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Consumers' Use of Information Intermediaries and the Impact on Their Information Search Behavior in the Financial Market

An information intermediary is a human or a nonhuman party designed to assist consumers in information processing. The current study identifies factors determining the likelihood of using human information intermediaries and the effects of using information intermediaries on the amount and the pattern of overall information search. The proposed model is built based on a value-intention framework and tested in the context of financial investment decisions. The results indicate that a low level of perceived expertise in financial management, a large amount of total financial assets, and a high opportunity cost of time enhance the perceived value of information intermediaries, thus increasing the likelihood of using information intermediaries. We also find that the use of information intermediaries is positively associated with the overall extent of information search and influences the likelihood of using other information sources.

Today's consumers are bombarded by information. Advances in technology have made the production, retrieval, and distribution of information much easier, faster, and cheaper than ever before (Johnson 2001). The explosion of information has shifted many decision-making situations from being information scarce (so that having more information is an advantage) to being information saturated (thus creating a great need to filter it out), which Shenk (1997) refers to as "data smog."

This situation has generated the problem of information overload for many consumers (Gifford 2001). Even if consumers are not intimidated by vast amounts of information, they still need to decide how to distribute their limited attention across a variety of information sources. In this process, it is often necessary for consumers to allocate their cognitive capacity to processing irrelevant, unclear, and inaccurate data in order to find the needed information. The oversupply of information thus adds more stresses

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and burdens to consumers' information processing, frequently causing psychological anxiety and tension, reduced attention span, difficulties in memorizing and remembering, and poor decision making (Waddington 2003). Consumer educators and policy makers have increasingly recognized the problems caused by information overload and have identified enhancing information literacy (i.e., consumers' ability to identify, locate, understand, evaluate, and use information effectively to solve a given problem) as one of the goals for restructuring public education (Brock 1994; Caissey 1990).

Information overload is also a problem for businesses since data smog makes it harder to draw the attention of potential customers and to encode messages in their memories (Varian 1998). It becomes vital for many businesses to attract consumers' attention and encourage them to make decisions based on the information provided by one's firm (Ariely 2000; Gifford 2001; MacKie-Mason and Varian 1996). Offering information intermediaries has been suggested as one way to help consumers cope with problems caused by information overload.

The term "information intermediary" refers to a human or a nonhuman party designed to assist consumers in information processing. Rose (1999), in particular, defines it as an economic agent supporting the production, exchange, and use of information in order to increase the value of the information for its end user or to reduce the cost of information acquisition. Examples of information intermediaries can include various types of search engines on the Internet, librarians, travel agents, insurance agents, financial advisors, and many others whose role is to reduce the time and effort consumers spend on information acquisition and processing. Consumers' reliance on information intermediaries for their decision making has been increasingly noticeable in recent years (Rappa 2003).

Despite the important role information intermediaries plays in the current information-drenched decision environment, little attention has been paid to understanding consumers' use of information intermediaries, particularly those involving direct human interactions. Although the Internet search engines and comparison-shopping sites may be the best-known information intermediaries (Caillaud and Jullien 2001; Waldfogel and Chen 2003), consumers often rely on personal sources to sort and integrate information as well (Barrett and Maglio 1999). In fact, for decisions involving high degrees of uncertainty and importance, consumers prefer human sources for information acquisition/integration to nonhuman sources (Coleman, Warren, and Huston 1995).

The main objective of this study is to advance the understanding of consumers' use of human information intermediaries. Specifically, this study identifies the factors that increase the likelihood of consumers' using

information intermediaries and evaluates their effects on consumers' reliance on other information sources. The proposed model is examined in the context of financial investment decisions, using the 2000/2001 MacroMonitor data set. An investment decision is suitable for testing our constructs since it often requires consumers to deal with not only large amounts of information but also difficulties in comprehending and integrating information due to its technical nature. Investments also present a decision context where consumers' reliance on human interactions (as opposed to nonhuman sources) in information acquisition is evident (Murray 1991).

