

Shopping for a Credit Card: The Search for Information¹

Using data from the 1997 University of Michigan Survey of Consumers, we investigate consumer's information search pattern when choosing a credit card and, in particular, the potential interdependency among search activities. We find that consumers have diverse patterns of information search, which cannot be captured by a global measure or a few single measures of search, and that there exist strong interdependencies among some search activities.

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American consumers are using credit cards more than ever. Currently, over 6,800 depository institutions issue VISA and MasterCard credit cards and independently set the terms and conditions on their plans (Consumer Reports, 1998; Federal Reserve Board, 1998). Credit card issuers are competing by waiving annual fees, providing enhancements, and since the early 1990s, lowering interest rates. This aggressive competition has resulted in widening the variety of credit card choices for consumers.

However, more choices do not always mean that consumers are better off. Consumer will be able to make a "right" choice only when they evaluate the terms and conditions of different credit card alternatives. In order to help consumer make a more informed credit card choice, Congress passed the Fair Credit and Charge Card Disclosure Act in 1988 (D'astous & Miquelon, 1991; Federal Reserve Board, 1994). This act amended the Truth in Lending Act to expand disclosure requirements for applications and solicitations mailed to consumers for credit cards, thereby making consumers' comparison shopping easier.

Despite the well-acknowledged role of information in assisting consumers' choice of credit cards, our understanding of consumers' information search behavior when choosing a credit card is very limited (Lee & Hogarth, 1998). Addressing this issue, the purpose of this study is to investigate how consumers search for information when choosing a credit card. The insights gained from this analysis will guide us to a more effective way to help consumers engage in search activities in general and to search for credit cards that best fit their needs in particular.

This study also contributes to the literature on information search. The difficulty of measuring consumer's information search behavior has been long acknowledged (Beatty & Smith, 1987; Newman & Staelin, 1972; Newman & Lockman, 1975; Wilkie & Dickson, 1985). Some studies have developed single-items that measure one aspect of search behavior while others use aggregate measures of search. Furthermore, information search activities might be interdependent (Beales et al., 1981; Mazis et al., 1981; Price et al., 1987; Smith, 1993), but little research has been done in examining any potential interdependency. In this study, we will improve our understanding of information search behavior by investigating interdependencies among information search activities.

Literature Review

Consumer Credit Card Shopping Behavior

Numerous researchers have focused on information search behavior. However, there have been few studies of search behavior as it relates to credit cards (Lee & Hogarth, 1998).

Chang and Hanna (1992) discussed the benefits and costs of search for credit (general credit, not specific to credit cards). Immediate benefits include lower interest rates and finance charges, and indirect benefits include better money management, greater savings and convenience from using appropriate credit, and gains in financial knowledge and experience gathered from the search process. The costs of search include the opportunity cost of time (lost wages) and physical and mental efforts spent in the search process they also noted that in today's complex financial market, the cost of information search may be much greater for a money borrower than a goods buyer, because the cost of credit is often not fully or clearly disclosed until the time of application, and because the language is difficult to understand for many consumers. However, in the credit card market, the cost information is fully disclosed at the time of solicitation and the information often comes directly to the consumer rather than the

consumer needing to search for it. The Fair Credit and Charge Card Disclosure Act requires the credit card industry to provide cost information at the time of solicitation. Also, the terms used in open-end credit products such as credit cards are less complicated than those in closed-end products such as mortgage and home equity loans (Lee & Hogarth, 1999). However, due to the complexity of credit card pricing, consumers still need to spend a great deal of cognitive efforts to fully understand the disclosed information.

When searching for a credit card, consumers may not know how much credit they will use in the future at the time of application. Because consumers tend to under-estimate their use of credit and the probability of revolving at the time of application, they under-estimate the benefits of searching (Ausubel, 1991). Also, high-risk consumers may be less willing to engage in search in order to avoid being turned down. Finally, psychological dislike or enjoyment of searches also influence consumers' perception of the benefits and costs of search (Babin, Darden & Griffin, 1994; Holbrook & Hirschman, 1982).

