

associations were found between demographics and attitudes with beliefs held constant than when only simple associations between beliefs and demographics were tested.

Age was the single factor most commonly having a significant relationship with attitudes. Whether individuals believed everyone should eat less sweets or diseases can be linked to food intake appeared to have little effect on association between age and attitudes. By contrast, attitudes could be linked to education, income, and race only when beliefs were controlled for.

Source of Influence and Behaviors. The hypothesis predicting those whose primary source of influence was a professional or friend/relative would be more likely to have decreased sugar intake was not supported. Although doctors, dentists, nurses, and extension workers were the most frequently mentioned primary sources of information for making any health or diet related change, their influence was not significantly different from other sources with respect to initiating changes in consumption of soft drinks and sugary foods. Decreased soft drink consumption was most common among those reporting friends or relatives (45%) and groups or classes (44%) as their primary source of influence. Decrease in sugary food consumption was most common among respondents reporting groups or classes (64%) and written material other than newspapers (54%) as primary source of influence. However, results did indicate support for the hypothesis concerning number of influences. Those respondents listing two or more influences were more likely to have made changes in their consumption of soft drinks and sugary foods.

DISCUSSION

Findings of this investigation generally supported the relationships among demographic variables, beliefs, attitudes, and behaviors which were postulated using the Fishbein model. Changes in sugar-related consumption were found to be consistent with behavioral beliefs and attitudes. Effects of demographic variables on behavioral attitudes appeared to be mediated by beliefs related to specific behaviors. Some support concerning the effects of subjective norms on behavior was also provided.

The belief that everyone should eat less sweets was found to be salient to attitudes regarding sugary food consumption and caloric intake but not soft drink consumption when these were not linked to relevant behaviors. Belief in a link between certain foods and disease was only salient to attitude toward sugary food consumption when not linked to specific behaviors. It is possible some respondents did not classify soft drinks as sweet or sugary foods, especially since no distinction was made between regular and artificially sweetened soft drinks in the attitude question. It may also be that changes in soft drink consumption were considered less significant by respondents. While decrease in soft drink consumption was less prevalent than decrease in sugary foods,

reasons for both types of behavioral change followed the same pattern, emphasizing promotion of health or prevention of disease, reduction in sugar intake, loss of weight, and reduction of intake of artificial substances. Results linking behavioral beliefs and attitudes were generally consistent with findings by Schwartz [21], and Carruth and Anderson [2] relating nutritional knowledge to attitudes.

Results concerning associations among attitudes and sugar-related consumption behaviors are consistent with those of a number of studies in which attitudes were found to be mediators of the food choice process [2, 10, 12, 22]. Controlling for behavioral beliefs strengthened the attitude-behavior association; this result substantiated evidence concerning the separate links made between beliefs and attitudes and attitudes and behaviors.

From results concerning the belief-attitude and attitude-behavior links one might conclude the latter is the stronger. It is not clear that we can safely make this interpretation because of the measurement problems inherent in the data set; the belief statements used represented general beliefs rather than Fishbein's variable beliefs that behaviors would lead to certain outcomes.

According to the Fishbein model demographic variables are indirectly linked to behaviors through beliefs and attitudes. Results indicating younger, White respondents with higher levels of education and income are more likely to have beliefs and attitudes consistent with improved dietary practices are generally in agreement with those of other studies [3, 5, 9, 12, 24, 29]. It seems clear that effects of education, income, and race on attitudes are mediated by salient beliefs. It is less clear the effects of age are thus mediated; differential age cohort effects may be influencing these results.

As in another study [4], professionals, friends or relatives were the most frequently cited source of influence responsible for initiating dietary change of any type. However, their influence was not significantly different from that of other sources in relation to change in sugar intake. One explanation of this result is the hypothesis was incorrect; professionals and friends or relatives are not the appropriate referents for sugar-related behavior. Another explanation involves limitations of the data with respect to measuring subjective norms. The data set did not include information about what others expect the respondent to do but did indicate what source of information the respondent said influenced any dietary changes, not just those related to sugar consumption. Within the context of the Fishbein model, respondents listing more than two sources of information might be viewed as having stronger motivation to comply with referent others causing the subjective norm to be weighted more heavily in the decision process. Other interpretations are that respondents listing more than two influences are more aware of the sources of nutritional information available to them or more concerned about nutrition and health.

According to the Fishbein model, changes in belief precede changes in attitude and change in attitude precede changes in behavior. In this survey respondents were asked to report behavioral changes made during the preceding three years, while attitudes and beliefs were measured as of the time of interview. Under these circumstances it is difficult to attribute causality.

CONCLUSIONS AND IMPLICATIONS

Unlike other investigations into relationships among demographic characteristics, beliefs, attitudes, and dietary behaviors, this study used a theoretical model to generate hypotheses regarding relationships among these variables. The FBI model was chosen because of its proven success in predicting behaviors and its applicability to the problem. Although data did not conform exactly to the components specified in the model, results indicate the model's usefulness in explaining food consumption behavior. Extending use of the model to explanation of consumption in other food groups would thus seem feasible.

An improved understanding of the relationships among consumer characteristics, beliefs, attitudes, and behaviors with regard to food consumption has practical implications for the development and design of nutrition education and food marketing programs. Because beliefs influence behaviors by way of attitudes concerning those behaviors, nutrition education attempts aimed solely at providing nutrition knowledge (a set of generalized beliefs) may not be as effective as those programs which seek to change beliefs concerning behavioral outcomes and evaluation of outcomes. Furthermore, results indicate that persons with certain demographic characteristics may be more likely to hold attitudes and beliefs inconsistent with positive dietary changes. Nutrition information campaigns should continue to target groups of individuals with those traits--i.e., who are older, less educated, non-white, and have lower incomes. Multiple sources of influence were found to be associated with dietary changes. This also has implications for nutrition information and education efforts; providing many sources of nutritional information to the public will be useful in reinforcing specific messages regarding dietary guidelines.

Food marketers may also find these results useful for developing a better understanding of the role social and psychological variables play in the food choice process. In particular, results of this investigation point out the importance of appropriately defining and measuring beliefs, both behavioral and normative, salient to the behavior of interest.

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CONSUMER RESPONSE TO CHANGING FINANCIAL PRACTICES: KNOWLEDGE OF AND INFORMATION SOURCES USED IN SELECTION OF THREE RECENT SAVINGS PRODUCTS.

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ABSTRACT

Adoptors of negotiable order of withdrawal accounts (NOW's), All Saver Certificates (ASC's) and Individual Retirement Accounts (IRA's) tended to be consumers 45 years of age or over holding white collar occupations. They did not differ significantly from non-adoptors by either income or education. Consumers were generally aware of the three innovations and most believed they had a good understanding of these products. Respondents relied on financial institution personnel for most of the information used in making savings decisions.

The first few years of the 1980's have been a period of accelerating change in financial products in the United States. Until recently, individual consumers' were slower than business to respond to the forces motivating changes in financial practices. In part this was because they lacked the necessary financial sophistication to make such investments [2]. As new institutions and instruments have emerged to compete for the savings of individual consumers family economists have recognized a need to know how consumers respond to these changes [3]. This study undertakes to examine consumer response to three of these new offerings.

Three major financial products were introduced in the early 1980's that give us a basis for examining consumer response to the changing financial environment. The Monetary Control Act of 1980 authorized nationwide negotiable order of withdrawal accounts (NOW's) beginning in January 1981. These accounts allow individuals to earn 5 1/4 percent interest on checkable deposits at commercial banks, thrift institutions and share draft accounts at credit unions. These interest-bearing checking deposits now account for almost one-fifth of total transaction balances [2].

The Economic Recovery Tax Act of 1981 granted financial institutions the power to issue tax-exempt All Saver's Certificates (ASC's) beginning October 1, 1981 and ending December 31, 1982. The purpose of these certificates was two-fold. First, they were intended to attract new retail money back into banks and savings and loans (S&L's). Second, they were expected to attract new money at a cost below prevailing market rates. ASC's paid 70 percent of the yield of 52 week treasury bills. The first \$1,000 of interest earned by individuals or \$2,000 for people filing joint income tax returns, was tax free.

stated percentage yield on the initial certificates issued the first week of October 1981 was 12.61 percent [5]. The after-tax yield for a person in the 50 percent tax bracket was thus over 25 percent. In comparison the 7 day average yield for money market mutual funds was close to 16 percent [6].

The number of wage earners who could open an Individual Retirement Account (IRA) was dramatically increased by the Economic Recovery Tax Act of 1981. After January 1, 1982 any person who was working and below the age of 70 1/2 could open an IRA. Prior to this date only people who did not participate in a government approved retirement plan were eligible for an IRA. The annual amount an individual could put into an IRA was also increased from \$1,500 to \$2,000 [1,2].

The purpose of this study was to examine the following questions: 1) who opened these new accounts, 2) why did they open the accounts, 3) where did they open the accounts, and 4) where did they obtain the funds for opening the accounts. Finally the study explored consumer knowledge of these new financial instruments and sought to determine the sources of information used by consumers in making decisions on the utilization of these savings instruments.

