Variables Influencing Credit Card Balances of Students at a Midwestern University

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This research used a Web-based survey of students at a Midwest regional university to measure the extent of credit card use by first-year students and seniors. The results indicate that the variables influencing credit card use and the carrying of a balance from one month to the next include the number of cards held by the student, the student's income level, and the presence of educational loans. A significant number of surveyed students at both grade levels are affected by credit card debt, but no specific type of purchases lead to carrying a balance. First-year students and seniors differed significantly in the number of cards they held, the monthly balances they carried, and the ways in which they acquired their cards. Those who acquired their credit cards through on-campus solicitation carried a substantially higher average monthly balance than those students acquiring the cards via other methods. The students' involvement with their parents affected their card balance, but knowledge of interest rates and types of transactions appeared to have no influence.

Credit cards are a growing problem for Americans of all ages, especially for college-age individuals. According to Manning in *Credit Card Nation* (2000), young lives have been ruined by credit card debt. Their problems include dropping out of college, physical and emotional health problems, family conflicts, bankruptcy, job rejections (due to poor credit histories), loan denials, inability to rent apartments, professional school rejection, and even suicide.

Articles from counseling and financial aid journals indicate that financial problems permeate student life (Oleson, 2001; Pinto, Parente, & Palmer, 2001). Legitimate reasons for student credit card use are convenience, security, emergency use for unplanned family travel, medical expenses, and establishing credit histories. Reasons that should be viewed with caution and concern are financial inexperience, purchase of non-necessities, and keeping up with friends' lifestyles. Credit card balances can become unwieldy when students make only the minimum required payments and interest compounds.

A Nellie Mae study (2001) shows that Midwestern students have the greatest likelihood of owning a credit card, with 88 percent of these students owning at least one card. This same study indicates that Midwestern students also have an average credit card balance of $2,478, which is higher than students in other regions. Approximately 11 percent of Midwestern students have balances exceeding $7,000 (Nellie Mae, 2001).

Due to concerns about rising indebtedness among Midwestern students, a Student Senate committee chair at the University of Wisconsin-Eau Claire (UW-Eau Claire) requested information about how to tackle the problem of rising student credit card debt. A related issue was whether the university should sponsor affinity credit cards for current students and allow on-campus credit card recruiting. An interdisciplinary group of researchers at the university conducted a survey of UW-Eau Claire students, asking the extent to which they were affected by credit card debt. The study was intended to determine whether only a few were affected on this campus or whether such debt is as prevalent as the literature suggests.

This article describes the extent and impact of student credit card use at UW-Eau Claire. Concerns addressed include the characteristics of students using credit cards; the times in students' lives at which credit card use begins; the variables that influence use of credit cards and carrying of balances; the differences in use between first-year students and senior students; and the interventions that may be designed to reduce student credit card debt buildup.

Related Research

Undergraduate students are a prime source of new customers for credit card companies, and college students are actively targeted through a variety of advertising and mail techniques (Kidwell & Turrisi, 2000). Many students finance their education through student loans and, depending on the cost of their institution and the length of their course of study, often graduate with a significant amount of debt (Manning, 2000; Pinto, Parente, and Palmer, 2001; Blair, 1997). College students increasingly work many hours while in school to meet their financial needs. Although there may be many causes to increasing working hours among college students, excessive card debt payments might contribute to this increase, which can lead to less study time, less time for resume-building or co-curricular activities, and increased anxiety or worry over debt. Sometimes students decide to take time off from school to try to catch up on their debts. There are anecdotal reports of student suicide attributed to despair over credit card debt (Manning, 2000).

Undergraduate Students and Credit Cards: An Analysis of Usage Rates and Trends (Nellie Mae, 2001) indicated that 83 percent of undergraduate students possess at least one credit card, representing an increase of 24 percent since 1998. In 2001, 54 percent of first-year students and 92 percent of sophomores owned a least one credit card. Only 23 percent have a student loan, although student loan debt is much less expensive. Nina Prikazsky, vice president of operations at Nellie Mae, said, "For many students entering college today, their first credit experience is with a credit card, whereas 10 years ago it was through a student loan" (Nellie Mae, 2001, p. 1). While students with credit cards may not necessarily use them or carry a significant

balance from month to month, the latest study indicates that 27 percent of students with credit card debt have balances in excess of $3,000 (Nellie Mae, 2001).

Further, a study by Staten and Barron (2002) found the delinquency rates on both student and young-adult accounts are higher than those for account holders age 25 and older. Irvine (2002) indicates that the growth of credit card debt has financial experts worried because bankruptcies filed by those under age 25 hit a record high in 2000. Irvine also observed that graduating from college can mean having to face tens of thousands of dollars in debt (Irvine, 2002).