It is important to distinguish between convenience and revolving credit card users since information search patterns may depend on how consumers plan to use their credit cards. Mathews and Slocum (1969, 1970) were among the first who distinguished between convenience and revolving users. Convenience users utilize credit cards mainly as a mode of payment and typically pay their balance in full upon receiving the account statement. Revolvers, on the other hand, use the card principally as a mode of financing and elect to pay interest charges on the unpaid balance. Thus, for revolvers, it is preferable to have a card with a low interest rate, while for convenience users, no annual fee and/or other enhancements such as frequent flyer miles or long distance calling credits be more important than a low interest rate. Given these differences in use, we might expect to see differences in search patterns.

Consumers' Information Search Pattern

Most previous researchers defined information search either explicitly or implicitly as "the degree of attention, perception, and effort directed toward obtaining environmental data or information related to the specific purchase under consideration" (Beatty & Smith, 1987, p. 85). More recently, Schmidt and Spreng (1996) argued that information, which is acquired and is not specifically related to imminent purchases, so called "ongoing search" (Bloch, Sherrell & Ridgway, 1986), should be included in a more comprehensive model of search. The information gathered through ongoing search is stored as internal information in consumer's memory and influences consumer's subsequent "pre-purchase search" (search activities with a specific purchase under consideration). As both Schmidt and Spreng (1996) and Bloch, Sherrell and Ridgway (1986) acknowledged, ongoing and pre-purchase search are conceptually distinct but difficult to separate in practice.

Information search behavior can be also distinguished into internal and external information search (Beales et al., 1981; Moore & Lehmann, 1980). Internal information search refers to consumer's retrieval of memory that stores accumulated knowledge from previous search, experience with products, or passively acquired information during normal daily activities (Archibald, Haulman & Moody, 1983; Beales et al., 1981; Punj & Staelin, 1983). External information search behavior includes consulting with friends, family, expert consumers, salespersons, and third-party experts; reading books, magazine articles, consumer-ratings, and advertising, direct inspection, and so on. In this study, we will focus on pre-purchase, external search behavior when choosing a credit card.

Many previous researchers reported that information search is difficult to quantify (Beatty & Smith, 1987; Newman and Staelin, 1972; Newman & Lockman, 1975; Wilkie & Dickson, 1985). Over the last three decades, hundreds of articles have been published and numerous measures of search have been used, including both a single aspect of search behavior and aggregate measures of search extent. While several researchers used multiple measures in their study, most researchers employed only one or two measures, failing to capture all the aspects of information search. When only a few measures are employed, many other aspects of information search are ignored. Given that the interdependencies among different information search activities are not known, a full understanding of consumer's information search behavior cannot be obtained from the observation of a limited number of information search measures. Consequently, if conflicting results are obtained, we do not know if the discrepancy is due to different measures or to different behaviors.

Furthermore, information search activities might be interdependent (e.g. searching information from third party sources might make consumers less likely to obtain information from advertisements). In fact, several researchers have already suggested that there is a need to consider the interrelationships among various information sources in designing information programs (Beals et al., 1981; Mazis et al., 1981; Price et al., 1987). Smith (1993) suggested that advertising could influence how consumers interpret other product-related information. More

broadly, information previously acquired in external search is likely to influence additional search activities and how consumers interpret the information from that search.

Addressing this issue, we will examine interdependency of information search activities as well as single and composite measures of information search. Specifically, we will investigate the following two research questions:

- How do consumers search for information when choosing a credit card?
- Are there any interdependencies among information search behaviors?

Methods

Data

We employed the 1997 Surveys of Consumers collected by the Survey Research Center at the University of Michigan. 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. Among those, only the respondents who applied for a credit card during the past five years are included in the analysis (N = 484).

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 a credit. It is a continuous variable.

Source of Information reflects where a respondent obtained information. The respondents were asked which of the following sources of information they used when shopping for a credit card. Each source of information was prompted: banks or other financial institutions; mailings received; advertisements on TV or in newspapers; comparative ratings published in newspapers, or magazines; information from friends or relatives. A set of binary variables was created to indicate whether or not each of the above particular source of information was used when shopping (1=used, 0=didn't use).

Number of Information Sources Consulted is then constructed by counting the number of the above information sources used.

