KNOWLEDGE, ATTITUDES, AND PRACTICES
IN THE USE OF CREDIT

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ABSTRACT

The purpose of the study is to investigate the relationships among knowledge of credit, attitude toward credit, and credit practices. The data were collected in Marshalltown, Iowa, during the winter of 1982 through 201 personal interviews with money managers. The analyses include correlation and path analysis using LISREL V.

There is a significant relationship between knowledge of credit and attitude toward credit. There is a significant path both from knowledge of credit to credit practices and from attitude toward credit to credit practices. Education of the money manager, household size, and household income were exogenous variables that were significantly related to knowledge of credit. Household income is the only exogenous variable that is significant for attitude toward credit. There is an indirect effect of education upon both attitude toward credit and credit practices.

The purpose of the study is to investigate the relationships among knowledge of credit, attitude toward credit, and credit practices. Previous studies have investigated the relationship between knowledge of credit and credit practices and/or the relationship of attitude toward credit and credit practices. However, no studies have included all three variables and analyzed different relationships among the three.

Garcia (9) states that the direction for future research about credit cards is to examine the determinants and implications of credit card use, not in isolation but as part of a more general theory of consumer behavior. This study attempts to look at credit card usage in a more general framework than has been done in past studies.
Credit Practices

Most studies involving credit have been primarily descriptive indicating who uses credit, what items are purchased with credit, how frequently credit is used and consumer's knowledge of credit costs (3, 8, 19, 29, 30, 32). Mueller (27) investigated the relationship between money management practices including credit and the family debt-to-income ratio.

Household size was positively related to installment credit use in studies by Ryan and Maynes (34), Dunkalberg and Stafford (6) and Richards (31). Several studies have found a negative relationship between age of the household head and credit use or financial management (1, 11, 15, 18, 19, 24, 25, 27, 33, 34, 35, 37). Younger households have more demands on resources and less experience managing money.

Numerous studies have indicated a positive relationship between education and financial management practices or credit use (1, 5, 10, 11, 13, 18, 19, 20, 27, 31, 32). Income appears also to be related to credit use. The lower- and middle-income families tend to have the most experience with loans and current credit card use (1, 19, 25, 34, 35).

The greatest proportion of consumers who are in deep debt trouble are unmarried, the poor, the uneducated, those under 25 or 65 and older, and young families with young children (14, 22, 25, 26, 34, 37).
Credit Knowledge

A large proportion of consumers do not appear to have an understanding of the credit market. Education and income are the key determinants of knowledge and understanding of consumer credit (2, 7, 13, 22, 24, 28, 37). It appears that high income and high educated consumers are more likely to know about credit than low income and low educated consumers.

There also seems to be some relationship between knowledge and current credit use. Those consumers with the most knowledge about credit are the larger users of credit (5, 19, 35).

Attitude Toward Credit

The studies that include attitude toward credit as a variable usually measure it in a dichotomous form - favorable or not favorable. People with more favorable attitudes toward installment debt use more installment credit (1, 5, 7, 12, 17, 24) Upper income groups hold more favorable attitudes toward credit than lower income groups (36, 38). Younger consumers also have more positive attitudes toward credit use (24). Mandell (24) also found that the more educated approve of the use of credit more than those with less education.

Mueller (27) looked at attitude in terms of the amount of debt a consumer is willing to owe. Households who are willing to owe larger amounts of money on credit cards have a higher level of debt.
SAMPLING PROCEDURES

The data were collected in Marshalltown, Iowa, during the winter of 1982 through 201 personal interviews. Completion of the interviews required an average of 45 minutes, with a range of 15 minutes to 90 minutes.

The sample was an area sample of housing units in Marshalltown. The sample was drawn by the Iowa State University Statistical Laboratory. According to this procedure, any household in existence at the time of the study has a known chance of being in the sample regardless of whether or not it was included in the census numbers or a city directory by virtue of its being associated with some land.

The unit of analysis is the household. The final sample included 198 cases. The information was obtained from the money manager of the household. Interviewers were instructed to ascertain which person in the household was the money manager by asking "who manages the money in the household?" and to conduct the interview with that individual. If the respondents were married and indicated money management responsibilities were shared then both were interviewed, and the person answering the majority of the questions in the schedule was considered to be the money manager.

HYPOTHESES

Figure 1 illustrates the analytical model that is proposed for this study. It also indicates the direction of the relationships that are hypothesized. A positive relationship is expected between education of the money manager, household size, and household income and
knowledge of credit. A negative relationship is predicted between age of the money manager and knowledge of credit.

The higher educated respondents are expected to have a more positive attitude toward credit (feel comfortable owing more). Younger money managers, larger households, and those with higher incomes are expected to have a more positive attitude toward credit. People with more knowledge about credit will have a more positive attitude toward credit. It is expected that money managers who are younger and have more years of education to use credit to a greater extent. It is also expected that larger size households and households with lower income use more credit (more frequently and to a greater extent). It is hypothesized that people with more knowledge about credit and a more positive attitude toward credit will use more credit.