CONCEPTUAL BACKGROUND

Information Intermediaries

Intermediaries in the marketplace, in general, refer to entities that facilitate relationships between buyers and sellers. They can be divided into two broad categories: transaction intermediary and information intermediary (Rose 1999). A transaction intermediary is the one that generates and/or completes transaction activities on behalf of transacting parties, such as auctioneers, purchasing agents, and import/export brokers. An information intermediary, on the other hand, indicates the entity whose main function is to facilitate the exchange of information between buyers and sellers by creating and integrating information for, and/or delivering information to, buyers and prospective buyers (Brock 1994; Caillaud and Jullien 2001). While transaction activities and information provision are distinct and independent functions, there exist intermediaries providing both functions (e.g., Realtors, investment brokers). Although transaction intermediaries play an important role in buyer–seller relationships (particularly in business-to-business relationships), our focus is on information intermediaries whose presence is more pronounced in the consumer market as a mechanism to assist consumers' decision making.

Recently, the information intermediary has been discussed in the context of the Internet as an information gathering and sorting tool (Caillaud and Jullien 2001; Waldfogel and Chen 2003). Hagel and Singer (1999) and Alba et al. (1997), for instance, delineated several roles for information intermediaries in the Internet environment: identifying and collecting useful information, filtering out information that end users do not want to see, and restricting how Web sites gather and use private information from end consumers. The information intermediary, however, is present in the traditional economy long before the advent of the Internet. Examples of such intermediaries may include Consumer Reports, J.D. Power, certification

organizations such as Underwriters Laboratories, and financial advisors at investment companies (Barrett and Maglio 1999). Just like online intermediaries, these entities can lower the costs of a search, increase the search's comprehensiveness, and align the search process with the interests of the consumer (Diehl, Kornish, and Lynch 2003).

A Value-Intention Framework

Our first research question is to identify factors that affect consumers' likelihood of using information intermediaries. We employ a value-intention framework as a conceptual base to this inquiry. The value-intention framework assumes that consumers' willingness to perform a certain behavior is a direct function of perceived value of the behavioral consequences (Dodds, Monroe, and Grewal 1991; Zeithaml 1988). One assesses perceived value based on the net gain of utility between what benefits are received and what costs are incurred by performing the behavior; this assessment can vary greatly from one individual to another, even when evaluating the same consequences associated with the behavior (Zeithaml 1988). The greater the value an individual perceives, the more likely the individual will perform the behavior. The role of value in determining consumers' intention/willingness has been well supported in many different behavioral domains, ranging from purchasing intentions to relationship commitment (e.g., Sirdeshmukh, Singh, and Sabol 2002; Woodruff 1997). Our key proposition, therefore, is that consumers' likelihood of using information intermediaries is determined by their perceived value of using information intermediaries.

H1: The greater the perceived value of using information intermediaries is, the more likely it is that consumers will use information intermediaries.

Varian (1998) and Womak (2002) recognize the differences in the price of information intermediaries and explain such differences by business structure. Information intermediaries may generate revenue from sellers in the form of exclusive contractual arrangements or advertising revenues, while others receive fees and commissions from buyers. These differences determine whether the service is provided for free or on a fee based. In examining the likelihood of using information intermediaries, we differentiate using fee-based intermediaries from using free ones since the former is the behavior entailing higher costs than the latter. The perceived value of using information intermediaries is thus expected to be greater for those who use fee-based ones than for those who use free ones.

In summary, the key benefit of using information intermediaries is to increase the efficiency of processing information relevant to decision making. In particular, those offering expert human interactions can provide comprehensive and customized assistance in information searches, going beyond gathering and sorting information to include such aspects as modifying decision strategies and even making final decisions for consumers (Brock 1994). Its use, however, can entail some costs in the form of fees as well as extra time and effort to find and consult with information intermediaries. Consumers will see the value of using information intermediaries only when they perceive that the benefits exceed the costs, and this evaluation is significantly affected by individual characteristics (Zeithaml 1988).