Terms Compared. Respondents were asked what terms they compared when shopping for a credit card. Each credit card term was prompted: interest rate on the outstanding purchase balance; grace period before interest is charged on new purchases; interest rate for cash advance; annual percentage rate; annual fees; 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 other terms. A set of binary variables was created to indicated whether or not each of the above terms was compared when shopping (1=compared, 0=didn't compare).

Number of Terms Compared is then constructed by counting the number of the above terms compared.

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

Analysis

To identify consumer's credit card search behavior, we conducted descriptive analysis, utilizing all the information search measures introduced. Then, the interdependency of information search activities was investigated as follows. First, consumer's use of information sources was investigated using a log-linear model. Log-linear models treat all variables as response variables and are most appropriate when the focus is on statistical independence and dependence among variables. We performed a log-linear model analysis using the SAS CATMOD (Categorical Data Modeling) procedure. The CATMOD procedure allows the examination of interactions, and the likelihood ratio indicates the goodness of fit of the tested model. In performing the log-linear model analysis, we began with the most complex interaction model that incorporates all the possible interaction terms and iterated to find the model with the best fit by eliminating insignificant interaction terms. Second, interdependencies among the terms of credit cards that consumers compared were examined, also using a log-linear model. Finally the interdependency among the composite measures (number of cards examined, number of sources consulted, number of terms compared, and perceived extent of search) was examined using correlation analysis.

Findings⁴

Information Searched

Consumers' information search behaviors varied a great deal. While 20% of consumers examined only one credit card, 17.5% of them compared eight or more cards. The mean and median number of cards compared were 5.29 and 4, respectively.

An average consumer obtained information from only one source (1.4 sources, on average), and direct mailings were the most popular source of their information. Three-fifths (59.7%) of the respondents received direct mailings; about one-third (30%) obtained information from financial institutions and about one in six (18%) obtained information from friends or relatives. Comparative ratings from third party information providers were the least popular -- only 14% of respondents obtained information from comparative ratings.

Regarding specific terms compared, about two-thirds of consumers compared the interest rate on outstanding balances, APRs and annual fees; it is interesting to note that APRs and annual fees are the ones that marketers frequently advertise. Less than half of consumers compared grace periods. About one-third examined interest rate for cash advance, other fees, and awards or discounts. The mean and median number of terms considered are 4.56 and 5, respectively.

Over half (51.6%) claimed to do almost no searching or only a little searching; about one-fourth (23.8%) did a moderate amount of searching and about one-fourth claimed to do a lot or a great deal of searching. However, the median number of cards compared was 4, and the median number of terms compared was 5. It is evident that consumers consider this a "little" or "moderate" amount; but at the median this requires consumers to process 20 pieces of information (5 features of 4 cards).

Interdependency of Information Search

Sources of Information. The results of the log-linear model through the iterative analysis process suggest a robust four-way interaction among obtaining information from banks, mailings, advertisements, and family, and a robust three-way interaction among banks, advertisements, and comparative ratings. There were two other significant three-way interactions (between banks, mailing, and family; and between banks, advertisements, and family), but these interactions were subsumed in the significant four-way interaction. Therefore, the effects of the four-way and three-way "stand alone" interactions are highlighted.

Consumers who used all three seller provided information (banks, advertisements, and mailings), also tended to obtain information from friends and family members. Conversely, if consumers did not use any seller-provided information (no information from banks, ads, nor mailings), they tended not to obtain information from friends and family members. When consumers used information from *either* banks or advertisements, but not from both, using information from mail solicitations discouraged their use of information provided by personal sources.

The three-way interaction among obtaining information from banks, advertisements, and ratings can be illustrated as follows. For those who used third-party rating information, the use of information from banks and advertisements are positively associated. Consumers who used ads also tended to use banks, while those who didn't use ads tended not to use bank information. Consumers who did not use third-party rating information tended to use advertisements independent of using bank-provided information, although the likelihood of using ads was greater for those who didn't use bank provided information.

Terms Compared. The log-linear model suggests following interactions: a three-way interaction among grace period, other fees, and awards; four two-way interactions -- interest rate for outstanding balances and APR; APR and annual fees; interest rate for outstanding balances and other fees; and annual fees and other fees. Specifically, among those who compared grace periods, those who compared awards also tended to compare other fees. Among those who *did not* compare grace periods, those who did not compare awards were more likely not to compare other fees.