In "Plastic: Handle with Care," Wyatt (2002) observed that even with increasing tuition, parents send kids off to college with high-interest-rate credit cards. Both higher tuition and high credit card rates increase the total cost of college for parents. Iowa State University Associate Vice Provost Tahira K. Hira noted that students do not understand the effects of unpaid credit card bills on their well-being (Wyatt, 2002).

A June 2001 General Accounting Office survey of 100 officials at 12 colleges—including directors of financial aid, directors of counseling services, and student affairs vice presidents—found that consistent misuse of credit cards by students, combined with student-loan debt, could lead to substantial debt burdens that "could become particularly severe after graduation, when many students must begin making payments on education loans" (GAO, 2001, p. 3).

Methodology

To measure credit card use by students at UW-Eau Claire, we developed a survey that included questions on demographics, number of cards held, balance carried forward each month, annual fees, interest rates, how the card(s) were acquired, family income level, whether the cardholder held one or more jobs, and the number of hours worked each week. The survey found that, from the time UW-Eau Claire undergraduates arrive on campus until graduation, they double their average credit card debt and triple the number of credit cards in their possession.

We posted the survey on the Student Senate Web site. We then e-mailed an invitation to participate in the survey to a random sample of first-year students and seniors who were identified as continuing students. We chose this method of delivery because it was believed the current generation of computer-savvy students is more likely to respond to a computer-based survey, especially one that could be completed relatively quickly.

The survey sample included 3,838 students: 1,898 first-year students and 1,940 seniors. We administered the survey in the fall semester, a couple of weeks before the Thanksgiving break. Thus, the survey results would reflect how the newly incoming freshmen (over 90 percent of freshmen begin their first semester in the fall) would differ from students in their senior year. The sample was drawn from a population of 2,848 first-

year students and 2,458 seniors enrolled in the fall of 2001. We received a total of 1,074 usable responses, representing a 27.98 percent response rate.

About 41 percent of respondents were first-year students and 59 percent were seniors. Respondents' ages ranged from 17 to 52 years: 37.5 percent of respondents were 18 and 19 (first-year students), and 53.7 percent were 21 to 23 (seniors). Women comprised 72.4 percent of the respondents. When compared with the overall university enrollment, female students were overrepresented in the sample. Roughly 88.6 percent of respondents were single, 4.2 percent were married, and 6.3 percent indicated "living together."

Respondents' majored in arts and sciences (33.5 percent), business (27.7 percent), and education (27.2 percent). The remainder (11.6 percent) majored in human sciences or nursing, or were undeclared. Compared with the overall university enrollment, business students were overrepresented in the sample. The overrepresentation of female students and students majoring in business calls for caution in interpreting data analysis results.

Responses of first-year students and seniors were compared using descriptive statistics, regression, ANOVA, and chi-squared analyses to examine the significant differences between the two classes and independent variables that may be important predictors of credit card balance.

Results

Number of Credit Cards and Monthly Balance Carried
About 43 percent of first-year students and 88 percent of seniors owned at least one credit card (see Table 1). Approximately 11 percent of first-year students and 53 percent of seniors had two or more credit cards. The greatest number of cards held was more than 10. On average, seniors held a significantly higher number of credit cards (2.08) than first-year students (.67) [$p < 0.001$]. Female students held slightly more credit cards (1.54) than males (1.41) but this difference was not statistically significant [$p = 0.236$].

The survey results show that a clear majority of students with credit cards do not carry balances from one month to the next. Among those who carried at least one credit card, just 14.4 percent of first-year students and 36.8 percent of seniors carried a balance from month to month; roughly 4 percent of first-year students and 18 percent of seniors carried a balance of $1,000 or more from one month to the next. Overall, the number of students who carried a balance from one month to the next was quite small, which was encouraging. However, the highest level of debt was $8,115 for a first-year student and $13,760 for a senior, which was a source of concern. On average, seniors carried a significantly higher balance ($574) than first-year students ($72) [$p < 0.001$]. The average balance carried by men was slightly higher ($468) than the balance carried

Table 1
Comparison of Credit Card Usage between First-year and Senior Students
at the University of Wisconsin-Eau Claire

	First-year (*n*=437)	Senior (*n*=637)
Within total sample (*n*=1074)		
Average number of cards	.67	2.08
Percentage of students who owned credit card(s)	42.8%	88.2%
Percentage of students with two or more credit cards	11.2%	53.0%
Among those who owned at least one credit card (*n*=749)		
Percentage with a revolving balance	14.4%	36.8%
Percentage with a monthly balance greater than $1,000	4.3%	18.5%
Range of credit card debt for students with a balance	$10 to $8,115	$10 to $13,760
Mean balance	$72	$574

Source: University of Wisconsin-Eau Claire Credit Card Survey, 2001.

by women ($334) but the difference was not significant (*p* = 0.104). The first-year student who carried a balance of $8,115 appears to be an outlier in the data. Seniors, however, showed an even, continuous distribution in the amount of their balances up to the highest credit card debt of $13,760.

