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# *Money Management Knowledge of College Students*

by

*Sharon M. Danes and Tahira K. Hira*

**This study describes the money management knowledge of college students and identifies the characteristics of students associated with the differences in that knowledge level.**

## *Money Management Knowledge of College Students*

Many students are in college to prepare for an income-earning career. However, most college curricula put very little emphasis on preparing students to effectively manage the money they earn. In addition, more students are taking on greater amounts of debt to acquire their education.

Many college students marry during their college years or soon after. Their knowledge level affects their families' financial well-being. The spending and saving behavior of young families is related not only to their current and future earning capacity but also to the positive or negative responses provoked by social expectations. Young families' financial situations are complicated by the fact that many young couples are unsophisticated regarding moderately effective and compatible ways of handling their income (Feldman, 1976).

The purpose of this study is to describe the money management knowledge of college students and to identify those student characteristics that help explain differences in knowledge. The five areas of money management knowledge covered include credit cards, insurance, personal loans, record keeping, and overall financial management.

## *Previous Studies*

More is known about the financial knowledge of high school students than college students. No studies were found that used college students as the sample. Furthermore, most of the studies were done in the fifties and sixties.

High school students had a high level of knowledge in the area of budgeting (Bakken, 1967; Furrer, 1960; Jelley, 1958; Larson, 1970; NAEP, 1979). A low level of knowledge for high school students was most often found in the areas of personal loans, consumer credit, insurance, and investments (Bakken, 1967; Cogle, 1977; Furrer, 1960; Jelley, 1958; Langrehr, 1979; NAEP, 1979; Thompson, 1965; Yacyk, 1965). Bakken (1967) discovered that students from higher socioeconomic groups scored significantly higher on money management tests than those from lower socioeconomic groups.

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### *Data*

A random sample of 716 students was selected from the University telephone directory. Questionnaires were mailed at the end of March, 1983. Follow-up phone calls were made during April. The final number of usable questionnaires in the sample was 323, a return rate of 45 percent.

Table 1 includes all of the specific demographic characteristics of the sample and the total university population. The sample characteristics are very similar to those of the total student body. The largest percentage of students were enrolled in the College of Sciences and Humanities (39%). The average student was 21 years old, and the average student's income from all sources in 1983 was \$6,600. The greater proportion of the students was male and single. Roughly the same proportion of students were unemployed as were employed part-time. The majority of the students either lived in residence halls or in apartments off-campus. The largest proportion of the students were seniors (29.2%).

### *Knowledge Levels and Operational Definitions*

This section describes the level of money management knowledge of the college students. It also describes the grouping of questions into various indexes. The latter procedure is done to facilitate the multivariate analyses that are used in this study.

Each of the questions in the questionnaire was coded as a "0" for an incorrect answer and a "1" for a correct answer. The knowledge questions that emphasize each of five financial management areas are summed to create an index. The five indexes include credit card knowledge, insurance knowledge, personal loans knowledge, record keeping knowledge, and overall financial management knowledge.

The reliability of the entire questionnaire was .76. The reliability score that is used here and in the description of the indexes is Cronbach's alpha from the SPSSX procedure "Reliability" (SPSSX, 1986). This procedure allows for the examination of the bivariate and multivariate relationships among the items included in the index. Such an examination provides a check on the validity of the questions that comprise the different variables. The validity of the instrument was further addressed through an independent assessment by three faculty members, with expertise in financial management, from the Iowa State University Department of Family Environment. When the Cronbach's alpha starts dropping below .50 or .40, then the use of the index becomes questionable (Babbie, 1979).

Before a description of the individual indexes is provided, a further point needs to be explained about the reliability measure. Because of the mathematical computations used in figuring Cronbach's alpha, it is affected by the number of items used in the procedure. There are a total of 51 questions that are used in determining the reliability of the entire questionnaire versus 8 or 13, for example, for the individual knowledge indexes. So just by this fact alone, the reliability of the entire questionnaire would be much higher than the individual indexes, even before the examination of the relationship among the items is considered.