Specific individual characteristics that influence the perceived value of a behavior differ depending on the nature of the behavior and the decision contexts. Characteristics particularly relevant in assessing the value of information intermediaries include risk propensity, perceived expertise, and the opportunity cost of time (Dulebohn 2002; Mitra, Reiss, and Capella 1999; Srinivasan and Ratchford 1991). In addition, we anticipate that the total amount of the investment will influence the perceived value of information intermediaries. Some other demographics are also included as control variables since they have been found to influence consumers' use of information sources in previous studies (Bertaut and Starr-McCluer 2000; Chiteji and Stafford 1999; Cho and Lee 2004).

First, risk propensity, or risk tolerance as it is often called in the context of investments, refers to consumers' willingness to take a risk in an attempt to obtaining better outcomes (risk prone) or, conversely, consumers' desire to avoid risk in an attempt to obtain safer outcomes (risk averse) (Sitkin and Pablo 1992). Risk propensity can play a significant role in the perceived value of using information intermediaries since it affects the amount and the manner in which consumers search for information (Cho and Lee 2004). Consumers often use information searches as a way to cope with perceived risk. To reduce uncertainty associated with decision making, in particular, they engage in a large amount of information searches (Coleman, Warren, and Huston 1995). Given that risk-averse consumers are more motivated to minimize risk than risk-prone consumers, the former will likely undertake a larger amount of information searches than the latter. As the amount of information gathered increases, however, so does information overload. We thus expect that risk-averse consumers will perceive a higher value for using information intermediaries than risk-prone consumers.

H2: The more risk-averse a consumer is on financial matters, the higher the perceived value of using information intermediaries will be.

Second, perceived expertise refers to individuals' evaluations of their ability to gather, process, and synthesize the decision-relevant information on their own. Individuals with high perceived expertise will see themselves as being more able to analyze, process, and integrate relevant information than those with low perceived expertise (Dulebohn 2002; Raghunathan and Pham 1999). As their perceived expertise in financial matters increases, therefore, consumers will assign less value to using information intermediaries. We thus formulate the following hypothesis.

H3: The higher the perceived expertise in financial matters is, the lower the perceived value of using an information intermediary will be.

Third, the opportunity cost of time indicates the expected utility of an alternative use of the time spent in searching for information as measured by an individual's marginal wage (Feick, Herrmann, and Warland 1986). The greater the consumers' opportunity cost of time, the greater the benefits of using an information intermediary relative to its costs. Since it is difficult to estimate the marginal wage, income has often been used as a proxy for the opportunity cost of time: higher income is generally associated with a higher wage rate. Given that one key function of an information intermediary is to save time in information searching and processing, we posit that income is positively related to the perceived benefit of information intermediaries. Another factor that could determine the opportunity cost of time is the presence of children. Households with children tend to be more time deprived than those without children. It is therefore expected that the use of information intermediaries will be more valued by households with children than those without.

H4-1: The higher a consumer's income is, the higher the perceived value of using an information intermediary will be.
H4-2: The presence of children in the household will increase the perceived value of using an information intermediary.

Last, we expect that the total amount of the investment is associated with the perceived value of information intermediaries. Specifically, we predict that the amount of assets already invested in the financial market will be positively associated with the perceived value of using information intermediaries. The higher the consumer's stake in financial assets, the more significant the consequences of a poor decision will be. As a way to cope with this vulnerability, consumers will engage in extensive

information searches (Schmidt and Spreng 1996). Further, to avoid potentially devastating financial outcomes associated with a poor decision, consumers will be motivated to obtain expert opinions (Murray 1991). As financial assets increase, therefore, consumers are more likely to use information intermediaries offering human interactions.

H5: As the amount of financial assets increases, the higher the perceived value of using information intermediaries will be.