VARIABLES

Figure 2 presents the proposed model in LISREL form. It includes both the structural and measurement models. Following standard practices, latent constructs are diagrammed as ovals and observed measures as rectangles.

There are seven knowledge of credit questions that are randomly assigned to the two indicators of knowledge of credit. The questions in the first indicator include the following topics: consolidation loans, amount of income used for credit, credit rating, and the annual percentage rate on retail store revolving charge accounts. Credit card interest plans, federal legislation, and interest compounding are the topics for the second indicator.
The knowledge questions are dichotomous (0 represents answers that were not correct and a 1 represents answers that were correct). As a result, the first knowledge indicator ranges from 0 to 4 and the range of the second indicator is from 0 to 3. The mean of the first indicator is 2.9; the mean of the second indicator is 1.7.

The attitude toward credit question includes how much the household feels comfortable owing on all credit cards at one time. The range for the question is from 0 to $5,000; the median is $100 and the mean is $346.

The variable credit practices also has two questions that are used as two indicators of the concept. The first indicator is the number of credit cards that household members use. The range for this question is from 0 to 24; the mean and mode are 2. The second indicator is the frequency with which the household pays finance charges on purchases made with credit cards. The scale for this question goes from never to always. Both the mean and median fall within the category of "sometimes".

The four exogenous variables in the model are education of the money manager, age of the money manager, household size, and household income. Education ranges from 4 to 20 years of education; the mean is 12.8 years. The age of the money manager ranges from 19 to 87. The mean age is 45.4 years old. The mean of household size is 2.6. The range of household size is from 1 to 8.

To ascertain the net income of the household, the money manager was asked to indicate the approximate net dollar income received by all members of the household in 1982. The figure includes the following sources: wages, salaries, investment income, business or
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FINDINGS

Correlations

Table 1 indicates the Pearson Product Moment Correlations between the variables in the model. Only the significant correlations will be discussed here.

The two knowledge of credit indicators are positively correlated (.28). The two credit practices indicators have a correlation of .32.

When the money manager has a high score on the first indicator of knowledge, the household feels comfortable owing more on credit cards at one time. With a high score on the first indicator of knowledge, the household also has a greater number of credit cards it uses, the household size is larger, the household income is larger, and the education of the money manager is higher.

When the score for the second indicator of knowledge is high, the household uses more credit cards, pays finance charge payments more frequently, has a higher household income, and the money manager has a higher education. However, the older the money manager is the lower the money manager's score on the second indicator of knowledge.

As the amount the household feels comfortable owing on all credit cards at one time increases, the number of credit cards used increases, the frequency of finance charges paid increases, the household income increases, and the education of the money manager is higher. As the number of credit cards used increases so does the frequency of paying finance charges.
As the education of the money manager increases, the number of credit cards used also increases. Younger money managers and larger households more often pay finance charges on credit cards. The older money managers are less educated and have smaller households. The higher the household income, the larger the household size.

Path Analysis

The correlation matrix from Table 1 is the input matrix to the LISREL V program. Each correlation coefficient is based on 198 cases. On the basis of Pearson correlations, Figure 2 presents the standardized maximum likelihood parameter estimates for the proposed model. This initial iteration produced a model with $\chi^2 = 35.82$, df=11, $p=0.000$. The value of $\chi^2$ relative to the degrees of freedom, indicates that the proposed model did not fit the data well. The difference between the observed correlation matrix and that resulting from the hypothesized model was statistically significant.

The accepted procedure in such a situation is to iteratively relax constrained parameters which cause stress in the fit. This procedure is effectively the same as fitting a less restrictive model. As each constraint is relaxed, the $\chi^2$ associated with the model will decrease. At the same time, the degrees of freedom will decrease. Figure 3, then, presents the standardized maximum likelihood parameter estimates for the reduced model. The estimates in this reduced model are the ones which will be discussed here.

Age of the money manager was eliminated completely from the reduced model because there were no significant paths to any of the endogenous variables in the fully recursive model. One of the
reasons that age was not significant in this study may be that 45 percent of the sample were between 26 and 45 years old. This fact decreases the variance of the variable.

Three of the exogenous variables are significantly related to knowledge of credit. Those variables are education of the money manager, household size, and household income. Those variables predict 27.7 percent of the variance of knowledge of credit. The lambda value of the first indicator of knowledge is 1 and the lambda value for the other indicator is 0.86. This fact means that the two indicators of knowledge of credit have a similar impact in explaining knowledge of credit.

One of the features of a LISREL model is that it can separate the true score variance from the error variance. The true score variance is the proportion of variance explained by the observed variable. The error variance is the sum of the specific (unique) variance not accounted for by the latent concept plus random variance due to measurement error.

The true score variance for the first indicator of knowledge is 0.314, and it is 0.232 for the second indicator of knowledge of credit. The error variance for the first indicator of knowledge is 0.686; it is 0.768 for the second indicator of knowledge of credit.