Table 2 includes a short description of the questions included in each of the money management indexes. It also includes the percentage of correct responses for each of the questions. For purposes of discussing these frequency distributions, the 80-99 percent category will be described as a high level of knowledge; the 60-79 percent category will be described as a medium level of knowledge; 40-59 percent, a low level of knowledge; and 20-39 percent, a very low level of knowledge.

Table 1. The Demographic Characteristics of the Sample and Population of Students

(N = 323)

	Sample Percentage	Population Percentage
<b>College</b>		
Agriculture	16.6	10.4
Design	6.2	6.7
Education	6.0	4.6
Engineering	22.0	19.5
Home Economics	4.1	5.0
Science and Humanities	38.6	36.8
Veterinary Medicine	2.8	1.8
Other	3.4	14.8
<b>Classification</b>		
Freshman	14.0	25.0
Sophomore	19.9	18.3
Junior	19.3	18.8
Senior	29.2	22.0
Graduate	16.1	14.6
Special	1.6	1.3
<b>Sex</b>		
Male	65.2	62.5
Female	34.8	37.5
<b>Residence Type</b>		
Residence Halls	40.3	36.9
Greek	10.0	9.0
University Student Apartments	10.3	8.7
Off-campus	39.3	45.4
<b>Marital Status</b>		
Married	20.5	13.6
Single	77.5	86.4
Divorced	.9	
<b>Age</b>		
17-20	37.8	45.2
21-22	32.2	25.8
23 and older	30.0	28.2
<b>Employment Status</b>		not available
Full-time	8.7	
Part-time	42.2	
Unemployed	49.1	
<b>Income</b>		not available
\$ 500-4000	33.0	
\$4001-7000	36.5	
\$7000 or more	30.5	

Table 2. Frequency Distribution of Correct Responses To the Five Money Management Knowledge Indexes

	Percentage			
	<u>20-39</u>	<u>40-59</u>	<u>60-79</u>	<u>80-99</u>
<u>Credit Card Knowledge</u>				
Use for identification				85
Cost after payment due date				83
Interest rate computation			65	
Interest when bill is paid within 30 days			60	
Billing error procedures		59		
Issuance without application		43		
Credit card billing error legislation	37			
Procedure when faulty merchandise was purchased	28			
<u>Insurance Knowledge</u>				
Relative importance of major medical insurance			77	
Relative importance of life insurance		47		
Relative importance of disability income insurance		44		
Provisions of auto collision insurance	32			
Relative coverage of term insurance	28			
Rate of return of cash value life	28			
<u>Personal Loan Knowledge</u>				
Need to know total amount to be paid				98
Need to know number and amount of payments				97
Need to know lender's policy for missed payments				96
Reducing the total finance charge by size of downpayment				89
Need to know true APR				87
Need to know pre-payment penalties				86
Need to know lender's source of money			71	
Need to know if there is a balloon payment			69	
Need to know lender's interest rate			68	
Need to know if credit life insurance is required		57		
Credit arrangements with dealer-retailer are advantageous		49		
Source of highest interest rate		47		
Need to know prime interest rate	35			
<u>Record Keeping Knowledge</u>				
Need to reconcile bank statement each month				93
Frequency of retaining loan records				91
Record keeping and budgeting are the same				91
Frequency of retaining cancelled checks			79	
Frequency of retaining major purchase receipts			75	
Frequency of retaining credit card receipts			63	

Table 2 continued

	Percentage			
	20-39	40-59	60-79	80-99
<u>Overall Financial Management Knowledge</u>				
Gross income used in budgeting				94
Importance of identifying goals				94
Interest compounding is important in comparing savings accounts				92
Need for training children in money management				88
Family input is important in budget making				82
Real estate never depreciates in value				82
Investors always incur risk				81
Importance of a will				80
Action to obtain good credit rating			78	
Money spending patterns reflect values			76	
Limit of credit card purchases			67	
Everyone has a credit bureau data file			64	
Need for net worth statement		59		
Purpose for consolidation loan		47		
Mortgage interest is tax deductible	38			
Need for IRA	28			
Current APR	27			
Government insurance on money market funds	23			

#### *Credit card knowledge index*

This index includes eight questions. The topics of the questions in this index include the following: the use of credit cards as a form of identification, the cost related to payments made after the due date, the computation of interest charges, whether interest applies if the bill is paid within 30 days, the correction of billing errors, the rules governing the issuing of credit cards without an application, the legislation regulating billing errors, and the procedure to be followed when faulty merchandise is purchased. The reliability of the index is .51.