The Relationship Between Information Intermediary Usage and Information Searches

This study also examines the consequences of using information intermediaries in overall search efforts and their impact on the use of other information sources. While consumers' reliance on one information source appears to be related to their use of other sources (Lee and Hogarth 2000a, 2000b; Ratchford, Talukdar, and Lee 2001), the direction of this relationship is not clear. Lee and Hogarth (2000a, 2000b), for instance, reported positive interactions between the use of different information sources, indicating that the use of one information source increases the use of another. On the contrary, Ratchford, Talukdar, and Lee (2001) reported that the use of one information source (specifically the Internet) reduced consumers' overall search time and time spent with other information sources.

It could be predicted that when consumers use information intermediaries, they feel less need to consult other information sources for decision making. Most consumers are cognitive misers, attempting to economize on the cognitive effort required to obtain information. If a certain source is perceived to provide relevant and valuable information, consumers will rely on that source rather than seeking out others (Locander and Hermann 1979). Consumers' use of information intermediaries potentially reduces the number of alternative information sources they consult, thus reducing the overall extent of information searches.

On the other hand, one can argue that the use of information intermediaries will increase the extent of information searches consumers will undertake. Information intermediaries can enhance the efficiency of information processing by sorting out and integrating relevant information, thus leaving more time and effort for consumers to seek out information from other sources. Information intermediaries can in fact assist consumers in identifying information sources for additional information acquisitions, thus expanding the extent of consumers' overall searches.

In short, although these studies support the interdependence of the use of information intermediaries and the use of alternative information sources, they do not agree on the direction of the relationship. We thus postulate the following nondirectional hypothesis predicting a significant influence of the use of information intermediaries on the overall extent of information searches and leave the nature (i.e., positive or negative) of this effect to be empirically identified.

H6: The use of information intermediaries has a significant effect on the overall extent of information searches for investment decisions.

METHODS

Data

We test our constructs using the 2000/2001 MacroMonitor data set, which is a biennial survey conducted by the Consumer Finance Decision section of SRI Consulting Corporation. It focuses on retail financial services and collets information about consumers' attitudes, behaviors, and motivations as related to financial services. More details about the data set can be found at http://future.sri.com/CFD/CFDMM2K-what.shtml.

Participating in the survey were 3,759 households selected using two-stage random sampling to be representative of the U.S. population. The first stage is stratified, disproportionate random sampling. The stratification variables are whether the household's annual income exceeds $100,000 per year and whether the household's total assets excluding the primary residence exceed $500,000. The purpose of this disproportionate sampling is to provide a large sample of affluent households; sample weights are provided to obtain representativeness for the U.S. population. The second step is simple random sampling, specifically random digit dialing. Of the households who agreed to participate via telephone calls, 49% returned questionnaires. More details about the sampling methodology can be found at http://future.sri.com/CFD/CFDMM2K-collect.shtml.

Measurement

Perceived Value of Information Intermediaries

Perceived value of using information intermediaries is measured by a set of three items. A 4-point Likert scale was used, and specific questions asked

are presented in Table 1. The factor score of the perceived value of information intermediaries is included in the multivariate analyses; the Cronbach's alpha for the perceived value items is 0.5782.

The Likelihood of Using Information Intermediaries

This variable is operationalized as a categorical variable in terms of whether consumers used information intermediaries and, if so, whether they paid for the service. Information intermediaries include financial advisors, counselors, and other professionals whose main role is to provide investment information and financial consultations. We distinguish between paid and free information intermediaries, for consumers may assign different value to each (the data, however, do not indicate specific amount of fees paid for the information intermediary's service). Specific categories in the dependent variable are as follows: 1 = used PAID information/advice, alone or in combination with free information/advice, from information intermediaries; 2 = used only free information/advice from information intermediaries; 0 = did not use information intermediaries.

Risk Propensity and Perceived Expertise

Risk propensity measures the extent to which respondents are willing to take a risk to obtain a better return. A total of five items measuring this aspect were employed, each of which used a 4-point Likert scale. To assess consumers' perceived expertise in financial investments, a total of four items were used to measure the extent to which respondents saw themselves as being knowledgeable and able to manage their own financial matters. Specific questions for both risk propensity and perceived expertise are presented in Table 1. The factor scores for risk propensity and perceived expertise are included in the multivariate analyses, and their Cronbach's alpha values are 0.7302 and 0.6739, respectively.

