CREDIT CARD LITERACY OF AMERICAN COLLEGE STUDENTS: A FIVE CAMPUS STUDY OF DEMOGRAPHIC DIFFERENCES

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ABSTRACT

Are college students prepared to be financially literate consumers? American college students across five campuses (n=787) were surveyed. Their knowledge of credit cards and budgets were examined. Few students were aware of the true costs of credit cards and only half had a budget. We found specific demographic subgroups of upperclassmen, older students and married students knew more about their credit cards. Gender had no effect. We also examined the 2009 CARD Act, designed to limit access to credit on campus and discovered the statute had been effectively enforced.

Key words: credit card literacy, college students, credit cards, budgeting, survey

INTRODUCTION

Financial literacy research has been confusing and contradictory because of the many operational definitions of the construct. We will describe our concept as credit card literacy. Few of our students will become hedge fund managers, but all of them will become consumers. What financial skills does a consumer, every consumer, need in the modern economy? Credit card literacy involves understanding credit cards for day-to-day life. Despite the commonplace use of credit cards, the knowledge of the convenience costs is limited and often incorrect.

In America, credit cards on campus have been a tsunami, but times are looking better. Prior to 2010, easy credit was everywhere. Norvilitis et al. (2006) found that 74% of U.S. students had at least one credit card. Block (2009) reported fifty percent (50%) of college students had four or more credit cards. Students were using credit. By 2010, the average college student credit card debt soared to $10,000 (Hodson & Dwyer, 2014).

The primary cost of credit is the interest rate. The interest rate on a credit card typically fluctuates with the prime rate (White, 2020). Ironically, the average interest rate on credit cards is 17-24%, while the US has historically low interest rates (U.S. News & World Report, 2020). Nearly half (45%) of US households have had a credit card balance for over 2 years (O'Brien, 2018). The average household has a balance over $16,000 and spends nearly $1300 per year on interest alone (O'Brien, 2018).

Besides interest, credit cards are loaded with fees. Consumers in America paid $104 billion in credit card interest and fees in 2018, and that amount was expected to grow to $110 billion annually by 2020 (O'Brien, 2018). The average late fee is $36 and in addition, some card companies raise interest rates to 27% (U.S. News & World Report, 2020). The average over balance fees are $35 (White, 2020). The convenience cash advance fee is 2-8%; however, most cards have a $5 minimum (U.S. News & World Report, 2020) which means for the convenience of getting $20 in cash, you account is lessened by $25. Lastly, many companies charge you a fee just to have a credit card, whether you use it or not. Annual fees for cards often exceed $100, but are lower or waived for the first year (White, 2020).

Over a third of Americans (36%) have experienced a hidden fee (Hutheesing, 2019). The problems are especially acute on campus, where most students are making financial decisions alone for the first time. Historically, credit card issuers were ready to pounce on these unsuspecting and naïve customers. In addition, consumers should have a budget, which is essential for those with limited discretionary income, like college students. Without this knowledge, bad financial decisions are all too common.

Congress tried to address this issue with the CARD Act of 2009, effective 2010, to slow the spread of easy credit on campus. The CARD Act required students to have either co-signors or independent income in order to gain credit (Samuelson, 2010). Part of the motivation of the current project is to determine if the CARD Act of 2009 was being effectively enforced on campus.

REVIEW OF THE LITERATURE

Since interest is the primary cost of credit, a financially literate student should know the interest rate he/she pays (Robb and Sharpe, 2009). College students, however, did not possess a strong financial knowledge (Ludlum and Smith, 2010; Jones, 2005; Warwick and Mansfield, 2000; Chen and Volpe, 2002). This lack of knowledge also included budgeting (Norvilitis et al. 2006).

Ludlum, Tilker, Ritter, Cowart, Xu, & Smith (2012) surveyed American college students (n=725) and found that 70% of undergraduates had a credit card. However, less than 10% of students paid their credit card in full monthly. This meant 90% of students paid very high interest. Fewer than one in five students claimed to know the interest rate they paid. Fewer than 10% knew their interest rate, the late charges, and the over balance penalty on their credit card(s). Less than one in ten students knew basic facts of a financial tool they have in their pocket every day.

Singh, Rylander, & Mims (2018) segmented college students into four payment behavior groupings (n=400). Students who pay full balances on time each month were predictably in better financial shape, with higher credit limits and less debt. These students also checked their statements more carefully and had more positive perceptions of credit card companies.

