclear. For many consumers, credit cards represent their first experience in obtaining consumer credit and also an entryway in developing their credit report. Costly credit usage habits such as revolving high interest balances and missing payments may lead to misuse of other types of consumer debt and lower credit scores.

While financial knowledge has been linked to better credit card usage outcomes, research has not yet reviewed how financial confidence might be associated with credit usage. This paper tries to fill this gap by addressing the interactions between financial confidence and a number of credit card choices. We further our analysis by reviewing financial satisfaction in relation to both confidence and credit card usage.

Credit card choices are a useful domain to study financial choices more broadly; they are representative financial choices involving complex tradeoffs between current and future wealth and utility. While this analysis is limited to credit card usage, findings from this relationship between confidence, credit card behaviors, and financial satisfaction can help inform other research in other areas of consumer debt such as auto and home loans. Confidence in financial knowledge and actual financial knowledge are considered to be building blocks of broader concepts such as financial capability or literacy. This study also contributes to this area of research that aims to better understand how financial capability might translate to actual optimal financial behaviors.

Background

Choosing the right credit card and then choosing how to use this card both lead to financial consequences. Agarwal et al (2015) found that 40% of consumer choose a suboptimal card when deciding between annual fees and interest rates. Soll et al (2013) performed a series of studies to reveal that consumer misunderstanding of statement features result in them misjudging monthly payments. Financial literacy or financial capability are believed to possible remedies to improve credit card usage.

Financial literacy, or its lack of, has been linked to a number of financial behaviors (Lusardi & Mitchell, 2014). Previous research has linked knowledge and credit use. For example, Ludlum et al (2012) found that many cardholders students lack knowledge of important features of their cards such as the interest rate. Lack of financial knowledge has been found to be related to more credit card debt (Norvilitis et al., 2006) while higher financial knowledge is related to more responsible credit card use of college students (Robb, 2011; Xiao, 2011).

Confidence has been associated with healthy financial behaviors. Allgood and Walstad (2013) found that perceived financial literacy was a stronger predictor of more positive credit card practices than actual financial literacy. In the same vein, Xiao et al (2014) found that both subjective and objective financial knowledge decreased risky credit behaviors.

However, there is also the potential that confidence could lead to poor financial choices, particularly when confidence exceeds knowledge. Overconfidence has been linked with a variety of negative financial behaviors. Those with high subjective financial literacy (a sign of overconfidence) are less likely to seek financial advice (Kramer, 2016), trade the most but perform the worst (Barber & Odean, 2000), and are more likely to start a business that will fail (Camerer & Lovallo, 1999).

Data

This study analyzes the state-level 2009 National Financial Capability Survey (NFCS) with roughly 28,000 responses. We selected the 2009 NFCS because it contains information about financial knowledge and confidence, credit card usage (six items), financial satisfaction, and a number of personal and economic controls.

This group is relatively confident in their financial knowledge: The average self-rating is 5.0 out of 7. 71% of participants self-rated their knowledge as a 5 or higher on a 7-point scale. However they had

moderate knowledge: The average knowledge is 3.2 out of 5 questions correct, with 68% of participants correctly answered 2 to 4 knowledge questions. The average financial satisfaction was moderate, with slightly below the scale midpoint (4.5 out of 10).

Their credit card use reveals a sample who using credit in a variety of ways. Less than half (42%) pay their credit card bills in full. 58% were charged interest for carrying a balance, and 40% paid the minimum balance. 26% paid a late fee, while 15% exceeded their credit line and 13% requested cash advances.

Results

Table 1 summarizes the relationships between confidence, knowledge and six common credit card behaviors in a series of logit regressions. We find evidence that confidence and knowledge individually and jointly relate with credit card use. A 1-point increase in confidence is associated with a 25% increase in the odds of always paying in full, a 7% decrease in carrying a balance, a 7% decrease in making a minimum payment, a 12% decrease in making a late fee, and an 8% decrease in exceeding credit limit.