The mean score for this index is 4.59. This mean indicates that out of the possible 8 questions on credit cards in the index, a student would answer correctly, on average, 4.59 of the questions. Another way of interpreting this mean is that, on average, 57.4 percent of the questions in this index are correctly answered.

There is a relatively normal distribution of correct answers for questions included in the credit card knowledge index (Table 2). A high level of knowledge exists in questions that address common uses of credit cards. The knowledge level decreases when the questions address interest charges and/or problems that might rise in the uses of credit cards.

#### *Insurance knowledge index*

There is a total of six questions in the insurance knowledge index. The index includes questions on major medical insurance, life insurance (term and whole life), disability income insurance, the provisions of auto collision insurance, and the rate of return on cash value life insurance policies. The reliability of this index is .53. On average, 48.8 percent of the questions included in this index are answered correctly. Except for the question about the relative importance of major medical insurance, all the questions are in the low or very low knowledge level category (Table 2).

### *Personal loan knowledge index*

Thirteen questions are included in the personal loan knowledge index. The reliability of this index is .63. On average, 73 percent of the questions about personal loan knowledge are answered correctly. The index includes a series of questions about obtaining loans. The questions include the need to obtain each of the following pieces of information in order to obtain the most advantageous loan for the least cost to the respondent; the total amount to be repaid, the number and amount of payments, the lender's policy for missed payments, the true annual percentage rate (APR), the prepayment penalties, the lender's source of money, the existence of a balloon payment, the lender's interest rate, the prime interest rate, and credit life insurance. The index also includes questions on the affect of the size of the downpayment on the total finance charges, the cost of arranging credit with dealer-retailers as compared to other sources, and the cost of borrowing from various sources. Six out of 13 of the questions in this index fall in the high knowledge level category (Table 2). Most of the questions address basic knowledge about personal loans. Questions about specifics such as balloon payments, credit life insurance, and the cost comparisons among institutions granting loans have fewer correct responses.

### *Record keeping knowledge index*

A total of six questions is included in the record keeping knowledge index. Of the possible 6 questions on recordkeeping, a student would answer correctly, on average, 4.91 of the questions. This fact means that, on average, students answered correctly 81.8 of the recordkeeping questions. The reliability score of the index is .53. The questions in the index include the reconciliation of bank statements, the differences between record keeping and budgeting, and the frequency of retaining loan records, cancelled checks, receipts for major purchases, and credit card receipts. The level of knowledge of the students about record keeping ranges from medium to high.

### *Overall financial knowledge index*

A total of 18 questions is used to construct the index reflecting overall financial knowledge; it has a reliability score of .62. On average, the students answered two-thirds of the questions in this index correctly. The questions in the index include topics such as the following: use of gross income versus take-home pay as a basis for budget making, the importance of identifying one's goals, the importance of the frequency with which interest on savings accounts is compounded, the parent's role in teaching children money management skills, the importance of family input in budget making, the fluctuation of real estate value, the risk level of investments, the importance of a will, the process of obtaining a good credit rating, the relationship of family values and spending patterns, the level of credit use in relation to income level, the role of the credit bureau, the importance of a net worth statement, the importance of loan consolidation, mortgage interest and its tax deductibility, the importance of individual retirement accounts (IRA), the current APR, and the insurance protecting money market accounts. The simpler the question, the higher percentage of correct responses. As the level of difficulty of the question increases, the percentage of correct responses decreases.

There is a discrepancy between what the college students say they should know and what they actually do know. About 87 percent (Table 2) answered correctly when asked if one needs to know the APR when applying for a loan. However, only 38 percent of the students could correctly provide the APR on charge accounts they are currently using.