Friedline, West, Rosell, Serido, & Shim (2017) examined outstanding credit card debt among young adult college students and the communities in which these students grew up or lived (n = 748). They confirmed that a community's unemployment rate, average total debt,

average credit score, and number of bank branch offices were associated with a young adult college student's acquisition and accumulation of credit card debt. Community characteristics had the strongest associations with credit card debt, after controlling for individual characteristics and familial characteristics.

Limbu & Sato (2019) examined American college students (n=427) and found credit card literacy led to greater financial well-being of college students, thereby supporting the efforts of financial literacy programs.

Limbu (2017) surveyed the direct and indirect effects of credit card knowledge on credit card misuse among US college students. Credit card knowledge and social motivation were inversely associated with credit card misuse. Credit card literacy programs should incorporate strategies that can enhance students' knowledge, social motivation, and behavioral skills for the responsible use of credit cards.

Barboza (2018) studied the role that present-biased preferences and impatience play in the repayment behavior of (n=380) college students. The study found that individuals suffering from self-control issues and using credit cards to bridge unexpected shortage of income are more likely to fail to repay credit cards in full in the period after the purchase was completed, therefore, carrying over a month-to-month balance

With this as a background, we wanted to see if any demographic factors correlated with undergraduate students' credit card literacy. We crafted six research hypotheses. Those hypotheses are:

Hypothesis 1. Gender (male/female) is correlated with increased credit card literacy;
Hypothesis 2. Indoctrination (year in school) is correlated with increased credit card literacy;
Hypothesis 3. Being an international student is correlated with increased credit card literacy;
Hypothesis 4. Employment is correlated with increased credit card literacy;
Hypothesis 5. Marriage is correlated with increased credit card literacy; and
Hypothesis 6. Having children is correlated with increased credit card literacy.

For each, we started with a null hypothesis.

METHOD FOR THE SURVEY

A convenience sample was taken from large business survey classes at five state (public) schools across the United States in the fall of 2016. Those campuses included: University of Nebraska-Lincoln, University of Central Oklahoma, Oklahoma City Community College, Indiana University of Pennsylvania, and East Stroudsburg University of Pennsylvania.

Students completed the Institutional Review Board approved questionnaire during class time. The survey instrument was voluntary and anonymous. We were best able to minimize bias by using a large group survey, with anonymous results and confidential submissions. A total of 787 surveys resulted. After excluding those surveys missing significant amount of data, some questions had fewer than 787 responses. The text of the questions is in the appendix.

Most (63%, n=466) of the participants were business majors. The respondents were in the following academic years: first, 10.8%, n=81; second, 24%, n=180; third, 28.7%, n=215; fourth, 33.7%, n=253; and 21 graduate students (2.8%). In our sample, males outnumbered females 52.1% to 47.9%. Only 9.5% (n=71) of the respondents were married, and only 62

students (8.4%) had children. Most students worked while attending school (73%, n=540). See Table 1 below for descriptive statistics from the sample.

Table 1. Descriptive statistics for sample surveyed.

Total surveys completed	n = 787	Percentage
Year in school		
Freshman	81	10.8
Sophomore	180	24
Junior	215	28.7
Senior	253	33.7
Graduate	21	2.8
Total	750	100.0
Gender		
Males	390	52.1
Females	359	47.9
Total	749	100.0
Employment status		
Not employed	201	27.1
Part-time	383	51.7
Full-time	157	21.2
Total	741	100.0
Nationality		
Domestic (USA)	692	88.3
International	92	11.7
Total	784	100.0
Marital status		
Married	71	9.5
Not married	678	90.5
Total	749	100.0
Children		
0	677	91.6
1+	62	8.4
Total	739	100.0

Credit cards are still common on campus, but not universal. In our survey, over a third (37%) of students did not have a credit card. Another 30% only had a single credit card. However, 18% of our sample had four or more credit cards.

Did students understand their credit cards? Sadly, no. Table 2 (below) indicates the percentages of students who did know the features of their credit card, and the percentages range from a third to nearly 90% on some of the common fees.

Table 2. Credit Card Proficiency

Question	Correct *	Do Not Know
What is the current balance on the credit card you use most?	(261/402) 64.9%	(141/402) **35.1%**
What is the interest rate?	(177/402) 44.0%	(224/402) **56%**
What is the late fee?	(156/402) 38.8%	(246/402) **61.2%**
What is the cash advance fee?	(55/402) 13.7%	(347/402) **86.3%**
What is the over balance fee?	(75/402) 18.7%	(327/402) **81.3%**

*Assumed to be correct, a self-reported measure.

