

## Consumer Information Search for Credit Cards: How Much Is Enough?<sup>1</sup>

Using data from the University of Michigan's 1997 Surveys of Consumers, we explore relationships between the amounts and kind of information consumers seek and the number of credit card offers considered. The more features compared, the more products compared. Searching for specific features "narrows the field:" consumers searching for interest rates compared 4 fewer card offers while consumers searching for awards compared 2 fewer cards. Consumers using personal information sources compared more offers.

**Jeanne M. Hogarth, Federal Reserve Board<sup>2</sup>**

**Jeffrey F. Shue, Federal Reserve Board<sup>3</sup>**

**Rebecca Hotynski, University of Wisconsin-Madison<sup>4</sup>**

Consumer and financial educators have spent years teaching consumers to shop and compare. Recent efforts targeted to the "shop and compare" initiative include the Consumer Literacy Consortium's "66 Ways to Save Money" and the Fair Lending Task Force's "Looking for a Mortgage: Shop, Compare, Negotiate." Undergirding these efforts is a body of literature and research on the economics of information, which postulates that consumers will "shop and compare" as long as the expected marginal pay-offs to search exceed or equal the expected marginal costs of search.

However, when consumers are comparing products with different bundles of characteristics, they may quickly fall victim to information-overload. One could think of a "shop and compare" matrix, with different features aligned along the rows and different products aligned in the columns. Comparing four features among four products yields a 16-cell matrix; comparing five features among five products yields a 25-cell matrix, and so on. For consumer educators and policy makers, the natural question that arises is, "how much is enough?" For educators, this question arises out of the desire to have rules of thumb or guidelines -- "always get three estimates" or "always shop four sources." For policy makers, the question arises with respect to consumer disclosures -- for example, is the array of disclosed information in a credit card solicitation or a loan application too much or not enough?

The purpose of this paper is to explore the relationships between the amount and kind of information consumers seek and the number of products considered, using credit cards as an example. First we present a review of previous studies on information search in general and credit search in particular. We then discuss our data and model and present our analysis. Finally, we draw implications for educators, policy makers and researchers.

### Previous Studies

Stigler's (1961) and Ippolito's (1988) work in the field of the economics of information laid the foundation for most of the work that follows today. Researchers have continued to refine the concepts of when consumers search (i.e., search versus experience goods [Nelson, 1970], ongoing versus focused, pre-purchase search [Bloch, Sherrell, & Ridgway, 1986]), the sources of information utilized (Claxton, Fry, & Portis, 1974; Beales et al., 1981), how consumers search (i.e., the differences in search for functional versus expressive goods [Ratchford, 1999]), and the interdependencies and interactions among search activities (Mazis et al., 1981; Moorthy, Ratchford, & Talukdar, 1997).

Previous studies in the area of information search have identified characteristics of consumers that influence the extent of search individuals will undertake (Jang, 1996; MacInnis, Moorman, & Jaworski, 1991). In the field of information processing, a variety of studies have considered the amount and format of information available for consumers in the search process (Russo, 1988) and the placement of information (Lee, 1997).

The concepts of internal and external search have been explored (Schmidt & Spreng, 1993; Bloch, Sherrell & Ridgway, 1986; Jang, 1996). Researchers have looked at product attributes (Lancaster, 1971) and consumers' search for absolute versus relative characteristics (Moorthy et al., 1997; Ratchford, 1999). Lee and Geistfeld (1998) look at trade-offs consumers are willing to make among product characteristics in their exploration of compensatory and non-compensatory decision models.

In credit markets, Chang and Hanna (1992) discussed the costs and benefits of search for credit in general. Lee and Hogarth (1998, 1999) used the 1995 Survey of Consumer Finances to study the relationship between a very macro "extent of search" measure and the APR on credit cards and on mortgages. They found that the more consumers searched, the lower their APR. However, this relationship only held for consumers who revolved balances on their credit cards or who were re-financing their mortgages; also their "extent of search" measure was not specific to searching for a credit card or a mortgage, but was in terms of "when making a major purchase."

Ausubel's 1991 work indicates that consumers may underestimate the benefits to search in the credit arena. He cites a discrepancy between the proportion of consumers who report paying off their bills each month and those carrying balances. His conclusions "... suggest that a sizeable proportion of consumers who borrow on credit cards are unaware of how frequently they do it or, more likely, deny (to themselves and others) that they do it" (Ausubel, 1991, p. 72). Calem and Mester (1995) and Cargill and Wendel (1996) found support for this "irrationality" theory as well as imperfect information in the marketplace as a constraint on consumer information search.