Overall Search Extent and Alternative Information Sources

As in many previous studies (Duncan and Olshavsky 1982; Srinivasan and Ratchford 1991), we used the total number of external information sources consulted as a proxy for overall search extent. For alternative information sources to information intermediaries, we included literature (e.g., books, magazines, and brochures from financial institutions), the media, family and friends, and the Internet.

TABLE 1
A Summary Description of Variables

Variable	Description
Value and use of information intermediaries	
	The following questions were asked, and the responses were coded on a 4-point Likert scale ranging from "mostly agree (1)" to "mostly disagree (4)"
Perceived value of information intermediaries	"I don't need advice on investment options" (reverse coded); "I need help selecting savings and investment products that are best suited to meet my financial goals"; "I would be willing to pay for professional financial advice"
Use of information intermediaries	A categorical variable: 0 = did not use information intermediary; 1 = used information intermediary in making financial decision, including brokers, financial advisors, counselors, and/or other professionals and paid for information/ advice; 2 = used free information/advice from information intermediary
Potential determinants of information search	
	The following questions were asked, and the responses were coded on a 4-point Likert scale ranging from "mostly agree (1)" to "mostly disagree (4)"
Perceived expertise	"My household knows how to choose the financial products and services that are best for us" (reverse coded); "I do a very good job of keeping my financial affairs in order" (reverse coded); "Often I'm not sure whether the financial decisions I've made are the right ones"; "I feel qualified to make my own investment decisions" (reverse coded)
Risk propensity	"It is very important to me to have both a guaranteed interest rate and federal insurance on my savings"; "I am willing to accept some risk of losing money if an investment is likely to come out ahead of inflation in the long run" (reverse coded); "It is wise to put some portion of savings in uninsured investments to get a high yield" (reverse coded); "I am willing to take substantial risks to realize substantial financial gains from investments" (reverse coded); "The stock market is too risky for me"
Opportunity costs	
Income	A continuous variable: total household income before tax in 1999
Presence of young children	A binary variable: 1 = with dependent children (age 6 or younger), 0 = without dependent children

TABLE 1 (*Continued*)

Variable	Description
Total financial assets	A continuous variable: the total dollar amount of financial assets of the household, including checking and savings accounts, certificates of deposit, U.S. savings bonds, money market deposit accounts, money market and stock/bond mutual funds, publicly traded and nontraded stock, corporate/municipal bonds, unit investment trusts, zero coupon bonds, treasury bills/bonds, and closed-end funds
Demographics	
Age	A continuous variable
Education	A categorical variable: less than high school, high school, some college, and bachelor's degree or more
Household composition	A categorical variable: single female head of household, single male head of household, and married couple or living with partner
Overall and specific information search measures	
Overall search extent	A continuous variable: the total number of external information sources consulted
Use of literature	A binary variable: 1 = searched literature (i.e., books, consumer magazines, other magazines, newspaper articles, financial newsletters, and brochures/written materials); 0 = did not search literature
Use of media	A binary variable: 1 = used the media (i.e., radio programs, broadcast/educational/cable TV programs, radio/TV advertisements, daily/financial newspaper and magazine advertisements); 0 = did not use the media
Use of Internet	A binary variable: 1 = searched for information via the Internet; 0 = did not search information via the Internet
Use of family and friends	A binary variable: 1 = obtained information from family and/or friends; 0 = did not obtain information from family and/or friends

Opportunity Costs and Total Financial Assets

As indicated, income and the presence of children in the household were used as proxies for the opportunity cost of time for a given consumer. Total financial assets were measured by the total dollar amount invested in the financial market. Due to the high correlation coefficient between income and total financial assets (0.5485, $p < .0001$), we include them as categorical variables.

Control Variables: Demographics

We include age, education, and household composition as control variables. Age is a continuous variable, whereas education and household compositions are categorical variables. Category definitions are presented in Table 1.