In addition, we wanted to examine student budgeting. In our sample of college students, only 373/728 or 51.2% had a budget. Half of students being prepared might sound good, but 100% of our students will be consumers and need to be prepared.

FINDINGS

We wanted to examine what demographic factors affected student financial life skills. We ran chi square analyses for relationships for independent variables (gender, year in school, employment, marital status, etc.). We used SPSS version 26 for analysis. We examined five questions on credit card literacy and one question on budgets.

For Hypothesis 1, we examined if gender (male/female) was correlated with higher credit card literacy. To our surprise, gender yielded no statistically significant results.

For Hypothesis 2, we determined year in school (as opposed to physical age) was correlated with higher credit card literacy. We found that upperclassmen more aware of four of the five credit card literacy questions. Specifically, we found upperclassmen were more aware of his/her credit card balance (x^2=32.006, df=12, p=.001); as well as the interest rate (x^2=27.429, df=12, p=.007); the late fee (x^2=28.14, df=12, p=.005); and the over balance fee (x^2=27.364, df=16, p=.038).

For Hypothesis 3, we found being an international student (non-USA) was correlated with higher credit card literacy. Specifically, we found international students were more aware of all five of their credit card literacy issues. From our analysis, international students were more likely to know the balance on his/her credit card (x^2=45.194, df=4, p=.000); the interest rate (x^2=32.903, df=3, p=.000); the late fee (x^2=16.554, df=3, p=.001); the cash advance fee (x^2=24.648, df=4, p=.000); and the over balance fee (x^2=20.23, df=4, p=.000).

In Hypothesis 4, we determined Employment was correlated with higher credit card literacy. For this question, we reduced employment to a binary issue (yes/no). We combined all full-time (which were very few) with part-time workers and considered "employed." From our analysis, employed students did better on two issues of credit card literacy and the question on budgeting.

Specifically, we found that employed students knew more about the current balance on his/her credit card (x^2=28.274, df=6, p=.000), as well as knowing about the late fee (x^2=15.432, df=6, p=.017). Employed students were more likely than non-employed students to have a budget (x^2=33.817, df=4, p=.000).

In Hypothesis 5, we found that marriage was correlated with higher credit card literacy, being statistically significant on eight of nine questions. The results found that married students were more financially aware in knowing his/her current credit card balance (x^2=7.921, df=3, p=.048); the interest rate (x^2=28.143, df=3, p=.000); the late fee (x^2=17.258, df=3, p=.001); and the cash advance fee (x^2=26.941, df=4, p=.000). In addition, married students were more likely to have a budget (x^2=13.711, df=2, p=.001).

Hypothesis 6 examined whether having children was correlated with higher credit card literacy. For this analysis, we made having children binary (yes/no) rather than based on the number of children, since few students had a child, and a very few had more than one child.

Students who had children had statistically significant results on all questions. We found students who had children were more aware of his/her current credit card balance (x^2=13.175, df=3, p=.004); the interest rate (x^2=40.68, df=3, p=.000); the late fee (x^2=23.781, df=3, p=.000); the cash advance fee (x^2=15.256, df=4, p=.004); and the over balance fee (x^2=9.413, df=4, p=.052). Also, students who had children were more likely to have a budget (x^2=6.082, df=2, p=.048).

Table 3. Significant results by factor

Question	Gender	Year	International	Employed	Marriage	Kids
What is the current balance on the credit card you use most?			x	x	x	x
What is the interest rate?		x	x		x	x
What is the late fee?		x	x	x	x	x
What is the cash advance fee?			x		x	x
What is the over balance fee?		x	x			x
Do you have a budget?				x	x	x

We finished the analysis by testing for reliability and consistency. The Cronbach's alpha for the five items in Table 3 was .834, exceeding the .70 standard for reliability.

DISCUSSION

Hypothesis 1 was not supported. Both males and females had poor credit card literacy.

Hypothesis 2 (year in school) was generally supported. Our rationale would be that more senior students, with more experience with credit cards, and more access to credit, would be more financially aware consumers. In addition, older students are closer to entering the real world (and student loan repayment) so issues of financial solvency are more urgent.