Knowledge is, if anything, associated with unhealthy credit behaviors, with a strong positive association between knowledge and carrying a balance and paying late fees (each increasing by 30% and 13 respectively with additional correct knowledge question).

Importantly, the interaction of confidence and knowledge strongly predicts each credit card behavior. Each point of confidence increases the relationship between each point of knowledge on paying in full by 3%. Each point of confidence decreases the contribution of a knowledge question on likelihood of carrying a balance by 6%. In other words, confidence makes knowledge more protective against carrying a balance. Similarly, each point of confidence is associated with a 5% increase in the protection of knowledge against making minimum payments, a 5% protection against paying late fees, a 6% protection for exceeding credit limit, and 5% protection for cash advances.

Given the generally consistent results across the credit card behaviors, we combined the six items into a single scale measuring healthy credit card use to draw more general conclusions relating confidence, knowledge and credit card use. The healthy credit card use index reverse coded all items except paying credit card in full, and is internally consistent ($\alpha = 0.7908$).

Table 2 shows regression analysis using the credit card index as the dependent variable. The first model finds that confidence, knowledge, and their interaction each have a positive relationship with healthy credit card use. These results largely persist when considering economic factors including income and employment (Model 3), as well as both economic and demographic factors (Model 4). These results suggest that healthy credit card use increases with knowledge and confidence, and also that confidence strengthens the relationship between knowledge and healthy credit use.

We next test whether credit card use mediates the relationship between confidence, knowledge and financial satisfaction. We simultaneously estimated the models of credit card use and financial satisfaction with all controls (last columns of Tables 3 and 4), and calculated the indirect paths between confidence, knowledge, and their interaction, with financial satisfaction, mediated through credit card use, bootstrapping 5,000 replications. We find that indirect path of confidence and the interaction between knowledge and confidence are significant. Knowledge alone has a marginally significant indirect effect. These results indicate that there is a relationship between confidence and financial satisfaction which is explained by credit use

Discussion

Across the analyses, we find that confidence has a magnifying effect on the relationship between knowledge and credit card use. We also find that credit use mediates the impact of confidence in the relationship between knowledge and financial satisfaction. We interpret these results to suggest that confidence influences how knowledge impacts credit card choice, and this contributes to financial satisfaction.

This conclusion must be tempered by the fact that this analysis considers survey data, so while our results are suggestive of a causal relationship, the results are correlational. One possibility is that people are more confident if they have better credit, or that more financially satisfied people use their credit in more healthy ways. However these alternate explanations would have a more difficult time explaining the unique relationships identified relating confidence and knowledge with credit card use.

One other limitation in this research is that confidence is measured with a single question, and literacy with 5 fact-based questions. These crude approximations for knowledge and confidence interfere

with the ability to reliably identify overconfident individuals, when the relationship between confidence and financial behavior may differ. Future research should experimentally manipulate confidence to understand overconfidence and credit use. Similarly we hope future research will explore how manipulated financial knowledge (i.e. through financial education) relates with confidence and financial behaviors. This is potentially important given past studies suggesting that relationships between measured knowledge and financial behaviors is stronger than the impact of financial literacy interventions on financial behaviors (Fernandes et al., 2014).

For financial managers and policymakers, our results serve as a reminder that for knowledge to be applied to behaviors such as credit card use, individuals must be sufficiently confident in that knowledge. In other words, they must subjectively know that they have high financial knowledge.