There was a statistically significant difference in working hours based on level of credit card debt (ANOVA, *p* <.01). Students with no credit card debt worked an average of 15 hours per week. However, the average hours worked jumped to 19 hours per week for those with a balance of less than $2,000, and 20 hours per week for those with more than $2,000 in debt. The relationship may be interpreted in different ways: students with a higher amount of credit card debt may need to work more hours to pay off this debt (higher card balance causing increased working hours); or students with limited resources (i.e., coming from a low-income family and/or having already borrowed their maximum eligibility in student loans) may be forced to both work more hours and accrue more credit card debt as limited resources cause both longer working hours and higher credit card balance. The relationship of other debts and income levels to credit card debt is analyzed later in this paper.

Regression analysis indicates that the number of credit cards is a significant predictor for the amount of balance carried from one month to the next at the .01 level of significance. This relationship held true whether we examined students with any number of credit cards (*n* = 799; Beta = 112, R^2 = 0.172) or only those with one to four credit cards (*n* = 690; Beta = 236, R^2 = 0.174). For this reason, the survey collected information about

the balance carried only on the four cards with the greatest revolving balance. In short, the number of credit cards owned was a significant predictor of the total credit card balance carried from month to month. However, it may also be argued that students with higher balances and frequent use would obtain multiple cards. The relationship between credit card balances and the number of credit cards owned could be a topic for future research.

Knowledge of Interest Rates and Spending Limits

In this study, we assumed that the students who knew their interest rates and spending limits would tend to have a lower balance, and those who did not know the interest rate would tend to have a higher balance. However, the analysis indicated that the opposite was true. The independent variables of ignorance of interest rates and ignorance of spending limits (coded as 1 = ignorant and 0 = knowledgeable) were both negatively correlated with the student's credit card balance at the .01 level of significance. Students who were ignorant of their interest rates tended to have no balance or a low balance, controlling for the number of credit cards (Beta = -396, R^2 =0.145). Students who carried a higher balance tended to know their credit card interest rates. Likewise, ignorance of their spending limits on their credit card purchases was negatively correlated with credit card balance (Beta = -482, R^2 = 0.142).

One probable explanation is that students initially may not care about the interest rate because they intend to be responsible users, paying off their balances each month. They may also plan to use the card only for emergency reasons, making them unconcerned about the spending limits. However, as the students begin to carry a monthly balance and as their balances grow due to compounding interest, they are forced to pay attention to their spending limit and interest rate.

An alternate explanation is that, because of their ignorance, students spend and build up a monthly balance on their credit card. As the interest expense increases, they pay attention to the interest rate. This explanation presents an opportunity for additional research.

A test of whether education on interest rates and spending limits would help control or lower students' credit card balances at UW-Eau Claire might best be carried out as a longitudinal study, beginning with new, incoming first-year students. After providing education and awareness of interest rates and spending limits of credit cards at the beginning of the students' education careers, future researchers could survey these students during their tenure at the university to compare their results with the results from this original study group.

Other Debt Loads

Because many students carry other debts in addition to credit cards, we examined the relationship between credit card debt

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and other debts. For all students with credit cards, regardless of whether they carry a credit card balance [$n = 1,074$], the analysis indicates a positive, significant correlation between the amount of educational loans and car loans (Pearson correlation of .227, $p < .001$). There also exists a positive, significant correlation between students' education and car loans with their credit card balance (Pearson correlation of .382 and .204, respectively, $p < .001$.). The same positive, significant correlation also occurs when observing only those students who carry a monthly credit card balance ($n = 238$). These results seem to suggest that students use all financial avenues available to them. Once they feel that they have no other financial options, they begin to incur credit card debt.

Income Levels

The sample was divided into three groups based on family income levels (less than $25,000, $25,000 to $60,000, and more than $60,000) to see if income was a factor when accruing credit card balance. A clear pattern emerged when ANOVA was applied: the mean credit card balance decreased as income level increased at the $p < .05$ level of significance. The mean credit card balance was $2,363 for income levels less than $25,000, while the mean balance was $1,256 for income levels above $60,000.