Consumers may find it pays to search on other fees, charges, and "penalty pricing" policies. In fact, fees generate the fastest growing source of income for some credit issuers (Goldwasser, 1999). In sum, there are numerous variables that have been identified as having an impact on extent of search and the types of search activities. They include such demographic variables as education and income level, age, employment status, presence of children, and marital status. Other relevant variables include prior knowledge or experiences, health status, perceived ability to search, and the desire or motivation to search.

## Data and Methodology

### Data

The Surveys of Consumers, conducted by the Survey Research Center at the University of Michigan, measure changes in consumer attitudes and expectations, with respect to the economy. In February and March 1997, the Federal Reserve Board commissioned additional questions on the Surveys of Consumers, including specific questions on consumers' information search behavior when shopping for a credit card. For these surveys 1,001 households were interviewed by telephone; 484 had applied for a credit card in the past 5 years.

### Measures

The following questions were asked to identify consumer's search behavior when shopping for a credit card.

Number of cards considered refers to the number of credit card offers or applications a respondent looked at before deciding where to apply for the credit card. It is a continuous variable and is the dependent variable in this study.

Source of information reflects both quality and quantity of information. Respondents were asked if they used information from banks or other financial institutions; mailings received; advertisements on TV or in newspapers; comparative ratings published in newspapers, or magazines; and/or information from friends or relatives when shopping for a credit card. Each source of information was prompted. Sources were divided into seller-provided, third-party, and personal sources; the number of different sources used (0 to 5) was also included as a measure.

Terms compared. Respondents were asked if they compared interest rates on the outstanding purchase balance and cash advances; grace periods; annual percentage rate (APR); annual fee; other fees, such as late payment fees, cash advance fees, or fees for charging over the credit limit; awards or discounts for using the credit card; and/or any other terms when shopping for a credit card. Each term was prompted. Features were categorized as interest rates, fees, grace period and awards; the number of terms compared (0 to 7) was also included as a measure.

Extent of search. Respondents were asked how much comparison shopping they did when they last applied for a credit card. The response was on 5-level Likert type scale, ranging almost no shopping (1) to a great deal (5).

Credit knowledge. Respondents were asked a quiz question: "When a credit card is described as having an 18.9% APR – that is, an 18.9% annual percentage rate – does that mean that the interest rate is actually 18.9%, or would the interest rate be higher than 18.9% or lower than 18.9%?" Consumers who answered this knowledge question correctly (that the interest rate would be actually 18.9%) are considered to be knowledgeable about credit.

Socio-economic/demographic characteristics. In order to focus on the effects of search, we included measures of education, age, income, gender, race/ethnicity, and marital status in order to hold these characteristics constant.

Probability of applying. Only those who applied for a card were asked about their search behaviors. In order to control for any systematic differences between those who applied for a card and those who did not, we estimated a probit model using the full sample of 1001 respondents to predict the probability of applying. Using the coefficients from this model, we calculated an “expected probability of applying” for each respondent and included this as a control variable in the analysis. Demographic variables that appear in the two models are modified so as to minimize specification errors. We included three measures of experience: whether or not the consumer had recently obtained a mortgage, refinanced a loan, or opened a home equity line of credit. Other attitudinal variables were included as measures of motivation for obtaining credit.

An OLS model of information search was estimated; the dependent variable was the number of credit cards considered and the independent variables were as described above.

## Results and Analysis

Descriptive statistics on our measures are presented in Table 1. At the median, consumers compared 5 features on 4 cards (a 20-cell decision matrix); they obtained information from two sources, primarily from mailings provided by credit card companies. Over half (51.6%) claimed to do “almost no” or “a little” shopping; one-fourth (24.6%) claimed to do “a lot” or “a great deal” of shopping. It is interesting to note that at the median, consumers were working with a 20-cell decision matrix but that, at the median, this was considered only “a little” shopping.