### *Sociodemographic characteristics*

The sociodemographic characteristics included in the study are age, marital status, sex, employment status, place of residence, income, and class status. For the regression analyses, four of these variables are treated as dummy variables: marital status (single = 0, married = 1), sex (females = 0, males = 1), employment status (unemployed = 0, employed = 1), place of residence (on campus = 0, off-campus = 1).

A dummy variable is a variable which is coded 1 to indicate the presence of an attribute and 0 in the absence (Bohrstedt and Knoke, 1982). Since the dummy variables have arbitrary metric values of 0 and 1, they may be treated as interval variables and inserted into a regression equation (Marsden, 1981; Pedhazur, 1982; SPSSX, 1986).

Income is the total amount variable from all sources for school and personal expenses. Those sources include more than the family contribution. Just over fifty percent of the students are employed either part-time or full-time so this variable could include earned income. It also could include student loans. Class status is divided into six categories: freshman, sophomore, junior, senior, graduate, and special.

### *Analyses*

Pearson Product Moment correlations and ordinary least squares regression analyses are used in this study. Correlations are done to ascertain whether multicollinearity is a problem in the regression analyses.

The regression analysis consists of four different equations. The first three equations use six sociodemographic variables (marital status, sex, employment status, place of residence, income, and class status) as indexes (insurance knowledge, credit card knowledge and overall financial management knowledge).

Student financial aid offices are directly and indirectly involved in providing student loans along with other types of financial support. Many of the students complete their education due to the availability of educational loans. Because of its importance, this knowledge area is subjected to a more detailed analysis. The regression equation with personal loan knowledge as the dependent variable is done in two steps. In the first step, like other equations, only sociodemographic variables are entered. In the second step, the knowledge indexes are entered.

Only the equations that had significant F-scores are discussed. Since the F-score for record keeping knowledge was not significant, a discussion of it has not been included.

### *Findings and Discussion*

#### *Correlation Matrix*

The correlation matrix (Table 3) includes all the independent and dependent variables in the model. Only the significant correlations are discussed here. Age of the student is highly correlated with both class status (.60) and marital status (.57). Recognizing that high correlations pose problems due to multicollinearity, age of the student is not used as a socioeconomic characteristic in the regression equations.

Multicollinearity occurs when there are high correlations among the independent variables in a regression equation. In regression, the objective is to predict the effect a certain independent variable has upon a dependent variable controlling for the effect of other independent variables. In this causal relationship, if two independent variables are highly correlated and nothing is done to correct this situation, it may lead to difficulties in the estimation of the regression statistics.



Table 3. Pearson Product Moment Correlation Matrix of Independent and Dependent Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. Class Status	-											
2. Employment Status	.22*	-										
3. Place of Residence	.47*	.10	-									
4. Sex	.07	-.01	.02	-								
5. Age	.60*	.17*	.35*	.04	-							
6. Income	.30*	.14*	.21*	.09	.36*	-						
7. Marital Status	.35*	.15*	.37*	.01	.57*	.41*	-					
8. Credit Card Knowledge	.30*	.30*	.14*	-.06	.14	.11	.13*	-				
9. Insurance Knowledge	.19*	.02	.11	.17*	.22*	.24*	.17*	.12*	-			
10. Personal Loan Knowledge	.24*	.08	.14*	.27*	.27*	.20*	.29*	.28*	.40*	-		
11. Overall Financial Management	.17*	.04	.07	-.09	.17*	.13	.25*	.36*	.26*	.42	-	
12. Record Keeping Knowledge	.08	.07	-.01	-.13	-.03	-.01	.07	.23*	.10	.11*	.32*	-

\*p < .05

Class status is positively related to each of the knowledge indexes. The highest correlation is found with the credit card knowledge index. Seniors and graduate students have higher credit card knowledge than the freshman. Those students who are employed have high knowledge about credit cards. Employment status is not significantly related to any other knowledge index. Place of residence is positively correlated with the credit card knowledge index and the personal loan knowledge index. Students who lived off-campus have a high level of knowledge about credit cards and personal loans.

There is a positive association between sex and two knowledge indexes. Males have higher levels of knowledge about insurance and personal loans than do females. The older students have higher levels of knowledge about insurance and personal loans than do younger students.