When we applied regression to the group of students carrying a monthly credit card balance, family income level was a negative significant predictor for a credit card balance, while the number of credit cards owned and student loan debt were positive significant predictors for balance. On average, lower-income students had higher credit card balances, and students with higher income levels had lower balances. Debt levels changed by approximately $350 from one level to the next when we controlled for the number of credit cards and student loan debt ($R^2 = 0.194$). However, the relatively low level of correlation seems to indicate that there are other factors that account for the relationship between credit card balances and income for which our model does not account. These unknown factors may be the goal for investigation in future research.

Transactions

Respondents were asked for the type of transactions they made with credit cards. These included cash advances, groceries, restaurants, bar tab/drinks, gas, clothing, gifts, and others. The survey also asked the frequency of transactions made on credit cards (multiple times a week, once a week, every two to three months, once a year, or never). The instructions clearly stated that debit cards should be excluded when answering the survey. Our analysis did not discover any relationship between types of transactions, frequency of use, and balance carried.

The data showed an interesting finding with respect to students' intent when using credit cards. When asked "when do you use your credit card: in emergency situations only or non-emergency situations also?" 14 percent indicated that they use their credit cards only for emergency situations, and 86 percent use the cards also for non-emergency situations. Those students who used credit cards only for emergency situations had a significantly lower monthly balance ($116) than those with both emergency and non-emergency use ($599; ANOVA, $p <$ .001).

Chi-squared analysis indicated that there is a significant difference between first-year students and seniors in their intent of use of credit cards. A disproportionately higher number of first-year students (26 percent) intended to use their credit cards for emergency situations only, compared with 10 percent of seniors. On the other hand, a disproportionately higher number of seniors (90 percent) were willing to use credit cards for non-emergency situations, compared with 74 percent of first-year students. The result seems to imply that although the incoming first-year students intend to use their credit cards for emergency situations only, many of them may change their pattern of use by the time they become seniors. It appears that living expenses, as well as paying expenses related to job hunting or applying to graduate/professional schools while preparing for life after graduation, may have affected their pattern of use.

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Method of Acquisition

Table 2 indicates that 72 percent of students' credit cards were acquired as a result of direct solicitations (direct mail solicitations, store offers, on-campus solicitations, and phone/telemarketing), while 15 percent of credit cards were issued by the banks where the students have an account. Parents gave the credit cards to their students in 6 percent of the cases, and the same percentage obtained their cards through on-campus solicitation.

We identified several interesting differences in how first-year students and seniors acquired their cards (chi-squared, significance level of .005). A disproportionately higher number of first-year students (9 percent) than seniors (4 percent) received their cards from their parents. A higher proportion of first-year students (4 percent) than seniors (1 percent) obtained credit cards from the Internet. Seniors, however, were accepting credit cards through store offers in a disproportionately higher number (29 percent) than were first-year students (13 percent). Overall, students seem to develop different ways of obtaining credit cards as they progress through college. A separate chi-squared analysis led to the conclusion that the level of family income did not have any influence on how the students acquired their credit cards (at the .05 level).

Method Described in Survey	Overall Percentage (First-year students & seniors)	First-year students	Seniors
Direct mail solicitations	40%	43%	38%
Store offers	25%	13%	29%
Bank where I have an account	15%	18%	13%
Parents gave it to me	6%	9%	4%
On-campus solicitations	6%	6%	5%
Internet/on-line	2%	4%	1%
Phone/telemarketing	1%	2%	1%
Other	6%	5%	6%

Totals do not sum to 100% due to rounding.
Source: University of Wisconsin-Eau Claire Credit Card Survey, 2001.

Examining each credit card as a unit of analysis, we found that the cards received from parents had a significantly lower monthly balance ($93) than the cards acquired through direct mail solicitations ($520) (one-way ANOVA). Interestingly, those cards acquired via on-campus solicitation had the highest monthly balance ($668). This difference may imply that when receiving credit cards from parents, students may have received some advice or education on the responsible use of credit cards. Also parents who give students the cards may be paying the balance on the students' behalf. In short, parents' involvement in their children's lives may have had a positive effect on keeping a low credit card balance.

Another possibility is that more affluent parents are more likely to provide credit cards and therefore income is really the driving factor in determining balances. Future research should clarify the effect of parents' income level on the frequency of parents providing credit cards to their children, which may also affect the amount of balance carried on those cards.