Table 1  
Information Searched

Variables	Mean/Proportion		
Number of Cards Compared		Income	
Mean	5.29	Mean	\$54,126
Median	4	Median	\$39,000
Sources of Information: (Total number of sources considered)		Minority (=1 if nonwhite)	19.1%
Mean	1.77	Gender (=1 if male)	48.2%
Median	2	Education	
Summary of sources of information		Mean (years)	13.4
Any seller-provided information	94.5%	Median	13
Terms Compared: (Total number of terms considered)		Marital status (=1 if married)	57.2%
Mean	4.54	Kids present (1= if kids < = to 18 years old in family)	39.8%
Median	5	Home owner (=1 if own)	67.3%
Summary of terms compared		Mortgage (= 1 if have mortgage)	14.8%
Any interest rate term	90.6%	Home Equity (=1 if have home equity loan)	10.3%
Any fee term	89.0	Re-fi (=1 if re-financed in last 5 years)	12.9%
Overall extent of search for credit card		Expect to be better off in next 12 months (=1)	43.9%
Almost no (1)		Expect rates going up (=1)	59.7%
A little (2)	28.4%	No new debt (=1 if not willing to add debt at present)	79.7%
Moderate (3)	23.2	Better (=1 if feel better off now than 12 months ago)	46.4%
A lot (4)	23.8	Buy now (=1 if willing to make major purchase now)	84.2%
Great deal (5)	12.7	Don't use savings (=1 if not willing to use savings to make a purchase now)	60.5%
Mean “extent of search”	11.9		
	2.5		
Knowledge of APR (% with correct answer)	47.1%		
Estimated probability of applying	.5199		
Age			
Mean	45.3		
Median	42		

Mailings were the most widely used source of information and 95% used some sort of seller-provided information. In fact, it is somewhat surprising that this number isn't 100%, given that information about rates and terms is usually only available from credit providers. Nine out of ten consumers shopped for some type of interest rate and fee feature; about half shopped for awards or discounts.

Less than half (47%) of the respondents correctly identified the relationship between the APR and the "interest rate;" two out of five (43%) thought the APR was less than the interest rate and one in ten thought the APR was greater than the interest rate. This finding may reflect the fact that convenience users (those who pay off their credit card balances each month) may not pay much attention to interest rate information and may not be aware that in open-end credit the APR and the contract interest rate are identical.

The probit model for the probability of applying accurately predicted the probability for the sample. The observed proportion of those applying is .5197; the mean probability of applying (calculated by multiplying the probit coefficients by the individual's value of the variable) is estimated to be .5199. These individual probabilities were used as an independent variable in the information search model. (Details of the first-stage are available from the authors.)

The OLS model for the number of credit card offers considered, conditioned on the probability of applying, is presented in Table 2. Among the sources of information used, only personal sources were significantly associated with the number of credit card offers considered; consumers who consulted friends and family members considered 2 more card offers than those who did not use personal sources. It is interesting to note a negative coefficient on the number of information sources consulted, although this result is not significant.

Table 2  
OLS Regression on Number of Credit Card Offers Considered

Variable	$\beta$	p-value
Intercept	-4.342	.47
Sources of information		
Seller-provided	2.672	.16
Third-party	.505	.67
Personal	2.094	.06
Number of sources used	-.777	.19
Terms compared		
Interest rates	-4.102	.01
Fees	.107	.94
Grace period	.373	.70
Awards	-2.047	.02
Number of terms compared	.686	.10
Extent of search	1.243	.00
Understand APR	.235	.73
Prob (apply)	-.095	.97
Socio-economic/demographic		
Log income	.462	.42
Education (no high school/GED)	3.963	.05
Education (some post high school)	1.655	.05
Age under 35	.042	.98
Age 35 to 65	-.705	.68
Gender (male)	1.441	.04
Married	.521	.50
Minority	-.780	.43

F = 2.67 (significant at .0002)  
R<sup>2</sup> = .15, Adjusted R<sup>2</sup> = .09

Among the terms of the credit cards considered, shopping for interest rates (APR on balances or cash advances) and shopping for awards or rebates were significantly associated with the number of offers considered. Consumers who shopped for interest rates considered 4 fewer cards than those who did not. Consumers who shopped for awards or rebates considered 2 fewer cards than those who did not. Consumers looking for specific awards (e.g., frequent flyer miles on a particular airline) may find a more limited set of cards offering these perks. Overall, consumers who shopped for more terms considered more offers; each additional term was associated with a 0.7 increase in number of card offers considered. There is a positive relationship between the extent of search measure and the number of offers considered; moving from searching "a little" to "a moderate amount" is associated with considering 1.2 more card offers.

Among the socio-economic and demographic variables, education and gender were significantly associated with the number of card offers considered. Consumers with less than a high school education considered about 4 more offers than similar consumers with a high school degree. While this is a *ceteris paribus* comparison, it is possible that consumers with less education may have poorer credit records that require additional search to obtain credit cards with affordable interest rates and terms. Consumers with some post-secondary education also considered more offers than their high-school educated counterparts. Males were likely to compare one more offer than females, *ceteris paribus*.