Marital status is significantly and positively related to all the knowledge indexes except the record keeping knowledge index. Married students have a higher level of knowledge about credit cards, insurance, personal loans, and overall financial management than do single students. The highest correlation coefficient between marital status and the knowledge indexes is found with the personal loan knowledge index.

If the student has a high level of knowledge about credit cards, the student also has a high level of knowledge about insurance, personal loans, overall financial management, and record keeping. Those students who have a high level of knowledge about insurance also have a high level of knowledge about personal loans and about overall financial management. Record keeping knowledge is positively correlated with knowledge about personal loans and overall financial management. None of the sociodemographic variables are significantly related to record keeping knowledge.

*Regression Analyses*

*Insurance, Credit Card, Overall Financial Management.* Sociodemographic variables explain approximately 10 percent of the variance in insurance knowledge (Table 4); the F-ratio for the entire model is significant. Sex and income level are significant variables in predicting knowledge about insurance. Male students have a higher knowledge level in the insurance area than do females; the students with higher incomes are more knowledgeable in the insurance index than are the students with low incomes. Students with high incomes have opportunities to own cars, and through their experiences they learn about topics like credit, personal loans, and insurance. It is also possible that students with high incomes live off-campus and have experiences with rental and liability insurance coverages. Perhaps more of them purchase life and medical insurance, as well.

Table 4. Regression Analysis of Insurance Knowledge on Sociodemographic Characteristics

	b	beta	t score
Marital Status	.213	.057	.91
Sex	.460	.143	2.66**
Employment Status	-.104	-.034	-.62
Place of residence	-.015	-.005	-.08
Income	.001	.176	2.95**
Class status	.137	.116	1.82
	Constant	1.4732	
	R2	.0977	
	df	6 & 316	
	F-ratio	5.705***	

\*p < .05, \*\*p < .01, \*\*\*p < .001

Table 5. Regression Analysis of Credit Card Knowledge on Sociodemographic Characteristics.

	b	beta	t score
Marital status	.043	.010	.17
Sex	-.286	-.079	-1.51
Employment status	.853	.246	4.62***
Place of residence	-.021	-.006	-.10
Income	.001	.004	.06
Class status	.332	.248	4.01***
	Constant	3.2985	
	R2	.1546	
	df	6 & 316	
	F-ratio	9.632***	

\*p < .05, \*\*p < .01, \*\*\*p < .001

Employment status and class status are significant determinants of credit card knowledge (Table 5). Sociodemographic variables explain approximately 16 percent of the variance in credit card knowledge. More upperclassmen are usually employed than are lowerclassmen. As a result, students who have employment are more likely to qualify for credit cards of their own. If this scenario is correct, then one can conclude that students increase their knowledge about credit management through their experiences.

The sociodemographic variables explain approximately 9 percent of the variance in overall financial management (Table 6). The F-ratio for the entire model is significant. Marital status and sex are significant variables in explaining the variance in overall financial management knowledge. A large proportion of married students are older, live in off-campus housing, have loans or credit cards, own automobiles, and are employed compared to single students. Married students are directly involved in various aspects of money management due to the demands of their lifestyle and that makes them more knowledgeable in various aspects of money management.

Table 6. Regression Analysis of Overall Financial Management Knowledge on Sociodemographic Characteristics

	b	beta	t score
Marital status	1.503	.228	3.62***
Sex	-.614	-.108	-2.00*
Employment status	-.117	-.022	-.39
Place of residence	-.384	-.070	-1.11
Income	.001	.031	.52
Class status	.257	.123	1.91
Constant		11.4493	
R2		.0864	
df		6 & 316	
F-ratio		4.981***	

\*p < .05, \*\*p < .01, \*\*\*p < .001

*Personal loan knowledge.* The regression equation with personal loan knowledge as the dependent variable is completed in two steps (Table 7). In the first step the sociodemographic variables are added. The variables explain approximately 17 percent of the variance in personal loan knowledge. Marital status, sex, and class status are the significant variables in predicting personal loan knowledge.