METHODOLOGY

Pre-tested questionnaires were mailed to a proportionate stratified sample of the Milwaukee SMSA's households at three different time periods. Data for the consumer utilization of NOW accounts were obtained the third week of March 1981, three months after the accounts were legally available and about four months after the SMSA's financial institutions had started promoting these accounts. Information on the consumer response to the introduction of ASC's were collected the first week of November 1981, a month after the certificates were available and about 10 weeks after they were first promoted. The questionnaire to obtain data on response to IRA's was mailed mid-March, 1982.

For all three studies about 750 questionnaires were mailed out. The response rates for the three surveys were 51 percent for NOW accounts, 42 percent for the IRA study and 38 percent for the ASC study. Not all of the respondents were eligible for all of the products. For example, in the ASC study respondents who did not have savings and checking accounts were dropped and in the IRA study non-employed respondents were

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deleted. Thus the usable responses were 492 for NOW accounts, 244 for ASC's and 232 for IRA's. Respondents in all three surveys had higher incomes, more education, and higher status occupations than did the general population of the studied metropolitan area. One would expect respondents to more likely have these characteristics. This response bias should not impair the usability of the data since the accounts generally require higher incomes or higher balances.

RESULTS AND DISCUSSION

Demographic Characteristics

NOW Account Adoptors. Male and female NOW account adoptors were much more likely to be retired than non-adoptors. For both adoptors and non-adoptors, about equal percentages were in white collar occupations (Table 1). However, male non-adoptors were much more likely to be in blue collar occupations. Adoptors were more likely to

Table 1. Demographic Comparison of Holders and Non-holders of NOW Accounts.

Occupation	Male		Female	
	Hold. Non-Hold.	Hold. Non-Hold.	Hold. Non-Hold.	Hold. Non-Hold.
Semi-skilled/ skilled	15%	30%	11%	4%
Sales/ clerical	2	6	22	24
Manager/ professional	53	51	18	28
Retired	28	10	24	7
Student/ unemployed	2	4	1	34
Homemaker	0	0	23	34
	100	100	100	100
	$X^2=23.4$	Sig.=.000	$X^2=28.5$	Sig.=.000

Age	Male Hold.	Male Non-Hold.	Female Hold.	Female Non-Hold.
18-24	1	10	4	9
25-34	13	23	17	23
35-44	16	21	12	24
45-54	21	24	18	22
55-64	20	15	24	15
65 and over	30	8	25	7
	101	101	100	100
	$X^2=35.8$	Sig.=.000	$X^2=30.9$	Sig.=.000

Education	Male Hold.	Male Non-Hold.	Female Hold.	Female Non-Hold.
High school or less	26	34	61	50
Some college	29	33	15	29
College grad.	23	19	13	13
Post-grad.	23	14	11	8
	101	100	100	100
	$X^2=5.21$	Sig.=.156	$X^2=7.81$	Sig.=.05

Household Income	Hold. Non-holders	Non-holders
Less than \$20,000	29	30
\$20,000-\$34,999	37	47
\$35,000 and over	34	24
	100	101
	$X^2=4.49$	Sig.=.11

† Due to rounding totals may not equal 100.

be 65 years of age or over. Adoptors also tended to have higher levels of education. A near majority (46 percent) were college graduates, while two-thirds of non-adoptors had not completed college. Middle-income households were more likely to be non-adoptors, while upper income householders were more likely to have NOW accounts.

ASC Adoptors. The primary distinguishing characteristics of ASC holders were their middle age and white collar occupations. Seventy percent of the ASC holders were employed in white collar occupations (Table 2). A majority of the ASC purchasers were middle aged. Twenty-six percent of ASC holders versus 14 percent of non-holders had a post-graduate degree. However, for 41 percent of the holders the highest level of education was high school. The education, occupation and age of ASC holders were reflected in their incomes. Nearly one-third of the holders had incomes over \$35,000 a year, while another third had incomes between \$25,000 and \$35,000. However, the reader should note that nearly 30 percent of ASC buyers also had incomes between \$15,000 and \$25,000. In fact, income differences between holders and non-holders were not statistically significant (.28 level).

Table 2. Demographic Comparison of Holders and Non-holders of ASCs.

Occupation	Male		Female	
	Hold. Non-hold.	Hold. Non-hold.	Hold. Non-hold.	Hold. Non-hold.
Blue collar	19%	28%	22%	27%
White collar	70	48	25	28
Homemaker	---	---	37	30
Other	11	24	16	15
	100	100	100	100
	$X^2=4.9$	Sig.=.08	$X^2=.91$	Sig.=.82

Age	Male Hold.	Male Non-Hold.	Female Hold.	Female Non-Hold.
18-44	35	48	34	52
45-64	57	34	47	32
65 and over	7	18	19	16
	100	100	100	100
	$X^2=6.1$	Sig.=.05	$X^2=3.1$	Sig.=.17

Education	Male Hold.	Male Non-Hold.	Female Hold.	Female Non-Hold.
High school or less	41	36	48	47
College grad/ some college	33	50	30	42
Post grad.	26	14	16	11
	100	100	100	100
	$X^2=3.6$	Sig.=.17	$X^2=.97$	Sig.=.62

Income	Hold. Non-holders	Non-holders
Under \$15,000	9	23
\$15,000-\$24,999	29	29
\$25,000-\$34,999	31	27
\$35,000-\$49,999	17	14
\$50,000 and over	14	7
	100	100
	$X^2=5.1$	Sig.=.28

† Other= retired, unemployed, and students.

IRA Adoptors. The respondent most likely to have opened an IRA was in a white collar occupation with a college degree making over \$50,000 per year and about 10 years away from retirement (Table 3). This profile is hardly surprising since an IRA is a tax deferred retirement plan. However, as with most generalizations, this profile is incomplete. Some blue collar respondents (16 percent) did open retirement accounts. Also, nearly the same percent of high school graduates as college graduates were investing in IRA's (21 versus 25 percent). Interest in IRA's was age sensitive, with the older the respondent, the more likely he/she had an IRA. However, the 35 to 44 year old group was nearly as likely as the 45 to 54 year olds to have this account (22 versus 28 percent). Finally, the more income the household had the more likely it had an IRA. But, the \$15 to \$25 thousand income group was nearly as likely to have opened an IRA (23 percent) as the \$25 to \$35 thousand group (19 percent).

Table 3. Demographic Comparison of Holders and Non-holders of IRAs.

Occupation	Male		Female	
	Holder	Non-hold.	Holder	Non-hold.
Blue collar	16%	29%	5%	9%
White collar	76	60	50	52
Homemaker	--	--	36	32
Other	<u>8</u>	<u>11</u>	<u>9</u>	<u>7</u>
	100	100	100	100
<u>Age</u>				
25-34	10%	37%	13%	42%
35-44	16	19	22	23
45-54	29	24	22	21
55-64	39	13	36	10
65 and over	<u>6</u>	<u>7</u>	<u>7</u>	<u>4</u>
	100	100	100	100
<u>Education</u>				
High school or less	34%	33%	48%	53%
College grad/some college	54	54	43	39
Post grad.	<u>12</u>	<u>13</u>	<u>9</u>	<u>8</u>
	100	100	100	100
<u>Income</u>				
Less than \$15,000		4%		15%
15,000-24,999		18		18
25,000-34,999		25		33
35,000-49,999		31		23
50,000 and over		<u>22</u>		<u>11</u>
		100		100

Reasons for Opening and Not Opening Accounts

NOW's. Earning interest on checking accounts was the primary reason for opening a NOW account (82 percent). The ability to switch to an S&L, to consolidate accounts at one institution, to have quick access to savings or to combine savings and checking accounts were all very minor reasons for adopting the NOW accounts (Table 4).

As important as it is to know why people opened the accounts, it is probably just as valuable to know why people did not open the accounts. The

pricing of the accounts and inertia were of equal importance in explaining why people did not open NOW accounts. Over half of the respondents who did not open the accounts thought the minimum balances were too high and were satisfied with their current checking accounts (Table 4). The increasing sophistication of financial service consumers may be demonstrated by the fact one-third of the respondents also believed that they could earn a better return on their dollars in other savings or investments.

ASC's. The primary reasons respondents did not purchase an ASC were due to the characteristics of the certificate and not to a lack of understanding of its benefits. Thirty-one percent thought the ASC required too much money while 29 percent said the maturity was too long (Table 4). However, nearly one-quarter of the people who did not open an ASC either said they lacked enough information or found it difficult to compute the yield. Relatively few respondents were totally uninformed however, since only 8 percent chose the general response, "the requirements are too confusing."

Avoidance of paying taxes was the primary reason given by 86 percent of the 36 respondents that opened an ASC (Table 4). The higher after-tax yield was also an important reason.

IRA's. Ninety-one percent of the IRA holders opened this account to defer taxes (Table 4). The second most important reason expressed by 70 percent of the adoptors was the fear that social security would be inadequate.

The majority (55 percent) of the respondents did not open IRA's because they already had a pension plan. The other leading reason (35 percent) for not opening an IRA was the length of time the deposits would be tied up (Table 4). Even though banks and S&L's offered fixed and variable interest rate IRA's with the variable rates tied to different indices, few people said confusion in computing yield was a reason they avoided IRA's. However, there is a potential for better communication.

Eighteen percent of the respondents said they needed more information before they opened the account. Another 17 percent said the balance requirements were too high indicating a likely misunderstanding of the \$50 minimum balance. Finally, since 14 percent of the respondents said other investments give a better return, it appears some people may not understand the advantage of earning interest on dollars that would be paid in taxes if IRA's were not used as a tax shield.