For Hypothesis 3 (being an international or domestic student) heavily favors the international students. Our explanation would be two-fold. First, we had a small group of international students which might affect the result. Second, we believed the necessity of living abroad (not with family) requires a budget. In addition, having to use credit cards for all transactions would make the international student much more dependent on the use of the credit card as a sole source of funds. In other words, necessity leads to increased awareness.

For Hypotheses 4, 5, and 6, we rationalize the overwhelming support for all three as evidenced by the adage, *if you want to learn about the real world of money, get a job, get married, and have some kids*. In our sample, the result was clear. Real world obligations make students much more aware and concerned about the financial issues. As several of our students explained, financial life skills "is all a bunch of talk until the real world happens."

Lastly, we asked whether our students had gotten a credit card after 2010, when the CARD Act became effective. The CARD Act was an attempt to stop the lax issuing of credit cards on campus. Often students were plied with free pizza, t-shirts, and other giveaways to entice them to apply for credit cards, usually unaware of the ramifications of the decision. The CARD Act required any issuer to a college student to either verify the income or have a co-signor on the account.

Table 4. Effect of the 2009 CARD Act.

Question	Yes	No
Do you have a credit card in your name?	(445/781) 57%	(336/781) 43%
Did you apply for a credit card after 2010?	(402/781) 51.5%	(379/781) 48.5%
If Yes, were you employed when you applied?	(392/402) 97.5%	(10/402) 2.5%
If Yes, did your parents co-sign?	(137/402) 34.1%	(265/402) 65.9%

In our sample, 402 students indicated they acquired a credit card since 2010. Of the, 402 with post-CARD Act credit, 392 (97.5%) were employed at the time, and 137 (34.1%) had parental co-signors (some had both). Based on these results, it appears the CARD Act enforcement has been a success. The time of students getting credit cards without any income verification or co-signor appears to be gone.

LIMITATIONS AND IMPLICATIONS FOR FURTHER RESEARCH

Because of the limited sample size, we are not able to generalize to all college students, nor to all students at the examined schools. Further, this analysis describes correlation, not causation, so these results should be considered preliminary.

The biggest limitation of this project is that it relies upon self-reported knowledge. The authors had no way to independently verify the correct answers. As such, these results likely over-estimate students' understanding of financial tools.

Respondents might also face some confusion of credit versus debit cards. Future projects should be clear in defining this difference, as debit cards may not provide any credit access, but students might not understand the distinction.

While five campuses were surveyed in the current project, all are state schools. Are private schools or for-profit schools different? One would assume those other two types of higher education appeal to different sets of students. Would those students have different views on financial life skills? Further research would be justified.

Another limitation is the sample size. A larger sample size could result in more (statistically significant) detailed analysis of the sub-groups (religion, political views, etc., as well as undergraduate versus graduate students). In addition, a larger sample size could define majors into discipline areas (accounting, tourism, management, etc.) to see if any disciplines had different views.

Lastly, future projects should incorporate student loans into the discussion. Student loans are a very different form of credit, with heavily regulated terms and subsidized interest, so they lack the punitive fees so common in credit card use. Clearly, further research on this topic is warranted.

Despite being well-versed in the detailed content of their discipline, this study demonstrates that college students need more information on the consumer skills they need for everyday life: credit card literacy and having a budget.

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APPENDIX ONE. SURVEY QUESTIONS.

This is a voluntary research project on student views of financial issues. The survey should take approx. five minutes to complete. There is no penalty for refusal to participate. You must be at least 18 years old to take this survey. DO NOT PUT YOUR NAME OR IDENTITY NUMBER ON THE SURVEY. ALL ANSWERS ARE ANONYMOUS AND CONFIDENTIAL. If you do not wish to participate, you may hand in the survey form blank. Thank you for your input on this research project.

How many credit cards do you have?
Do you have a credit card in your name?
Have you applied for a credit card in your name since 2010?
---Were you employed when you applied for credit?
---Did your parent's co-sign on your credit card?
What is the Interest Rate (APR) on the credit card you use most often?
What is the Late Fee for the credit card you use most often?
What is the Cash Advance Fee for the credit card you use most often?
What is the over balance fee for the credit card you use most often?
What is the current balance of the credit card you use most often?
Do you have a monthly budget?
What year in school are you presently?
What is your college?
Are you male or female?
Are you married?
Have you taken a class in personal finance?
Are you currently employed (this semester)?
How many children do you have?
Are you an international student?