Data Analysis

The main data analysis comprises three parts. First, we employ ordinary least square (OLS) analysis to examine how consumers' perceived value of information intermediaries is affected by risk propensity, perceived expertise, opportunity costs, and the total amount invested in financial assets, with age, education, and household structure as control variables.

Second, we use multinomial logit analysis to examine consumers' use of information intermediaries, differentiating paid services from free information and advice. Specifically, we estimate the following two general logits:

$\ln(P_1/P_3)$ = probability of using PAID advice, alone or in combination with free advice, from an information intermediary over not using any information intermediary

$\ln(P_2/P_3)$ = probability of using only FREE advice from an information intermediary over not using any information intermediary

In these equations, the perceived value of using information intermediaries is included as a main explanatory variable, with perceived expertise, risk propensity, and all demographics as control variables.

Last, we conduct OLS and logistic analysis to examine how the use of information intermediaries influences consumers' information searches. We examine the impact of the use of information intermediaries on the overall search extent, using OLS, and examine the effect of using information intermediaries on specific types of other information sources (e.g., literature, the media, family/friends, and the Internet), using logistic regression analyses. In both analyses, we include the use of information intermediaries as the main independent variable with the following control variables: the use of other information sources, risk propensity, total financial assets, perceived expertise, opportunity costs, and demographics.

FINDINGS

Descriptive statistics for perceived value and use of information intermediary variables are presented in Table 2, and the results of the OLS

TABLE 2
Descriptive Statistics of Perceived Value and Use of Information Intermediaries (N = 3,759)

Perceived value of information/advice	**Percent distribution (%)**
I don't need advice on investment options	
Mostly agree	7.41
Agree	16.41
Disagree	47.64
Mostly disagree	28.54
I need help selecting savings and investment products that are best suited to meet my financial goals	
Mostly agree	24.16
Agree	42.95
Disagree	20.56
Mostly disagree	12.32
I would be willing to pay for professional financial advice	
Mostly agree	8.66
Agree	32.52
Disagree	32.64
Mostly disagree	26.18
Use of information intermediary[a]	**Percent who used (%)**
Independent financial planner/consultant	8.98
Bank, S&L, and/or credit union officer/investment advisor	13.71
Full-service or discount stockbroker	10.29
Mutual fund company investment advisor	5.54
Accountant/CPA	6.22
Private banker/trust officer	1.16
Other[b]	16.61
Any of the above	41.47
Paid information intermediary for information/advice	**Percent who paid among those who used information intermediary (N = 2,150) (%)**
Flat fixed fee	16.89
Percent of assets	8.31
Commission	15.98
Other	3.09
No charge	48.11
Don't know[c]	13.93

[a]There are some missing responses: 594 respondents who reported the use of information intermediaries did not specify the type of information intermediary they used.
[b]Others include lawyers, insurance agents, real estate agents, and other unspecified advisors.
[c]Among 297 respondents who said "don't know," 231 reported to use independent financial planner/consultant, full-service or discount stockbroker, mutual fund company investment advisor, accountant, private banker, or trust officer, and are therefore identified as "paid for advice," while 66 respondents who did not report to use these professionals are identified as "not paid for advice." As a result, those who paid for information intermediaries are 1,057, those who used only free information intermediaries are 1,093, and 1,609 did not use information intermediaries.

TABLE 3
Results of OLS Analysis: Determinants of Perceived Value of Information Intermediaries (N = 3,759)

Independent Variable	Parameter Estimates	*p* Value
Intercept	0.0641	.1802
Perceived expertise	−0.3959	<.0001
Risk propensity	−0.0223	.2394
Opportunity costs		
Income		
Less than $20,000	−0.1706	.0448
$20,000–$39,999	−0.0128	.8474
$40,000–$59,999	0.0050	.9309
$60,000–$99,999	0.0011	.9811
$100,000 or more (base)		
Presence of young children	−0.0771	.1255
Absence (base)		
Total financial assets		
Less than $5,000	−0.2270	.0015
$5,000–$19,999	−0.1013	.1258
$20,000–$59,999	−0.2035	.0004
$60,000–$99,999	−0.1600	.0118
$100,000 or more (base)		
Demographics		
Age		
18–34	0.2961	<.0001
35–49	0.0608	.2375
50–64	0.0040	.9344
65 or older (base)		
Education		
Less than high school	−0.1849	.0218
High school	−0.0537	.3342
Some college	0.0005	.9895
Bachelor's degree or more (base)		
Household composition		
Single male	0.0140	.8160
Single female	0.0599	.2274
Married/partner (base)		
***F* value**	33.26	<.0001
df	19	
R^2	0.1632	
Adjusted R^2	0.1582	