Place Where Accounts Were Opened

NOW's. Banks where people had their original checking accounts captured two-thirds of the NOW accounts. S&L's were able to gain 23 percent of the interest-bearing checking accounts, while credit unions and banks where the NOW account holder did not have a previous checking relationship accounted for the remaining 11 percent.

Table 4. Reasons Why Respondent Did or Did Not Open Account.

<u>NOW</u>	
A. Reasons Why the Account Was Opened (n=129)	Percent Mentioned ¹
Earn interest on checking	82%
Consolidate all accounts	14
Combine checking and savings	12
Quick access to savings	12
Prefer dealing with an S&L	5
Other	12
B. Reasons Why the Account Was Not Opened (n=319)	
Minimum balances too high	59%
Satisfied with current checking	57
Earn a better return in other savings/investments	34
Requirements too confusing	8
Other	14
<u>ASC</u>	
A. Reasons Why the Account Was Opened (n=36)	
Avoid paying taxes	86%
Higher yield	54
Safety	0
Provide money for housing	14
B. Reasons Why the Account Was Not Opened (n=208)	
Require too much money	31%
Maturity is too long	29
Not enough information	24
After tax return yield too hard to compute	22
Better return on six month money market certificate	15
Other saving/investments give a better return	15
Requirements are confusing	8
<u>IRA</u>	
A. Reasons Why the Account Was Opened (n=53)	
Tax deferral	91%
Social security will be inadequate	70
Company pension plan not enough	38
Social security will be unavailable	25
Company pension plan unavailable	25
Other	4
B. Reasons Why the Account Was Not Opened (n=179)	
Existing employer pension plan	55%
Money is tied up too long	35
Deposit requirements too high	20
Not enough information	18
Other savings/investments give a better return	14
Plan to open in future	13
Requirements are confusing	4
Interest rate computation is confusing	4
Social security adequate	3

¹Multiple answers were possible therefore totals do not equal 100 percent.

ASC's. S&L's were successful in capturing a majority (61 percent) of the certificate holders while banks had a penetration of 28 percent. The remaining 11 percent of the respondents opened an ASC at both a bank and S&L (Table 5). It is interesting to note the ability of each type of financial institution to retain their current savings account customers when this new savings instrument was introduced.

Twenty-one of the ASC holders had savings accounts at a bank. Nine (43 percent) of these people opened an ASC at a bank while 8 switched to a S&L and the other 4 purchased an ASC at both financial institutions. On the other hand the S&L's were more successful in retaining their current customers. Twenty-eight of the ASC adoptors had savings accounts at S&L's. Twenty people (71 percent) in this group stayed with S&L's while 4 switched to banks and another 4 opened the ASC at both banks and S&L's.

IRA's. Savings and Loans captured 40 percent of all IRA accounts in the present study (Table 5). Banks were in second place with 23 percent of the accounts. Both of these financial institutions together, therefore, accounted for 63 percent of all IRA's opened. It is possible this combined penetration of the IRA market is somewhat higher since eight percent of the IRA's were opened through an employer and some of these employer plans may have been with a bank or S&L. Thus, it is likely that other types of non-depository institutions obtained about 35 percent of all IRA's.

Generally, people opened IRA's at institutions where they already had accounts or investments. This is especially true for brokerage houses, credit unions, and mutual funds since none of these financial institutions attracted new accounts. The very low penetration of IRA's by mutual funds (only one person opened an account there) is somewhat surprising. In this portion of the study, 21 percent of the respondents who had savings accounts owned shares in a money market mutual fund. Therefore, at least early in the introduction of these IRA's, it appears these funds were not successful in tapping their current customer base.

Fourteen percent of the respondents opened their IRA at a bank where they did not have a previous account relationship, while 21 percent did this at an S&L. At first glance, it may seem banks were not as successful as S&L's in attracting new customers. However, in this study, 84 percent of the respondents already had an account (checking) at a bank, while only 53 percent of the respondents had an account (savings) with a S&L. Therefore, a bank, when offering a new account, would be much more likely to attract a current customer since this financial institution has such a high penetration of the market with existing accounts.

Sources of Funds

NOW's. It appears that a number of people were maintaining a fairly high balance in their

Table 5. Place Where Account Was Opened

NOW	Percent Mentioned
A. Number Who Opened NOW Account (n=448)	
Opened	28%
Not opened	<u>72</u>
	100
B. Place Where the Account Was Opened (n=129)	
Old Bank	67%
Savings and Loan	23
Credit Union	8
New Bank	<u>2</u>
	100
C. Reason for switching financial institutions (FI) (n=42)	
New FI was more convenient	52% ¹
Consolidate accounts at one FI	48
New FI had a lower minimum balance	38
Disliked the service at the old FI	21
Other ²	40
ASC	
A. Number who opened ASC (n=244)	
Opened	15%
Not opened	<u>85</u>
	100
B. Place where the account was opened (n=36)	
Savings and Loan	61%
Bank	28
Both Savings and Loan and Bank	<u>11</u>
	100
C. Retention of consumer by FI	
Respondents who had other savings accounts at a bank and who opened an ASC (n=21) at a:	
Bank	43%
S&L	38
Bank and S&L	<u>19</u>
	100
Respondents with other savings accounts at an S&L who opened an ASC (n=28) at a:	
Bank	14%
S&L	72
Bank & S&L	<u>14</u>
	100
IRA	
A. Number who opened IRA (n=232)	
Opened	23%
Not opened	<u>77</u>
	100
B. Place where the account was opened (n=53) ¹	
S&L	40
Bank	23
Insurance company	13
Employer	8
Brokerage house	8
Credit union	5
Mutual fund	2

¹Multiple answers were possible therefore totals do not equal 100 percent.

²Made up of over 6 different responses, each with less than 10 percent mentioned.

checking accounts even when they were not receiving interest on their money. Forty-one percent of the NOW account holders opened these accounts with only checking account transfers (Table 6). Of course, S&L's had relatively low minimum balances, but 50 percent (not shown in the table) of the people who opened their accounts at their old bank did so using checking accounts as the only source of funds. On the other hand, a third of the NOW account holders moved some money from savings to meet the balance requirements.

ASC's. Certificate adoptors were asked where they obtained funds for their ASC's. They could give multiple sources as an answer, but they were not asked how much money was taken from each source. As presented in Table 6, 49 percent of the adoptors said they obtained funds from their passbook accounts. Equal percentages (23) obtained funds from their checking accounts and other savings accounts. Six-month money market certificates and money market mutual funds accounted for 20 percent each. Since one of the prime reasons for granting the authority to issue ASC's was to attract new retail funds back into financial institutions, especially from money market funds, the behavior of money market mutual fund holders was analyzed in greater depth.

Twenty-five percent (n=72) of the people responding to this survey owned shares in a money market mutual fund. Of this group of fund investors, 22 percent (n=16) opened an ASC account. However, less than a majority (44 percent) of these people took funds from the money market fund to buy their certificate. This means only 7 respondents (10 percent) out of the 72 who had invested in a money market fund took funds from this source to open an ASC. The primary reasons people moved money from a mutual fund were the higher yields in ASC's and the ability to lock in this yield for 12 months.

IRA's. Specific information was not obtained on the source of funds used to open IRA accounts.

Sources of Information

ASC's. Large differences exist between people who purchased and did not purchase an ASC. Three-quarters of the adoptors claimed they completely understood the ASC's requirements and yield while less than one-third of the non-adoptors said this. However, some information had reached most people since less than 20 percent of the non-adoptors said they did not understand them at all. This raises the question of where the respondents obtained their information.

The primary source of information for ASC's was employees at a financial institution (Table 7). The second most important source was some type of print media. It is interesting to note that with this complex product, radio and TV were far down the list as sources of information.

IRA's. Virtually all of the IRA eligible respondents had heard of IRA accounts

Table 6. Sources of Funds for Opening Accounts

NOW (n=129)	Percent
Checking account only	41
Combination checking and savings	33
Savings account only	12
Paycheck	6
Other	8
	100

ASC (n=36)	Percent Mentioned ¹
Passbook savings	49%
Extra money in checking account	23
Other savings accounts	23
Six month money market certificates	20
Money market mutual fund	20
Stocks, bonds, investments	14
Reason for switching funds from money market fund to ASC's (n=7) ¹	
Higher yield	86%
Guaranteed interest	71
Safety	29
Other	14

¹Multiple responses were possible

Table 7. Sources of Information.

Sources of information	ASC	IRA	Percent Mentioned ¹
Personnel at a financial institution		63%	67%
Brochures at financial institution		32	41
Print media advertisements or articles		26	30
Material enclosed with monthly statement		22	27
Professional advisors		17	33
Friends or family		13	21
Radio and television		11	14
Government sources		7	0
Personnel at insurance companies, credit unions and brokerage firms		0	28
Other		0	8

¹Multiple responses possible.

(98 percent). Nearly two-thirds of the survey participants claimed to fully understand the requirements for the accounts. Another one-third said they somewhat understood them. Only three people said they didn't understand them. Based on these findings it is probably safe to say that the media coverage and promotional efforts of financial institutions were effective in making people aware of IRA's and providing a majority of consumers with enough information so that they believed they had a clear understanding of the product.