Household income is the only exogenous variable that is significant for attitude toward credit. There is a significant relationship between knowledge of credit and attitude toward credit. The beta weight is 0.466. The $R^2$ for attitude toward credit is .117. Only one indicator is used for attitude. Because there is only one indicator of the concept, the true score variance is 1.0 and the error
variance is equal to 0.

Two indicators are used to measure credit practices. The frequency of payment of finance charges has a value of 1 and the number of credit cards used has a value of 1.012. These results indicate that the number of credit cards used by the household explains slightly more about credit practices than the frequency of payment of finance charges. The true score variance for the frequency of finance charge payments is 0.314 and for the number of credit cards used, it is 0.322. The error variance for the former indicator is 0.686, and for the latter indicator, it is 0.678.

There is a significant path both from knowledge of credit to credit practices and from attitude toward credit to credit practices. The $R^2$ for credit practices is 0.656.

The total coefficient of determination for the structural equations is like an index of the amount of variation explained in the total model. It is like a cumulative or overall $R^2$. The total coefficient of determination for the structural equations in this model is 0.294.

Figure 3 demonstrates only the direct effects of the antecedent variables on the dependent variable in the path model. The decomposition of the total effects into the direct and indirect effects indicated that although many of the exogenous variables did not have direct effects upon attitude toward credit or credit practices, there are indirect effects.

There is an indirect effect of education of the money manager (0.102), household size (0.058), and household income (0.042) upon attitude toward credit that is mediated through knowledge of credit.
There is also an indirect effect of education of the money manager (0.170) and household size (0.096) upon credit practices that is mediated through knowledge of credit.

Income (0.088) indirectly affects credit practices through both knowledge of credit and attitude toward credit. Knowledge of credit not only has a direct effect upon credit practices (0.718) but knowledge of credit (0.056) has an indirect effect upon credit practices that is mediated through attitude toward credit.

*Goodness-of-fit Measures*

Having examined the parameter estimates, one needs to assess the extent to which the proposed model fits the data. Several measures of goodness-of-fit were used (Table 2).

According to the likelihood ratio, neither the fully recursive nor the reduced model fit the data well. With 11 degrees of freedom, the probability of the fully recursive model is zero and with 14 degrees of freedom, the probability of the reduced model is slightly above zero (0.0620). Given that the likelihood ratio test is very sensitive to sample size, a more appropriate fit index would be one that is not affected by the sample size.

The relative likelihood ratio, the ratio between $\chi^2$ and its degrees of freedom (i.e., $\chi^2/\text{df}$), partially offsets the impact of sample size. Ratios in the neighborhood of 2 to 1 or 3 to 1 are considered indicative of an acceptable fit (4). Applying this criterion, the fully recursive model has a ratio of 3.256 indicating a better fit is possible, but the reduced model has a ratio of 1.637, indicating an adequate fit.
The goodness-of-fit of the models was also evaluated by applying Hoelter's critical N or $CN$ (16). This measure is based on determining the sample size required to accept statistically a model at a certain specified level of significance. When only one group is involved in the analysis, a $CN$ of 200 or more is indicative of an adequate fit. The $CN$ for the fully recursive model is 126.958 which indicates the model does not fit the data well. However, the $CN$ for the reduced model is 221.081 which is more than adequate.

Using the results of these goodness-of-fit measures, it is clear that the reduced model suggests a successful fit between the proposed causal structure and the observed correlation matrix.

**SUMMARY AND CONCLUSIONS**

The findings of this study indicate a significant relationship between knowledge of credit and attitude toward credit, between knowledge of credit and credit practices, and between attitude toward credit and credit practices. Four exogenous variables were initially included in the model: education of the money manager, age of the money manager, household size, and household income.

Since the three endogenous variables had not been investigated in one model before, a fully recursive model was first analyzed. After several constraints were relaxed and after using several goodness-of-fit measures, it was determined that the reduced model fit the data well. Age of the money manager did not have a significant path to any of the endogenous variables in the fully recursive model, so it was dropped from the reduced model.

Education of the money manager, household size, and household
income had significant paths to knowledge of credit. Household income also had a significant path to attitude toward credit. None of the exogenous variables were significantly related to credit practices. There were, however, some indirect effects upon attitude toward credit and credit practices.

More research is needed that investigates the causal relationships among knowledge of credit, attitude toward credit, and credit practices. Different indicators might be utilized for each of the endogenous variables to see if similar results are obtained.

Age has been a significant indicator in several past credit studies although it was not significant in the model in this study. Age should be included in other path models to determine if this study's finding can be replicated.

Findings of this study might be of interest to educators and financial counselors. These results can be helpful in identifying the target groups in the population and the topics to be included in money management courses. When dealing with the topic of consumer credit, courses should not just concentrate on practices but also on knowledge and attitudes related to credit. The results of this study provide evidence that knowledge about credit and attitudes toward credit both have an impact upon the credit problem.
REFERENCES


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Table 1: Pearson Product-Moment Correlation Matrix
Table 2. Measures of Fit

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Figure 1: A path diagram for the proposed analytical model.