### Discussion and Conclusions

Using data from the University of Michigan's Surveys of Consumers we focused on the relationships between the amounts and kinds of information consumers used and the number of products considered. In general, the more features consumers compared, the more products they compared. Both the number of terms compared and an overall extent of search measure were positively associated with considering more credit card offers. Searching for specific features resulted in consumers "narrowing the field;" consumers who were searching for interest rates (on revolved balances, cash advances, or the APR in general) compared 4 fewer card offers than consumers not shopping for rates. Consumers searching for awards or discounts considered 2 fewer card offers than consumers not shopping for awards.

Consumers who used personal sources compared more card offers. Third-party and seller-provided information did not affect the number of card offers considered, nor did the absolute number of information sources used. The message seems to be that the quality, not the quantity, of information sources matters in decision making.

Consumers seem to be taking the "shop and compare" message to heart – at the median, consumers compared 5 features on 4 offers, consulting 2 sources of information in the process. However, they only considered this "a little" shopping. Consumer researchers working in the area of information search need to carefully consider their measures of search when evaluating consumer behaviors. The macro measure seems to be underestimating the level of search found in the individual measures, something that researchers should consider when developing surveys and models of consumer behaviors. Multiple measures of search may yield more accurate results than single search measures.

The Fair Credit and Charge Card Disclosure Act (part of the 1988 amendments to the Truth in Lending Act), requires disclosures on the APR for purchases, variable rate information, grace period, method of computing the balance for purchases, annual fees, minimum finance charge, transaction fees for purchases, transaction fees for cash advances, and fees for paying late or exceeding the credit limit – 10 items of information – and other disclosures are required elsewhere in the offer. While our results suggest that consumers do not always use all of this information, it is clear that consumers shop for different sets of features; thus information on a range of features needs to be available.

Consumers who shop for credit cards may not be starting from a zero-credit card point; they may already have a card and want an additional card or to change cards. Experience and internal information may play an important part in determining the features consumers look for, the information sources they use, and, how many products they consider. Although we controlled for other credit experience in our probability of applying model and knowledge in our number of offers model, this data set did not allow us to capture prior experience with credit cards, *per se*.

In a similar vein, we were not able to assess the trade-offs consumers were willing to make among the various features. Consumers who shopped with an "absolute" frame of reference (looking for a card with no annual fee) only need to search through offers until they find that absolute feature. Consumers who shopped with a "relative" frame of reference might be expected to search more to assure themselves that relative feature.

While the focus of this article was an exploration of some of the inter-relationships among search behaviors, it is obvious that search should lead to some optimum choice. However, due to data limitations, we did not measure the quality of the final choice or decision. Thus, although we know that a consumer looked at several different offers and compared annual fees, we do not know if that consumer obtained a card with the lowest (or no) fee. Future studies may be better able to link search behaviors and outcomes.

Consumer educators and counselors should note the overwhelming reliance on seller-provided information and the fact that family and friends were more influential than third-party rating sources in determining the number card offers considered. It may be that consumers need to become more aware of third-party sources of unbiased information – so the first step may be simply raising consumers' awareness of Cooperative Extension, among

others, as an information source. Also, it is likely that the role of the Internet as an information source has continued to grow. It would be helpful in future surveys to ascertain the role of various web sites (both seller-sponsored and third-party) on consumer information search and decision making.

Policy makers also have their work cut out for them. Since, at the micro level, consumers focus on a relatively few features in their decision making, the temptation is to reduce the amount of information consumers need to process. However, at the aggregate level, consumers search across a wide range of features; information on this wide array needs to be available, but in a way that consumers can quickly sort out the information that is relevant to their needs. In fact, the federal disclosures do a good job at allowing people to quickly scan the list of 10 terms and focus on the key features of interest. Policy makers and regulators should continue to balance the need for a range of information against concerns of information overload on the part of consumers and regulatory burden on the part of credit providers.

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Endnotes

1 The analysis and conclusions set forth in this paper represent the work of the authors and do not indicate concurrence of the Federal Reserve Board, the Federal Reserve Banks, or their staff.

2 Program Manager, Consumer Policies, Division of Consumer & Community Affairs

3 Research Assistant, Consumer Policies, Division of Consumer & Community Affairs

4 Graduate Student, LaFollette Institute for Public Affairs