Banks and savings and loan personnel were or would be used by over two-thirds of the respondents for additional information on IRA's. Brochures at the financial institution were the second most important source (41 percent). Radio and

television ads and programs were the single least important source of additional information. Even though the electronic media were seldom used sources of additional information it is possible that the electronic media make people aware of the product so that they then sought more detailed information before making a final decision.

Although not presented in a table, it was determined that only one person out of 14 who opened an IRA at a bank said they did so because this financial institution had knowledgeable personnel. For insurance companies, 5 out of 8 (63 percent) gave this as a reason as did 25 percent of S&L IRA holders. It should be remembered when comparing the above information that respondents did not rate financial institutions in comparison to each other. They simply stated why they opened an IRA at a specific institution.

NOW's. Respondents were not asked about their level of understanding or where they obtained information on NOW accounts.

CONCLUSIONS

Many family and consumer economists are concerned with the need to educate consumers to the selection of appropriate financial investments including savings products. While aggregate data is available to indicate the gross movement of money in the economy, little information is available on specific response to individual products or to the information sources used by families in making saving decisions. This study looked at consumer response in one SMSA to three new savings instruments introduced in the past two years. Based on the findings in this study, it may be concluded that these innovations had limited success in attracting small savers back to traditional institutions due to the sophistication of the consumer in evaluating the alternatives available to them. Generally, these new savings instruments were used by consumers 45 or over holding white collar positions. They were not significantly different from non-adoptors by either income or education.

Consumers were generally aware of the new innovations. Most believed that they had a good understanding of these products. As would be expected, adoptors indicated they were more knowledgeable on these products than did the non-adoptors. There was some indication that some consumers were confused about the more complex issues of tax benefits of some of the products.

Apparently, consumers rely heavily on financial institution personnel for the information they use in making savings decisions. In addition to the personnel they also rely on the brochures distributed by these institutions. As the investment became more complex there was a greater reliance on professional advisors for information. Approximately one-fourth of the respondents used the printed media as a source of information.

To the extent that the personnel employed by financial institutions are trained to counsel the individual on how to maximize their potential return, the heavy reliance on this source may be justified. The opportunity to train future consultants and financial institution personnel is one being pursued on many university campuses. This study supports the need for knowledgeable counselors.

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SENSITIVITY OF HOUSING PRICES
TO ECONOMIC AND SOCIAL CHANGES

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ABSTRACT

The determinants of housing sale price were estimated for houses sold in two time periods, 1971-1976 and 1977-1980 using Hedonic price theory and regression analysis. Natural gas consumption did not affect sale prices in the first period but higher consumption levels reduced sale price in the second period. In both periods housing prices were positively related to mortgage interest rates; the contribution of mortgage rates to housing price was greater in the latter than earlier period.

The decade of the 1970's was characterized by unusual economic and social changes which potentially affected the sale price of housing. Escalating oil prices and threatened supplies introduced the salience of long-term operating costs as a consideration to buyers of housing. Mortgage interest rates rose approximately 6 percentage points between 1971 and 1980, potentially dampening both the supply and demand for housing. In the Columbus, Ohio SMSA quality of education tended to become increasingly disparate by school system as the decade progressed.

This study analyzed the sensitivity of housing prices to changes in energy costs, mortgage interest rates and perceived changes in school quality that occurred between 1971 and 1980 in the Columbus, Ohio SMSA. The model of housing prices was derived from hedonic price theory and estimated with regression analysis. Knowing the reactions of buyers to the relative energy consumption of housing results in more accurate calculation of returns to energy conservation investments.

DETERMINANTS OF HOUSING VALUES

Housing can be described as a function of the attributes or service flows of which it is composed and for which it is demanded. Thus the sale price of housing is seen as a function of the prices of each of the attributes of the home. This study hypothesizes that the determinants of housing value are as follows:

$$P_i = P_i (S_i, L_i, N_i, A_i, PS_i, E)$$

where

S = a vector of structural characteristics including energy influential characteristics

L = a vector of lot characteristics

N = a vector of neighborhood characteristics

A = a vector of accessibility characteristics

PS = a vector of public service characteristics

E = a vector of economic characteristics

i = refers to the individual house.

HYPOTHESES

Energy Costs

Prior to 1973 when energy costs were low it is unlikely that thermal efficiency would have been capitalized into sale price. During the oil embargo of late 1973 and for the next few years consumers' knowledge of

the salience of energy increased but consumers were skeptical of the validity of the shortages and the likelihood of their continuation [31, 2]. However, by 1977 price controls were beginning to be lifted; the price of natural gas increased 64 percent between 1971 and 1976 and had nearly doubled by 1980 in the Columbus area.

The effect of thermal integrity on sale price is largely undetermined. In the early 1970's Grether and Mieszkowski [12] found the presence of insulation to be unimportant. However, Johnson and Kaserman [15] discovered that homes with lower fuel bills tended sell for more than those with higher fuel bills. Homes heated with natural gas were shown to sell for more than those heated with the more expensive fuel oil after 1974 by Halvorsen and Pollakowski [14].

Mortgage Interest Rates

Interest rates reflect not only efforts to control inflation through monetary policy but also consumers' future inflationary expectations. High interest rates reduce starts and thus may increase the price of existing housing. Because high interest rates also tend to dampen demand the effect of limited supply in increasing housing prices may be abated. However, income tax deductions and population growth stimulate demand. If

in addition, buyers' expected housing price increases exceed interest rates, demand will be robust and housing prices will be boosted.

Social Changes

Other changes occurred in the Columbus SMSA during the 1970's. Between 1969 and 1981 the citizens of Columbus had defeated every school levy proposed. Thus, the Columbus City School system was likely to have declined in quality. Furthermore, in the latter 1970's busing for school desegregation was implemented in the city of Columbus. This may have reduced the perceived quality of city versus suburban schools to home buyers.

Based on the economic and social changes discussed above it was hypothesized that:

1. Consumers buying homes after 1976 were more likely than those buying homes prior to 1977 to have paid extra for homes using less natural gas, size and other characteristics held constant.
2. The hedonic prices of the structural characteristics increasing thermal efficiency of the home increased after

1976 reflecting higher fuel costs. Likewise the hedonic prices of features reducing thermal efficiency decreased after 1976.

3. After 1976 increases in mortgage interest rates raised housing prices.
4. After 1976 the imputed value of school quality increased.

SAMPLE AND DATA

The sample originated from gas meter records provided by Columbia Gas of Ohio for homes located within the Columbus, Ohio, Standard Metropolitan Statistical Area (SMSA), of 1973 monthly natural gas consumption. A questionnaire was mailed to the addresses on the consumption records, eliciting detailed descriptions of homes, especially the features affecting energy use. A 54 percent return rate was obtained. Approximately one of every four single-family homes from which a questionnaire was returned was sold to a new owner between 1971-1980. These 615 homes form the sample for analysis.

All sample homes are previously owned, single family detached dwellings which are presently owner occupied. New homes were excluded as their prices are assumed to be derived more from building costs than the prices of existing houses where the latitude for achieving equilibrium of demand and supply bids is greater. The sample is limited to detached, owner-occupied single family dwellings in order to ensure that energy costs are borne solely by the buyer, rather than a renter as would likely be the case for multiple unit dwellings. Also, most homes in the Columbus SMSA are of this type, allowing generalizability.

All of the sample homes are located in the Columbus, Ohio, SMSA and all are heated with natural gas. Natural gas has been adopted for space heating by 57 percent of American but 84 percent of Columbus, Ohio households [28,29]. Columbus has 5701 heating degree days per year which is somewhat typical for much of the midwest.

Data from several sources were used in conjunction with the questionnaire and Columbia Gas of Ohio 1973 consumption records. Sources of data are listed in Appendix A. Data components were matched by the home's address.

Missing and inconsistent data were two of the most difficult problems of this study. A few sample members were eliminated because of incomplete data. Most other missing data were scattered throughout the variables and sample members. In general, Multiple Listing Service and tax data were substituted for missing questionnaire information when possible, otherwise means by geographical area were used as substitutes. For a more detailed description of treatment of missing data, see Longstreth (1981).

VARIABLES AND METHODOLOGY

The literature using the hedonic price technique through regression analysis to calculate salient determinants of housing is well developed. Structural characteristics have been demonstrated to be the most important features determining sale price [25, 24, 7, 12, 18]. Location, neighborhood and public service characteristics have also been shown to be salient [17, 24, 22, 18]. Selected measures of these characteristics used in this study include distance from the central business district, aesthetic qualities of the neighborhood and quality of schools. All of these tend to increase the value of housing [17, 24, 22, 18]. Variables selected to reflect the characteristics of the houses are defined in Appendix A; means are reported in Exhibit I. Selection was based on relevance as demonstrated in previous studies and availability.