analysis of the perceived value of information intermediaries are presented in Table 3. The estimated model showed a good fit ($F = 33.26, p < .0001$), explaining about 16% of total variance. First, the results indicate that risk propensity does not have a significant effect on perceived value, thus rejecting H2. Second, perceived expertise is found to have a significant and negative influence on the perceived value of information intermediaries, supporting H3. Third, income is positively related to the perceived value

of information intermediaries, although statistical significance is found only when the group with less than $20,000 in income is compared to the group with more than $100,000. The presence of young children (as another proxy of opportunity cost), on the other hand, has no significant effect on the perceived value of information intermediaries. These findings provide a partial support for H4-1 and fail to support H4-2. Finally, the total amount of assets invested in the financial market is positively related to the perceived value of information intermediaries, supporting H5.

Among control variables, age and education are found to affect the perceived value of information intermediaries. Specifically, the group whose ages ranged from 18 to 34 perceived information intermediaries to be of greater value than the 65 or older group. Additionally, those with less than a high school education perceived less value for information intermediaries than those with some college education. However, no significant difference is found between those who completed high school and those with some college education.

As indicated, the multinomial logit analysis examines the likelihood of using information intermediaries varying by respondents' characteristics. The results are presented in Table 4. The estimated model has a good fit, with the chi-square of the log likelihood ratio equal to 6,016 ($p = .9998$). As expected, the perceived value of using intermediaries increases the likelihood of using them. In particular, the perceived value is the highest for those who used fee-based intermediaries. H1 is thus supported.

In terms of control variables, the results indicate that risk propensity positively influences the probability of using fee-based information intermediaries. That is, risk-averse consumers are more willing to pay for information intermediaries' advice. We also find that income, total financial assets, age, and education affect the likelihood of using information intermediaries; we do not include perceived expertise as a control variable due to the multicollearity problem. Specifically, we find that households with an income of $20,000–$39,999 are less likely to use fee-based information intermediaries than households with $100,000 or more in annual income. On the other hand, households with an income of $40,000–$59,999 are more likely to use free information intermediaries than households with $100,000 or more in income. The less the money one has invested in the financial market, the less likely he or she is to use information intermediaries. Household heads aged 35–49 are less likely to use paid information intermediaries than those who are 65 or older, whereas no other age-group difference is observed. Finally, having some college education seems to make a positive difference in the use of both fee-based and free information intermediaries.

TABLE 4
Results of Multinomial Logit Analysis: Determinants of Use of Information Intermediaries (N = 3,759)

Independent Variable	Analysis of Variance df	Analysis of Variance Chi-square	Parameter Estimates $\ln(P_1/P_3)$	Parameter Estimates $\ln(P_2/P_3)$
Intercept	2	95.68***	−1.2077***	−0.5540***
Perceived value of information intermediary	2	180.59***	0.7214***	0.3476***
Risk propensity	2	52.87***	0.4069***	0.0559
Opportunity costs				
Income	8	31.77***		
Less than $20,000			−0.2302	−0.1512
$20,000–$39,999			−0.3241**	−0.0313
$40,000–$59,999			−0.0494	0.2321**
$60,000–$99,999			0.1571	−0.0013
$100,000 or more (base)				
Presence of young children	2	2.97	0.0739	−0.0584
Absence (base)				
Total financial assets	8	108.33***		
Less than $5,000			−1.0927***	−0.5828***
$5,000–$19,999			−0.4970**	−0.3650***
$20,000–$59,999			0.2219	0.0004
$60,000–$99,999			0.2792	0.2254
$100,000 or more (base)				
Demographics				
Age	6	23.04***		
18–34			−0.1662	−0.1309
35–49			−0.2630**	−0.1013
50–64			0.0301	−0.0726
65 or older (base)				
Education	6	37.46***		
Less than high school			−0.1843	−0.3690*
High school			−0.4481**	−0.2310*
Some college			0.2037	0.1489
Bachelor's degree (base)				
Household composition	4	3.44		
Single female			−0.0718	−0.1912
Single male			0.0816	0.1514
Married/partner (base)				
Likelihood ratio		6,016.22 (0.9998)		