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Tables

Table 1: Financial Competence and Credit Card Use Behaviors

	(1) Pain in Full	(2) Carried Bal.	(3) Paid Min.	(4) Late Fee	(5) Exceeded limit	(6) Cash Advance
Confidence	1.248***	0.933*	0.929*	0.876***	0.918*	1.108*
	(6.71)	(-2.27)	(-2.45)	(-4.25)	(-2.42)	(2.56)
Knowledge	0.981	1.302***	1.041	1.128*	1.107+	1.081
	(-0.37)	(5.57)	(0.86)	(2.49)	(1.82)	(1.20)
Know*Confid	1.031**	0.940***	0.946***	0.947***	0.942***	0.954***
	(3.21)	(-6.95)	(-6.20)	(-5.74)	(-5.41)	(-3.77)
N	20435	20451	20509	20473	20468	20509
AIC	26848.1	27289.6	26431.6	22638.6	16877.6	15330.0
BIC	26879.8	27321.3	26463.3	22670.3	16909.3	15361.7

Exponentiated coefficients; *z* statistics in parentheses. *** p< .001, ** p<.01, * p<.05, + p<.10

Table 2: Credit Card Index by Knowledge and Confidence

	(1) Basic	(2) CC Index	(3) Demographic	(4) Comprehensive
Confidence	0.21***	0.20***	0.17***	0.17***
	(0.022)	(0.022)	(0.022)	(0.021)
Knowledge	0.12**	0.10**	0.07*	0.06+
	(0.036)	(0.035)	(0.035)	(0.034)
Know*Confidence	0.05***	0.05***	0.04***	0.03***
	(0.007)	(0.007)	(0.007)	(0.007)
Age		0.15***		0.10***
		(0.010)		(0.011)
Gender (Female=1)		0.06*		0.09***

		(0.027)		(0.026)
Race (White=1)		0.36***		0.32***
		(0.031)		(0.030)
Dependent Child		-0.43***		-0.54***
		(0.029)		(0.029)
Single		-0.24***		0.07+
		(0.037)		(0.036)
Income			0.82***	0.84***
			(0.020)	(0.020)
Temp. Unemployed			-0.92***	-0.52***
			(0.045)	(0.051)
Employed			-0.75***	-0.34***
			(0.033)	(0.039)
Constant	0.64***	0.22+	1.03***	0.30*
	(0.110)	(0.121)	(0.109)	(0.126)
Observations	27,548	27,548	27,548	27,548
R-squared	0.12	0.15	0.19	0.21
Adj. R-squared	0.12	0.15	0.19	0.21

Standard errors in parentheses. *** $p < .001$,   ** $p<.01$,   * $p<.05$,   + $p<.10$

Table 3: Financial Satisfaction by Confidence, Knowledge, and Credit Card Index

	(1)	(2)	(3)	(4)	(5)
	Basic	CC Index	Demographic	Economics	Comprehensive
Confidence	0.63***	0.54***	0.54***	0.52***	0.51***
	(0.027)	(0.025)	(0.025)	(0.024)	(0.024)
Knowledge	-0.08+	-0.13***	-0.15***	-0.18***	-0.19***
	(0.043)	(0.040)	(0.040)	(0.039)	(0.039)

Know*Confidence	0.03***	0.01	0.01	-0.00	-0.00
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Credit Card Index		0.43***	0.42***	0.37***	0.36***
		(0.007)	(0.007)	(0.007)	(0.007)
Age			-0.02*		-0.11***
			(0.011)		(0.013)
Gender (Female=1)			-0.22***		-0.20***
			(0.030)		(0.029)
Race (White=1)			0.02		-0.00
			(0.035)		(0.034)
Dependent Child			-0.24***		-0.36***
			(0.033)		(0.033)
Single			-0.19***		0.10*
			(0.041)		(0.041)
Income				0.64***	0.72***
				(0.023)	(0.023)
Temp. Unemployed				-0.84***	-1.10***
				(0.050)	(0.058)
Employed				-0.40***	-0.52***
				(0.037)	(0.043)
Constant	1.14***	0.88***	1.31***	1.19***	1.88***
	(0.131)	(0.122)	(0.137)	(0.124)	(0.144)
N	27,210	27,210	27,210	27,210	27,210
R^2	0.12	0.24	0.24	0.27	0.28
Adj. R^2	0.12	0.24	0.24	0.27	0.28

Standard errors in parentheses. *** $p < .001$, ** $p<.01$, * $p<.05$, + $p<.10$