Exhibit I. Means and Standard Deviations of Variables

<u>Variables</u>	<u>Mean</u>	<u>Standard Deviation</u>
Total Sale Price of house in 1980 dollars	51,976.95	23,109.13
Living area	1286.78	422.15
House age	22.68	15.44
Stories of living area	1.60	0.67
Number of garage spaces	1.00	0.77
Presence of air conditioning	0.36	0.48
Presence of fireplace	0.29	0.46
Presence of family room	0.50	0.50
Presence of swimming pool	0.02	0.15
Number of bathrooms	1.62	0.62
Lot area	9240.84	5066.91
Natural gas consumed	1151.50	385.12
Income	29904.30	8308.87
Distance from CBD	6.78	2.12
Pupils per teacher	25.00	1.13
Mortgage interest rate	9.08	1.13

To estimate the value of the characteristics sale price was regressed on the variables measuring the characteristics. The regression coefficient was interpreted as the implicit or hedonic price of that feature. The parameters were established with ordinary least squares regression. Preliminary analysis was used to eliminate severely collinear variables. The property tax cost variable was eliminated because its collinearity with the other variables in the first equation was so high that the consequent bias was deemed to exceed errors from misspecification.

Heteroscedasticity existed in these data as indicated by a Goldfeld-Quandt test. The error term was hypothesized to be proportional to house size thus the equations were reestimated using weighted least squares with the weight equal to the inverse of house size squared.

The equations were estimated in both linear and nonlinear form, both of which are consistent with hedonic price theory. The

nonlinear, quadratic form, which better fit the data, is reported here.

THE EMPIRICAL ANALYSIS

The model used to determine the salient characteristics of housing sale price was estimated for houses sold in different time periods to assess how the imputed attribute prices were affected by economic and social changes. The model was estimated first, for homes sold between January, 1971 and December, 1976 and second, for homes sold between January, 1977 and July, 1980. Results are presented in Exhibit II.

Exhibit II. Regression Analysis of Model over Time: Sale Price as Dependent Variable

	Equation 1 (1971-1976)		Equation 2 (1977-1980)	
	Coefficient	t-ratio	Coefficient	t-ratio
STRUCTURAL CHARACTERISTICS				
House size	17.99	8.72***	17.14	7.06***
House age	-116.73	-2.46**	21.61	0.50
Number of stories	1753.30	1.99**	2633.53	2.78**
Number of garage spaces	2466.83	3.12***	2881.16	6.06***
Presence of air conditioning	1998.50	1.59	2828.10	2.46**
Presence of fireplace	2351.42	1.95**	1771.46	1.29
Presence of family room	2293.87	2.06**	3627.86	3.25***
Presence of swimming pool	10459.94	2.32**	7563.09	2.55**
Number of bathrooms	3541.75	2.76**	3280.80	2.12**
ENERGY CONSERVING CHARACTERISTICS				
Quantity of Natural Gas ₁ (ccf)	5.44	0.78	-15.84	-2.26**
Quantity of Natural Gas ₂	-0.0006	-0.21	0.008	2.63**
LOT CHARACTERISTICS				
Lot size	-0.002	-0.03	0.16	1.19
NEIGHBORHOOD CHARACTERISTICS				
Income	0.74	7.81***	0.56	5.82***
ACCESSIBILITY CHARACTERISTICS				
CBD ₁	6211.73	3.67***	4917.13	3.23***
CBD ₂	-460.66	-3.69***	-335.72	-3.07***
PUBLIC SERVICE CHARACTERISTICS				
Pupil/teacher ratio	-1060.66	-3.30***	-2601.03	-6.66***
MORTGAGE INTEREST RATES				
	1800.77	1.81*	2794.80	5.23***
R ²	.80		.82	
F Ratio 5	71.20***		73.80***	

*p < .10
**p < .05
***p < .005

Natural Gas Consumption

The results in Exhibit II substantiate the first hypothesis. Between 1971 and 1976 housing price were unaffected by the quantity of natural gas consumed as the regression coefficient is both small in absolute value and statistically non-significant. In contrast, the coefficient estimated for homes sold between 1977 and 1981 was larger in absolute value and statistically significant. Consumption of an additional hundred cubic feet of natural gas diminished a home's market value by \$15.84

This is probably a conservative estimate of the effect of gas consumption as the thermal value of some homes was improved over time so that latter buyers had a wider variety of thermal efficiencies to choose from compared to buyers in the early 1970's.² The increased importance of natural gas consumption in the latter period relative to the early 1970's may have reflected not only heightened awareness of escalating energy costs but also expectations of increasingly higher costs.

Energy Influential Characteristics

The implicit values of most of the structural features included in the model affecting the homes thermal efficiency changed over the two time periods as predicted in Hypothesis 2. The imputed value of each story increased over the period by nearly \$900. This may reflect the reduced energy needed per square foot of living space required in multiple versus single story homes, but it may also reflect increased preferences for multiple story homes due to other factors as well. The slight drop may reflect increasing fuel bills, declining family size or other factors.

The other energy influential characteristics tend to inflate energy consumption. The changes in the hedonic prices of all of these features except air conditioning confirmed the second hypothesis also, as the hedonic prices of house size, age, pool, and fireplace all declined in the latter 1970's or became statistically nonsignificant. Of course, while energy costs may have affected the change in preferences for these items, other factors may also have influenced the change.

Mortgage Interest Rates

The statistically significant coefficients indicated that mortgage interest rate variations had a positive effect on the price of housing in both time periods, confirming Hypothesis 3. However, this effect was one and a half times larger after 1976 than prior to that time; mortgage interest rates raised sale price by \$1801 and \$2795 in the first and second time periods, respectively. The positive sign of the coefficient probably reflects the dominant influence of consumers' inflationary expectations that existed throughout the 1970's.

School Quality

In both periods the coefficients of the pupil/teacher ratio differed significantly from zero indicating that this indication of school quality was perceived by and important to buyers and sellers. The absolute value of

the coefficient doubled over the period. Thus supporting the fourth hypothesis. Prior to 1977 a one unit increase in pupils per teacher reduced sale price by \$1061 and by \$2601 after 1976. In 1971 the pupil/teacher ratio in these schools ranged between 18 and 23; Columbus City School's ratio was 21. By 1980 the Columbus system's ratio was 29 while the average for suburban schools was 24 and the minimum was 19. The widening disparity between schools' student-pupil ratios and the imposition of busing in the city schools probably both contributed to the perceived change in quality of schools over the time period and thus the increased value to buyers in the latter 1970's.

Neighborhood and Location Attributes

Income of neighborhood residents, proxying for aesthetic quality is a statistically significant determinant in both periods but declined in value over time. A \$1,000 difference in resident income between two census districts resulted in a \$740 difference in sale price pre-1977 but only a \$560 difference afterward. Aesthetics, though still valued, seem to have become less important relative to economic and social issues.

Distance to the central business district (CBD) also declined in value in the second period. A house located 1 mile from the CBD garnered an extra \$5,770 prior to 1977 but \$4,581 afterward. This may have demonstrated a concern about rising gasoline prices.

DISCUSSION

The results of this analysis indicate that consumers changed their valuations of housing attributes to reflect the rising energy costs of the 1970's. Consumers did not account for the home's natural gas consumption prior to 1977 but paid more for houses with lower consumption after 1976. This evidence may encourage additional investment in energy conserving structural features as well as behavioral changes that conserve energy. Of course, in order for the capitalization to occur information about the energy consumption or thermal efficiency needs to be provided to potential buyers. This work shows that in lieu of an energy labelling program sellers who have improved the efficiency of their homes may have saved utility bills to demonstrate reductions to buyers.

Housing prices were sensitive to increasing energy costs not only through the value of direct consumption but also in the imputed prices of the structural features affecting both natural gas and electricity consumption. More energy efficient, multiple-story houses, increased in value compared with one-story homes. While the hedonic prices of fire-

places and pools, among other energy consuming features, decreased between the time periods.

The measures used in this study cannot determine precisely how much of the change in the feature's hedonic price reflected the increasing cost of energy. However it is likely that the changes were at least partially attributable to increasing costs as well as changes in preferences for aesthetics and other attributes, since the changes tended to follow the directions hypothesized based on energy costs alone. Consumers interested in the investment as well as consumption value of the home have an incentive to select houses with features that tend to increase in value over time and to improve the thermal integrity of the energy consumptive features if possible.

The sensitivity of sale prices to mortgage rate increases was hardly surprising. However, the size of the windfall gain to owners of existing housing was interesting. The gains may be a partial consequence of consumers migrating from other large cities where housing prices and expected rates of increase tend to exceed those in Columbus. The equity earned elsewhere would allow a robust demand even in a time of high interest rates.

Not only were housing prices sensitive to economic changes but also to perceived changes in school quality. Parents appear to have perceived the widening disparities of school quality among the school systems studied, as reflected in pupils per teacher.

FOOTNOTES

¹For more information concerning comparison of the sample with the Columbus, Ohio SMSA, see Longstreth (1981).

²Consumption in 1973 and 1978 is correlated, $r = .93$, $p \leq .0001$. Movers are unlikely to invest in conservation unless they are aware of capitalization.