In step two, the other knowledge indexes are added. The sociodemographic variables and the knowledge indexes explain 37 percent of the variance in personal loan knowledge. Married students and males have more knowledge about personal loans than single students and females.

Class status is an intervening variable because it is significant in the first step but not in the second step. Marital status has a significant positive correlation with class status; sex does not have a significant correlation with class status. As a result, the effect of class status upon personal loan knowledge is an indirect one through marital status.

Three of the knowledge indexes are significant. If the student's knowledge levels about insurance, credit cards, and overall financial management are high, there is a high probability that the knowledge level about personal loans will be high.

Table 7. Regression Analysis of Personal Loan Knowledge on the Sociodemographic Characteristics and the Record Keeping, Insurance, Credit Card and Overall Financial Management Indexes.

				Step 1		
	b	beta	t score			
Marital status	1.189	.223	3.71***			
Sex	1.162	.253	4.90***			
Employment status	.045	.010	.20			
Place of residence	-.124	-.028	-.46			
Income	.001	.049	.86			
Class status	.238	.141	2.30*			
		Constant	7.6295			
		R2	.1731			
		df	6 & 316			
		F-ratio	11.022***			
				Step 2		
	b	beta	t score			
Marital status	.755	.141	2.63**			
Sex	1.193	.260	5.58***			
Employment status	-.031	-.007	-.15			
Place of residence	-.028	-.006	-.12			
Income	-.001	-.003	-.06			
Class status	.077	.045	.82			
Record keeping knowledge	-.034	-.019	-.39			
Insurance knowledge	.335	.234	4.81***			
Credit card knowledge	.169	.133	2.56*			
Overall financial management knowledge	.241	.298	5.66***			
		Constant	3.9814			
		R2	.3724			
		df	6 & 316			
		F-ratio	18.514***			

\*p < .05, \*\*p < .01, \*\*\*p < .001

#### *Conclusions and Implications*

This study investigates the knowledge of college students at one university in five money management areas including credit cards, insurance, record keeping, personal loans, and overall financial management. Although care must be taken not to generalize the results beyond this university, the findings indicate the need for education in specific money management areas. Students had low levels of knowledge in insurance, credit cards, and overall financial management areas.

These are the topics that would be most appropriate for inclusion in money management lectures, workshops and seminars.

The college students often know general facts about money management topics, but they lack knowledge in specifics. For example, they know credit cards can be used as identification and they know the various costs involved in using credit cards. However, they do not know what to do if there are any billing errors, and how different credit cards have different costs.

The results help to identify student populations that would benefit most from educational programs about money management. Students' sex, marital status and age are significant in explaining the differences in level of knowledge in several areas. Increasing age and marriage provide the impetus or the necessity for learning more about money management. Males know more about insurance and personal loans, but females know more about overall financial management.

Since marriage seems to provide the stimulus for learning more about money management, educators might try to find a way to reach students who plan to marry in the near future. Educational programs for this group could enable educators to take advantage of a teachable moment.

The training responsibilities of students could be shared between financial aid offices of universities and departments that teach financial management courses. Students look toward financial aid offices as sources of financial aid; those same offices have a captive audience for advertising of workshops, seminars, or classes. When the students obtain the financial aid forms or checks, an announcement of an upcoming event could be included.

Some departments within the university have core courses that all students must take. Financial aid offices could negotiate to have at least one personal financial management course to be a part of that core. Or, if departments have no core courses then perhaps the financial aid offices could investigate a way to introduce freshman advisers to financial management courses and have them encourage students to take the courses.

The results can also be beneficial to financial counselors who work with students on a one-to-one basis at various stages of a student's study program. If counselors know the type of student that needs help and areas in which such a student lacks knowledge, they could adjust the counseling experience accordingly. Handouts on money management topics where students tend to have low levels of knowledge could be made available.

Loan officers of various depository institutions work closely with student financial aid offices. They could also use these results to develop educational materials specially designed for college students. These materials could be made available at the time students apply for loans or could be periodically included with bank statements.

More research examining the financial knowledge of students attending other universities is needed. However, beyond information on knowledge, data is needed on the financial management practices and attitudes of students.

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