Where Students Go for Help
The observation that parental involvement influences credit card use was given added weight when one of the survey questions asked to whom students would most likely talk if they became burdened with credit card debt. Using a Likert scale of 1 to 5 with 1 = most unlikely and 5 = most likely, the students responded that they most likely would turn to their parents for help. The parental response received a mean score of 4.167 on

the five-point scale. About 56 percent of the responses indicated that parents were the most likely persons to whom the students would talk for help with their credit card debt. When combining the "most likely" and "likely" categories, 81.3 percent of the respondents would seek parental advice.

On the other hand, the percentage of respondents who would most likely talk to financial aid counselors and counseling offices was very low. These groups received mean scores of 2.163 and 1.708, respectively. Roughly 66 percent of the students indicated they would be "unlikely" or "most unlikely" to speak with the financial aid personnel, while 84.2 percent would be "unlikely" or "most unlikely" to go to the counseling office.

As Table 3 shows, there exists a definite pattern of decreasing credit card balances associated with students who would speak with their parents about credit card debt burden. The one-way ANOVA indicates a significant difference among the means of credit card balances at the .05 level. Those students most unlikely to speak with parents carry an average monthly balance of $2,850, while those most likely to talk with parents have a $1,443 average monthly balance. This seems to suggest that parents can effectively assist their children in eliminating or reducing credit card balances. No such patterns emerged regarding other persons from whom students may potentially seek help. The result may also be viewed as parents' level of education and family income level having an effect, for more educated and affluent parents may be more apt to provide advice to their children in regards to credit card use.

Table 3
Mean Credit Card Balance for University of Wisconsin-Eau Claire Students, by Students' Willingness to Speak to Their Parents about Credit Card Burdens

Parents as the Person to Whom the Student Would Go for Help	Students' Mean Credit Card Balance per Month
Most unlikely	$2,850
Unlikely	$2,063
Neutral	$1,732
Likely	$1,499
Most likely	$1,443

Source: University of Wisconsin-Eau Claire Credit Card Survey, 2001.

Conclusions

At the University of Wisconsin-Eau Claire, credit card use is a problem for some students. The number of credit cards held, family income levels, and students' educational loan balances were statistically significant factors in predicting the amount of credit card debt students carry.

First-year students and seniors differed significantly in several ways. First-year students owned fewer credit cards than seniors, and the monthly balances they carried were lower ($72 versus $574). More first-year students acquired their credit cards from the Internet, while more seniors obtained their credit cards from store offers. A higher number of first-year students received their cards from their parents than did seniors. Both first-year students and seniors who acquired credit cards through on-campus solicitation carried substantially higher average monthly balances than students who received their cards by other methods.

Lower credit card balances were found for students who indicated they would talk with their parents if they became overburdened by credit card debt, and for students who received their cards from their parents. This suggests that parents can effectively assist their children in reducing or eliminating credit card balances in various ways. Some of these may include discussing financial issues, showing support, encouraging responsibility, and occasionally paying off credit cards on the student's behalf.

Knowledge of interest rates, spending limits, and types of transactions appears to have no influence. Students from families with incomes of less than $25,000 appear to need additional resources for obtaining their education.

As college costs continue to climb, intervention through counseling, teaching coping and financial management skills, and helping students locate other sources of funding will become increasingly important. Materials are needed to make students and parents aware of all financial aid opportunities (loans with lower interest rates, unsubsidized loans, and work-study opportunities) as well as potential problems of credit card use. Presentations to help administrators and faculty become aware of the problems facing UW-Eau Claire students would help change the attitudes. This is not just a national problem but a very real local one as well. Orientation presentations for first-year students would give an early warning to both parents and students on how and why problems occur, and stress to parents their important role in helping their children develop financial savvy and skills.

Other resources at UW-Eau Claire might include a dean of students' newsletter to parents that contains an article about credit card debt. This newsletter could also publicize access to the Wisconsin "do not call" list for telemarketing and the FTC Web site for blocking unsolicited mailings to prevent credit-card solicitations to students, as well as other good Web sites relating to debt management, budgeting, and credit. Departments on campus may be encouraged to inform students about any available unsubsidized institutional loans that may offer more favorable terms than credit cards. Other approaches may include working with a local branch of Consumer Credit Counseling

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Services to offer one- or two-credit debt management courses in the general education area, and initiating a peer credit-counseling program.

Further research on topics related to students dropping out of college because of credit card debt, as well as on the relationship between students' grade point averages and credit card debt, might also shed light on intervention points and sources for assistance. In addition, further research may be useful on additional income factors that may have an effect on credit card balances, as well as the relationship between credit card balances and the number of credit cards owned.

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