List of Independent Variables^a

Characteristic and Variable	Source ^b	Definition
HEATING EFFICIENCY		
Natural Gas	CGOH	ccf of natural gas used for heating in 1973
STRUCTURAL CHARACTERISTICS		
Living area	FCAO	Interior living area of house in square feet
Stories of living area	OARDC	Number of stories (floors) of living space
Fireplace	OARDC	Dummy indicating presence of at least one fireplace
House age	FCAO	Age of house at time of sale in years
Garage	FCAO	Number of closed garage spaces
Air conditioning	FCAO	Dummy indicating presence of central air conditioning
Family room	FCAO	Dummy indicating presence of a recreation or family room
Swimming pool	FCAO	Dummy indicating presence of an in-ground swimming pool
Bathrooms	OARDC	Number of bathrooms
LOT CHARACTERISTICS		
Lot area	FCAO	Size of lot in square feet
NEIGHBORHOOD CHARACTERISTICS		
Income ^c	BOC	Median income of residents in census tract
ACCESSIBILITY CHARACTERISTICS		
Distance from CBD	FCBC	Straight-line distance to CBD in miles
PUBLIC SERVICE CHARACTERISTICS		
Pupil/teacher ratio	OED1	Average teacher/pupil rate of public school system
ECONOMIC CONDITIONS		
Mortgage rates	BFSL	Average annual interest rates on residential mortgages charged by one savings & loan assn. in Columbus, Ohio

^aDependent variable is total sales price of house in 1980 dollars. Mean sales price was \$51,976.95 with a standard deviation of \$23,109.13 when adjusted to 1980 dollars. Source was Columbus Board of Realtors, Multiple Listing Service, Columbus, Ohio and Deed Office, Franklin County, Ohio.

^bSources are OARDC = Ohio Agricultural Research and Development Center, The School of Home Economics, College of Agriculture and Home Economics, Department of Home Management and Housing, Project Hatch 570, Energy Questionnaire 1978. CGOH = Columbia Gas of Ohio, Consumption data for 5000 addresses, 1973. FCAO = Franklin County, Ohio, Assessor's Office. Individual Residential Property Appraisal Records, 1972-1978. BOC = U.S. Department of Commerce, 1970 Census of Population and Housing, Social and Economics Statistics Administration, Bureau of the Commissioners, Franklin County Highway Map, Cletus E. McPherson, County Engineer, Columbus, Ohio, 1978. OED1 = Ohio Department of Education, Division of School Finance, Total Employees and Classroom Teachers per 1000 pupils, 1970 to 1980. BFSL = Buckeye Federal Savings and Loan Assn., Average Annual Mortgage Interest Rates, 1971 to 1980, Columbus, Ohio.

^cExpressed in 1980 dollars

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ABSTRACT

It is proposed that instrumental acts of spending with credit cards leads to the classical conditioning of credit card stimuli with the spending response. As a result, the mere presence of credit card stimuli should direct spending. As predicted, the amount spent in an applied laboratory setting and the probability and amount spent in an actual spending situation were facilitated by the presence of credit card stimuli.

From their introduction in the early part of this century, credit cards have become a significant factor in economic and social policy (the definitive history of credit cards has yet to be written although some partial histories exist - 10, 13, 14, 19). Today there are close to 600 million credit cards in circulation with an average family having five cards and a monthly balance equal to 15% of monthly income. It is projected that by the mid 1980's credit card transactions will dominate all transactions (15, 16). Credit cards have thus become an essential feature of our mercantile system accounting for a significant proportion of sales and allowing businesses to sell more goods and services to a wider range of individuals (5). Additionally, credit card operations in and of themselves can result in substantial profit (6). At the time of their inception credit cards simply facilitated commerce. Today, they have become a vital component of business.

As they have become an indispensable aspect of business and banking, so too they have become vital to the maintenance of individual's standard of living. Credit cards provide a convenient means of transaction and facilitate management of household accounts. All in all, credit cards have become an indispensable aspect of personal money management, business and banking. Maybe more significantly, credit cards are believed to be the precursor to a new economic and social order characterized by a cashless medium of exchange (11, 19).

Yet the prominence of credit cards has also generated serious problems. Credit abuse is a widespread problem of social and economic concern. As a major source of retail and bank loss, credit card abuse, default and fraud affect consumers who must pay higher prices to offset the loss (22). By representing money which may not exist widespread credit use is believed to fuel inflation. More importantly, individual debt entanglement is a shattering experience affecting facets of an individual's personal and social life. Debt

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entanglement has been found to be associated with loss of self-esteem, unemployment, marital stress, and a range of physical and psychological disorders (4, 21). The importance, value and problems associated with the responsible and irresponsible use of credit cards necessitates a thorough understanding of the manner in which individuals come to use or abuse them.

Behavioral research on credit cards has been mainly descriptive, centering on the development of profiles of users and nonusers. Who is the user? - age, education, socioeconomic status, etc. (e.g., 18). How do attitudes relate to credit card use (e.g., 1)? While the descriptive behavioral work and other research directed at exploring broader economic issues (e.g., the use of credit cards under various rates of interest - 19) are of interest and value, empirical and theoretical analyses that are drawn from basic principles of individual psychology can better promote understanding of antecedents and consequences of individual credit card use.

The apparent enhancement of spending with credit cards is the characteristic of credit cards of primary concern in the research reported here. Retailers and credit card researchers (2, 12) generally believe that people spend more with credit cards. Indeed, there is a range of descriptive data to support this: consumers report that they spend more with credit cards (3), credit card use is related to higher per purchase spending (12). Extant explanations of this facilitation are based either on laws of economics or common sense: debt is increasingly socially acceptable (7), use of credit cards lowers subsequent risk of use of credit cards (23), or it is simply a convenient and a painless way to spend (12). However, the correlational nature of these studies does not make it clear whether it is the credit card which causes spending or whether higher spenders gravitate toward credit card use. It is suggested here that through experience and use, credit cards acquire the capacity to elicit spending behavior. A simple learning model is proposed to explain the process whereby consumers come to spend in a relatively automatic fashion simply by virtue of their being in the presence of credit cards cues.

As an individual learns to perform a response that is instrumental in securing a reward, stimuli associated with the instrumental response gain the capacity to elicit that response and such stimuli also gain the capacity to elicit the affective reactions surrounding the response and induced by the reward (20). This process is termed classical conditioning. Spending may be conceived as an instrumental response that is reinforced by the positive affect generated by the acquisition of goods. This research is based on the proposition that components of the spending response and the affective

response to the reward of spending become classically conditioned to stimuli associated with the act of spending and that such stimuli become directive for further spending. Consequently, as an individual instrumentally spends with credit cards or in the presence of credit card stimuli (e.g., advertisements for the credit cards and/or announcements that the credit cards are accepted), the credit card stimuli gain the capacity, as a result of classical conditioning, to affect the magnitude of subsequent spending responses; individuals may be more likely to spend, spend more, or more quickly in the presence of credit card cues.

The results of several studies have been consistent with this model (8, 9). Simulated spending has been facilitated in the presence of credit card stimuli. In one study, subjects estimated the amount they would spend for various consumer items with the presence and absence of credit card stimuli varied. As predicted subjects indicated that they would spend more per item when credit card stimuli were present. In a second experiment subjects, ostensibly involved in an unrelated matter, were interrupted and asked to estimate the amount they would contribute to charity. The presence and absence of credit card stimuli was varied. As predicted, subjects indicated a higher estimate of donation when doing so in the presence of credit card stimuli.

The elegant simplicity of this previous research shows clearly that as stipulated in the classical conditioning model, the presence of credit card stimuli enhances the magnitude of simulated spending. That is, credit card stimuli, having no instrumental purpose for the experimental task, was found to facilitate the magnitude of estimated spending. However, in an attempt to control the experimental situation to the extent needed to establish interpretable cause and effect relationships between credit card stimuli and spending, realism was of necessity sacrificed. The first experiment reported here is designed to provide evidence regarding the impact of the presence of credit card stimuli on actual spending behavior. The design of this study complements the one in which subjects estimated the donation to a charity. While in that experiment subjects were asked to estimate their contribution to a charity with the presence of credit card stimuli being varied, in this study subjects were asked to make an actual donation to a charity with the presence of credit card stimuli varied. It was predicted that the presence of credit card stimuli would increase the actual donation to a charity.

In a second study tipping of cash and credit card customers was observed in a restaurant. It was predicted that for equivalent checks, credit card tips would be greater than cash tips. Credit card stimuli, present while a credit card customer is paying the check, will increase the size of tip.

The experiments reported were designed to test a classical conditioning model of credit card use in an applied manner. The model predicts that through a conditioning process the presence of credit card stimuli enhances spending behavior.

Subjects

The subjects were thirty undergraduates. They were run in individual testing sessions and randomly assigned to one of two experimental conditions - credit card stimuli present or absent.

Procedure

Subjects were ostensibly participating in an experiment of "impression formation". Ten minutes into reading short descriptions of various individuals and answering various questions, a stranger (actually an experimental confederate) entered, approached the subject and indicated that the "United Way" was collecting door to door across campus. Subjects were asked to make a donation to the charity. Following the donation the confederate exited and the subject completed the masking task. The credit card stimuli consisted of MasterCard insignia (determined in a pilot study to be the most recognized) and regular and large size replicas of actual MasterCard cards. The stimuli were placed in the upper right hand corner of the subject's table. Permission to use the "United Way" name was obtained from the local United Way director and actual money collected was contributed.

Results

The amount of money donated by subjects was the dependent variable of interest. Consistent with the results of previous studies in which spending was simulated, in this experiment subjects actually contributed significantly more in the presence of credit card stimuli, $F(1,28) = 12.9$, $p < .01$. Of the fifteen subjects in each group, thirteen contributed in the presence of credit card stimuli, (average donation \$.36) while only five contributed when credit card stimuli were not present (average donation \$.11). Thus as predicted from the classical conditioning model, and consistent with an identical study which showed estimated donation to a charity to be facilitated by the presence of credit card stimuli (9), actual donation to a charity was increased in the presence of credit card stimuli.