The two-way interaction between interest rates paid on balances and APR showed that those who compared interest rates for outstanding balances also tended to compare APRs, and vice-versa. The two-way interaction between other fees and interest rates paid on balances indicated that if consumers compared other fees, they also tended to compare interest rates for outstanding balances. However, not comparing other fees did not influence whether or not a consumer compared interest rates for balances. The two-way interaction between APR and annual fees showed that comparing APRs and annual fees was significantly and positively associated; those who compared APRs also tended to compare annual fees, and vice versa. The two-way interaction of other fees and

annual fees indicated that if consumers compared other fees, they also tended to compare annual fees, but not comparing other fees did not influence whether or not they compared annual fees.

Composite Measures of Search. We conducted correlation analysis among number of cards considered, number of sources consulted, number of terms compared, and perceived extent of search. Although all the search measures were significantly correlated, the magnitudes of correlation coefficients are not great. For example, the correlation coefficient between number of terms and number of cards considered is only 0.14, suggesting that these are two different dimensions of search. Similarly, the correlation among number of cards considered, number of sources consulted, and number of terms compared were all less than 0.30. Although the correlation coefficients between the perceived extent of search and these other measures are around 0.40, this finding indicates the limitation of employing a single measure for consumer search and the importance of measuring different dimensions of search behavior.

Discussion, Conclusions, and Implications

The emphasis in this paper has been to identify consumers' information search patterns and to explore the interdependencies in measures of search as a basis for providing recommendations for public policy and consumer education.

How do consumers search for information when choosing a credit card? On average, consumers consulted 1.4 sources of information before applying, and most of these sources were seller-provided (mailings, information from the financial institution). They considered between four and five features, most commonly interest rates (either on purchases, for cash advances, or the APR), and annual fees; nearly half compared the grace period on the card. Consumers considered between 4 and 5 cards, although one out of five only looked at one offer before applying. According to consumers' self-reported global measure, their average "overall extent of search" was 2.54 out of 5-level ordinal scale. Yet at the median, consumers compared four alternative credit cards and five features of each card -- processing a 20-cell "grid" of information before applying for a credit card.

Are there any interdependencies among information search behaviors? The results suggest that there are significant interdependencies among the information sources used as well as among the features compared in the search process. For credit cards in particular, the findings show a strong influence of the use of personal information sources on the use of seller-provided sources; there is also some interdependence among seller-provided information and use of third-party ratings. Among the terms compared, there appears to be interdependency among grace period, fees, and awards; some aspects of interest rates and fees also appear to be interdependent. The correlations found among the composite measures of search (number of cards considered, number of information sources consulted, number of terms compared, and assessment of the extent of search) suggest that these are positively associated with each other. However, the correlation coefficients are low and imply that these measure different aspects of search, revealing the limitations of using a single measure of search.

Consumer educators can use information in this study to help consumers refine their search techniques. The results with respect to the use of third-party ratings as information sources should be of special interest to educators: consumers who used third party ratings and who didn't use bank-provided information, also tended not to use advertising -- in other words, they seemed to distance themselves from seller-provided information.

The results also suggest that some consumers do not shop as extensively for some features as for others. It may be that consumers don't expect to draw upon some of these features (for example, the interest rate on cash advances, late fees, or over-the-limit fees). Educators can draw consumers' attention to these "less-searched-for" features and help them understand the consequences of some of these features. For example, a late payment may trigger not only a late fee but also an increase in the APR on purchases.

Policy makers may be interested in the interaction among the features that consumers compared. When deciding what terms and conditions to include in mandatory disclosures, it may be useful to know, for example, that consumers who compare interest rates or APRs are likely to also compare annual fees, but are less likely to compare grace period. Thus, it may be better to require disclosure of a feature consumers are not going to actively seek out on their own (yet, important) rather than one that they will "always" look for.

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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.
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- ⁴ Due to space constraints, we are unable to present all tables and graphs. For full results with tables and graphs, see this article in the Journal of Consumer Affairs, forthcoming.