EXPERIMENT 2

In an attempt to control the experimental situation to the extent needed to establish interpretable cause and effect relationships between credit card stimuli and actual spending, realism has of necessity still been sacrificed. The operation of the predicted causal relationship between credit card stimuli and spending was viewed in the context of a laboratory experiment using college students as subjects. Experiment 2 was designed to provide field evidence regarding the impact of the presence of actual credit card stimuli on actual spending behavior of adults. In this experiment tips of cash and credit card customers of a restaurant were recorded. It was predicted that as credit card stimuli are present when paying with a credit card, the presence of credit card stimuli

would enhance the actual percentage of tip received by the waiter or waitress for equivalent checks.

Procedure

With the cooperation of a local restaurant 135 customers were observed over the period of one week. Party size, check amount, mode of payment and amount of tip were recorded by the waiters and waitresses. A random sample of credit card receipts indicated 100% accuracy in recording of check size and tip.

Results

The dependent measure of interest is the tip. A 2 (whether the person paid by cash or charge card) X 4 (amount of check divided into quartiles) Analysis of Variance indicated that when credit card stimuli were present subjects left a significantly higher percentage of tip, $F(1,127) = 4.48, p = .03$. Table 1 indicates clearly that at each level of check size individuals paying with credit cards left a larger tip. Overall, the tip when the check and tip were left with credit cards was an average of 16.95% of the check and when left in cash only 14.95%.

Table 1. Mean Tip as a Function of Check Size and Payment Mode.

		Level of Check ¹			
		1 (\$17.00)	2 (\$23.00)	3 (\$31.00)	4 (\$47.00)
Mode of Payment	Credit card	\$3.03(17.8) ²	\$3.92(17.1)	\$4.91(15.8)	\$8.04(17.11)
	Cash	\$2.36(13.9)	\$3.60(15.6)	\$4.64(14.9)	\$7.23(15.4)

¹Amount of check was divided into quartiles. Amount in parenthesis represents the median within that quartile.

²Average percentage of check

DISCUSSION

The experiments show that, as stipulated in a classical conditioning model, the presence of credit card stimuli enhances the magnitude of actual spending. This is true in both the real life setting of a restaurant and a controlled setting in the laboratory. Thus while people may actually spend with credit cards because of the ease of transaction an unanticipated consequence may be that credit card stimuli may acquire the ability to elicit spending behavior as a reflexive, classically conditioned response. The presence of credit card stimuli may facilitate spending.

The proposed model and studies directly address the recognized facilitative nature of credit card spending. Alternative systems of payment may differ in important economic and social characteristics and exert significant influence on individual consumer behavior. The need to understand the antecedents and consequences of credit card use is necessitated by the need to create more effective and satisfied consumers of credit, make clearer and more effective government regulation in this area, and address remedies to the serious physical and psychological consequences that result from debt entanglement. By casting the issue of credit card facilitation within the framework of a

relatively well understood learning process, further empirical laws regarding credit card use and effects may be derived and tested.

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CONSUMER EDUCATION WORKSHOP II: PANEL ON CERTIFICATION

Moderator: William D. Rader, Ohio University

STATE CERTIFICATION REQUIREMENTS FOR CONSUMER EDUCATION TEACHERS

David Graf, Northern Illinois University

Consumer science can be more properly termed consumer education or consumer economics. Consumer subjects are widely taught and often mandated in the States. However, states rarely require special undergraduate training or certification to be able to teach consumer subjects.

Letters were sent to certification agents in each of the 50 states. They were asked to specify the requirements necessary for secondary teachers to be able to teach such subjects as "consumer education," "consumer economics," "personal economics," or "personal finance." Responses were received from certification agents in each of the 50 states.

Courses dealing mainly with consumer science topics were most often titled consumer education or consumer economics. A number of other secondary courses include elements of consumer topics. Some of the most common of the courses which include consumer elements are economics, free enterprise, and personal finance.

Even though there are teachers who are responsible for an entire daily schedule of consumer subjects, they are rare. Typically, a teacher is responsible for two sections of a consumer course. This may be a course primarily devoted to consumer science or a course which contains elements of consumer science. Whether they deal with consumer science on a large or small scale, most secondary teachers in the United States are not specifically trained or certified in this field.

The 50 state certification agents were asked whether specific undergraduate courses were necessary to teach consumer science subjects in their states. Nine certification agents stated that coursework in economics was required to teach consumer science. All nine listed Social Studies teachers as qualified as long as they were prepared in economics. Six of the agents listed business education teachers and one listed home economics teachers as certified as long as they were prepared in economics.

Thirteen of the certification agents stated that as long as the teacher was prepared in a specific discipline on the undergraduate level they were automatically prepared to teach consumer science. Many of these states listed more than one discipline as being qualified to teach consumer science subjects. These states do not include a specific undergraduate consumer course requirement as part of the preparation. Eight of these thirteen states listed Home Economics or Vocational Home Economics, seven listed Business Education, and six listed Social Studies as the discipline qualified to

teach consumer science in their states.

From the secondary school point of view, little or no formal coursework is required by state certification boards to teach consumer science courses. Eighteen of the certification agents replied that their states required no coursework in consumer science to be qualified to teach it. These states included Alaska, Colorado, Connecticut, Delaware, Florida, Kansas, Maine, Maryland, Massachusetts, Minnesota, Montana, Nebraska, North Carolina, South Carolina, Utah, Vermont, Washington, and Wyoming.

Nine states require persons teaching in the area of consumer education/economics to have formal coursework. Arizona (Vocational Home Economics), Illinois, Indiana (Home Economics), Missouri (Business Education), Oregon, Texas (Vocational Home Economics), and Virginia (Vocational Home Economics) were states that had some form of regulation of this nature.

Four states issued specific certificates or endorsements to be able to teach consumer science subjects. This was true in Georgia (Mathematics, Business Education, Home Economics and Social Science), Michigan (Vocational Home Economics), Tennessee (Business Education, Home Economics and Social Studies), West Virginia (Business Education).

As we move into an era of greater self sufficiency, the teacher of consumer science will need a broader preparation than even the one course which may be specified in a few states. Shopping decisions, consumer rights and responsibilities, values and goals, and personal finance topics traditionally taught must be expanded. Technology, career changes, investing, political action and economic principles will have to be incorporated into the consumer program at the secondary level. This means that the secondary consumer science teacher, regardless of base discipline, should have training in political science, economics, computer literacy, and some insight into the business world.

Following the above presentation, a specific case was examined. The process involved in changing certification requirements in Missouri is discussed with application made to existing consumer education certification requirements. Two state department of education officers delivered this presentation.

MISSOURI TEACHER CERTIFICATION

Turner Tyson and Paula Harzfield
Department of Education, State of Missouri

In the past decade (1973-83), the professional certification for public school teachers has been

an active issue for Missouri educators. Activities on this particular issue have been positive in nature. The Teacher Education and Certification Advisory Committee (TECAC), established in 1974, initiated a process of reviewing and updating requirements for major certification areas and levels. Action by TECAC via the State Board of Education resulted in significant certification revisions.

- a. In 1978, the State Board adopted recommendations by TECAC that revised elementary standards and created certification for Early Childhood and Middle School teachers. The new elementary measures became effective in September, 1982 and increased emphasis on reading preparation.
- b. In 1979, the State Board accepted revisions for all secondary certification areas. These changes will take place September, 1984. Secondary teachers will be required to take additional clinical experiences.
- c. In 1981, the State Board adopted revised standards for ten special education categories to become effective in 1986.
- d. A recommendation now before the State Board would implement significant changes in certification of school administrators. This proposal which would be effective in 1985, would discontinue "life" certificates for principals and superintendents and five-year and ten-year certificates would be issued.

There are specified, organized procedures for recommending changes in teacher certification or proposing new areas for certification. Suggestions for future changes usually originate through the various professional and subject matter organizations. Such proposals would then be delivered to the TECAC for consideration. If the committee agrees that changes might be desirable, it will ask the Commissioner to appoint an ad hoc committee to study the proposal and make recommendations back to the full committee. These ad hoc groups consist mainly of people with an expertise in the area to be examined, but may also include principals, superintendents, and teacher educators. For example, the ad hoc committee that worked on special education revisions had twenty members representing various interest groups in special education as well as parents and local school board members. Committees are currently reviewing standards for Special Services Personnel and Non-Academic Vocational certificates.

Recommendations prepared by various committees are presented to the TECAC for discussion and action by the chairman of the ad hoc group. Proposals accepted by the state-wide advisory committee are presented to the State Board of Education for formal review and approval. The State Board has accepted every recommendation made by TECAC except for two minor changes.

Subject matter areas which teach consumer education classes include social studies, mathematics, business, and home economics. In Missouri, vocational

consumer homemaking programs must teach a consumer education semester class plus include consumer education concepts into all the other home economics classes taught.

Under current certification requirements in Missouri, a person must complete seven hours of home management and consumer education in order to receive secondary consumer and homemaking education certification. Under the revised requirements, which will become effective September 1, 1984, six semester hours of consumer education and resource management must be completed. At least one course in consumer education and one course in resource management are required.

Current business certification does not require the completion of any consumer related course, however the new requirements will require completion of 2-4 hours of business or consumer related law.

Mathematics current and revised certification requirements do not specify completion of any consumer related course. The closest consumer related course requirement for social studies certification is a 3 hour economics course.

In the past five years, the major thrust in teacher certification has been toward improvement of the quality of the professional personnel in Missouri schools. Toward this end, the State Board, the Commissioner, and TECAC developed a four part approach.

- a. Effective in 1982, all persons certified to teach in Missouri must have an overall 2.5 grade point average. This requirement was viewed as a positive step toward insuring the quality of prospective teachers.
- b. After July, 1983, students entering teacher education programs must attain established cut-off scores on recognized national tests. This is an effort to insure that quality people enter teacher preparation.
- c. In November, 1982, the State Board initiated a process for reviewing the teacher education programs at Missouri colleges and universities. This approval process lists categories of performance standards for teacher preparation programs.
- d. For several years, the State Board has backed legislation that would eliminate the "life" teaching certificate in Missouri.

Missouri is one of only three or five states that still issues life certificates. It seems quite impractical that a twenty-one year old should be granted a certificate and expect to teach thirty years with no or little professional development. Teaching is a public sector occupation and it appears that more and more the people interested in education are anxious that school teachers keep up to date with educational trends and practices. The elimination of the life certificate is a high priority with several key legislators as well as the current Governor.

The impetus for requesting stronger certification requirement in Oregon for teachers of Consumer Ed has been brewing for several years and the Teachers' Standards and Practices Commission is currently considering competency testing for all teachers. Past experience in Oregon shown by a 1979 survey and a follow-up survey in 1981 found over one-third of Consumer Education teachers were teaching the subject for the first time. This high turnover ratio could be attributed to several factors: (1) teachers in the larger school districts were being reassigned, in some cases, every semester (2) Oregon rules allow administrators to mis-assign teachers two periods a day.

In conversation with Marian Kienzle, State Department Personal Finance Specialist, and other Consumer Educators around the state, it became apparent that Personal Finance was being used as a "dumping ground," in some cases, to create a position for a coach or to give a full work load to a teacher with an unfilled work day. Consequently, Personal Finance classes in these situations developed a "Mickey Mouse" reputation. Teachers with little or no background in Personal Finance didn't know what to do with the class or what to teach. Kids became bored, teachers became frustrated, administrators reassigned them and the cycle continued. In one Oregon high school, the entire Personal Finance Department was eliminated. Those teachers were placed in other classes and teachers from other departments were given the Personal Finance responsibility! In a large Oregon school district, the current president of OACE was temporarily riffed last fall and when rehired was not given a Personal Finance teaching assignment.

A survey just completed in Oregon found that 55% of those currently teaching Personal Finance have had no Personal Finance since college and a whopping 35% had no preparation in college for teaching Personal Finance.

In order for us to have continuity in our Personal Finance program and to upgrade the teaching of it we need to reduce the large turnover rate of Personal Finance teachers. In Oregon, we feel the best way to do this is by having tougher certification requirements for teachers of Personal Finance. We feel we cannot ask for a change in the misassignment rule because it would pose too much of a problem for small school districts where their schedules are more inflexible and staffs are usually small, but we can ask for qualified people in the classroom.

Following this presentation, the university perspective was examined. Carole Vickers, a professor of home economics at Marshall University, presented her remarks in what is fundamentally an outline form.

CONSUMER EDUCATION SESSION II:
PANEL ON CERTIFICATION
PERSPECTIVE OF A UNIVERSITY PROFESSOR

Carole Vickers, Marshall University

After much vacillation, I've settled on the following approaches: (1) some basic assumptions; (2) advantages of certification (3) disadvantages; and (4) identification of central concepts as I see them. My perspective is that of a college professor/department chair of a 10,000 student university in a state whose population is 1.8 million. Consumer education should be one of a secondary school students curriculum options.

Basic Assumptions

1. No one with a bachelor's degree in a traditional teaching field can adequately teach the content.
2. There is general agreement the central concepts that are included in the consumer education configuration.

Advantages

1. It will improve the quality of teaching of consumer education.
2. It will legitimize the content as an academically acceptable component of the curriculum.
3. It will satisfactorily resolve the question of "ownership" of the curriculum -- otherwise "ownership" will be established by administrative fiat.

Disadvantages

1. There is no basic ground swell to add the certification possibility; in fact, there is probably greater pressure to reassign existing teachers displaced by decreased school populations -- (cause or effect).
2. The market for teachers is limited, unless consumer education becomes a second endorsement.
3. Unless accreditation bodies and LEA's support certification, the whole question is academic.
4. Competition for credit hours in colleges of education is great.
5. Extensive revision of existing course configurations in colleges and universities is necessary to optimize the learning of students.
6. Development of an adequate philosophical base for consumer education is a complex process.

Let me, if you will, approach the process of a certification option in consumer education as a college professor, (quasi) administrator and former secondary school teacher. I would recommend the following:

Renewable certificates are simply a demonstration by public teachers of an acceptance of responsibility for producing effective instruction for Missouri school children. It seems incomprehensible that given the vast explosion of knowledge in our modern society, a teacher would be able to stay educationally current without some program of professional renewal or development. The best example of this is our developing computer society. It appears that computers will impact every aspect of education and it could be quite necessary for teachers to attain additional knowledge in this expanding area. Curriculum techniques and methods in education are simply not static. Instructional Management Systems is a current educational movement of widespread attention in Missouri. It is quite conceivable that much professional development is necessary in this area.

There is a somewhat valid point that a suggested eight hours of credit or the equivalent might prove a financial hardship for a school teacher. Many teachers are not paid well in Missouri and some people feel that the elimination of the life certificate should be directly tied to demands for increased salaries. At this point in time, this may not be a political or fiscal reality. Nonetheless it is time to increase the professional aspect of teaching by eliminating the life certificate. A directly related financial consideration is the fact that most Missouri district salary scales are based upon seniority and additional college credits. Teachers wishing to advance on the salary scale must pick up college hours.

Eliminating the life certificate simply enhances the profession by promoting updated professional development and may serve to improve the image of the school teacher in the eyes of the Missouri taxpayer.

Following the presentation, a more specific example of consumer education in Oregon was delineated by consumer education teacher Charles Peterson. It establishes a case for certification requirements for Oregon teachers of "personal finance."

THE DEVELOPMENT OF CONSUMER EDUCATION/ECONOMICS IN OREGON

Charles Peterson, Pine Eagle High School,
Halfway, Oregon

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| <p>1968 A statewide advisory committee was appointed by the Board of Education concerning consumer education. This committee developed a "<u>Personal Finance Education Guide</u>," pilot tested, monitored and printed a revised guide.</p> <p>1969 Consumer literacy was identified as one of seven critical areas for high school graduates.</p> <p>1970 A department of education survey of grades 7-12 discovered only 10 percent of the student population (2% male) was enrolled in Consumer education.</p> | <p>1972 The department of education revised high school graduation requirements to include one unit (130 hours of instruction) of credit with minimum competencies related to Personal Finance education to be required for 1978 graduation.</p> <p>1974 A Personal Finance cadre of teachers was selected and trained to provide inservice instruction and assist in developing materials.</p> <p>1975-1976 Pilot testing of minimum standards for elementary and secondary schools, final revisions and adoption by the State Board of Education were completed.</p> <p>1976 A combined endorsement was recommended for certification of teachers of Personal Finance by a group of educators representing most aspects of education.</p> <p>1977 The Teachers' Standards and Practices Commission formed 5 subcommittees to consider certification rule modification based on input to these subcommittees, TSPC did not give an endorsement but did include as a general studies requirement, one hour of credit in Consumer education/economics/personal finance of all prospective teachers.</p> <p>1977 Oregon Association of Consumer Education was formed with membership from business and education.</p> <p>1980 The State Department of Education added Economics as a graduation requirement to be included in Personal Finance effective with the class of 1984.</p> <p>1981 OACE conducted a statewide survey of those teaching Personal Finance in Oregon.</p> <p>A revised Personal Finance Guide was published and distributed.</p> <p>A Personal Finance Test Item bank relating to competencies was created and pilot tested.</p> <p>1983 A Consumer Education/Economics Guide was printed.</p> <p>A request was made to TSPC to require a combined teaching endorsement for teachers of Business Education, Social Studies, Home Economics and Mathematics. This endorsement would require 15 quarter hours (maximum of 6 quarter hours in any of the categories listed below)</p> <ol style="list-style-type: none"> (1) Economics (2) Consumer problems, issues and institutions (3) Personal Finance (4) Consumer Math (5) Methods, materials and resources in Consumer Education |
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1. Endorsement as a second field for four reasons:
 - a. it makes individuals less nervous
 - b. it increases employment opportunities
 - c. it is feasible for student to complete
 - d. as long as certification of teachers is mandatory, teachers can increase their employability with additional endorsements.
2. Development of the endorsement as a conceptualization of teacher competencies rather than a collection of existing courses.

There is general agreement on the concepts which are included in secondary consumer education programs; help is available.

3. Begin the certification at the middle school and/or secondary level. My experience has been that K-12 certification patterns have heavy credit hour requirements. Also, the acceptance of a specialized professional in consumer education will be greater.

On balance, I favor the specific endorsement of consumer education teachers. It would enhance the teaching and ultimately benefit students.