Note: $\ln(P_1/P_3)$ = probability of using PAID advice from information intermediary over not using any information intermediary.
$\ln(P_2/P_3)$ = probability of using only FREE advice from information intermediary over not using any information intermediary.
*$p < .05$; **$p < .01$; ***$p < .001$.

Tables 5 through 7 present the results from testing the impacts of using information intermediary on the use of other information sources. First, Table 5 cross-tabulates the overall search extent and the extent of using alternative information sources, varying by different uses of information

intermarries (i.e., did not use, only used free service, and used paid service). As shown in Table 5, households that used paid information intermediaries engaged in the most extensive search, followed by those that used only free information intermediaries. About 43% of the respondents who did not use information intermediaries used none of the alternative information sources. In terms of the relative use of alternative information sources, literature is found to be the most sought, while the Internet is the least. In particular, respondents who used information intermediaries (either free or paid) tend to rely on literature more heavily than those who did not use information intermediaries. Regarding the combined use of alternative sources varying across different groups (i.e., those who used paid information intermediaries, only free information intermediaries, and none), no distinctive difference was observed. For all the groups, the percentage of respondents who obtained information from both the literature and the media is the greatest, immediately followed by that of respondents who used all of the alternative sources.

Table 6 presents the results of OLS analysis, examining how the extent of information searches is affected by the use of information intermediaries. The estimated model has a good fit ($p < .0001$), with an R^2 of 0.1696. As can be seen, the OLS results confirmed the findings that those who used information intermediaries (both fee-based and free) engage in greater overall searches than those who did not use intermediaries. When comparing between the two, the amount of overall searches is greater for those using fee-based intermediaries than for those using free intermediaries. We thus support H6.

In terms of control variables, we found that perceived expertise, risk propensity, income, total financial assets, age, and education also influence the extent of overall information search. Specifically, those who have greater perceived expertise, are more risk averse, have greater income and financial assets, are younger, and are more educated tend to engage in more extensive search activities than their counterparts.

Table 7 summarizes the results of logistic regression analyses that examine the impacts of the use of information intermediaries on the use of specific information sources. The estimated models have good fits ($p < .0001$), with R^2 ranging from 0.1108 to 0.2814. Controlling for all other independent variables, the use of information intermediaries is found to influence the use of literature, the Internet, and family/friends, but it is not associated with the use of media.

We further look into how the use of information intermediaries affects the use of alternative information sources by examining the odds ratios from the above logistic analysis. The results are summarized in Figure 1.

TABLE 5
Relationships between Use of Information Intermediaries and Information Searches

	Paid for Information Intermediary (N = 1,057)	Used Free Information Intermediary (N = 1,093)	Did not Use Information Intermediary (N = 1,609)	Test Statistics[a]
Overall information search extent				140.27*
Mean	4.18	3.53	2.40	
Median	4.00	3.00	1.00	
Standard deviation	3.22	2.91	2.64	
Types of information sources used				
Literature	68.63%	59.09%	31.90%	425.72*
Media	47.40%	36.87%	27.16%	134.74*
Internet	28.83%	25.47%	13.54%	94.10*
Family/friends	43.03%	48.57%	27.89%	83.81*
Patterns of information source usage				
Did not use any of the above	11.54%	15.92%	43.44%	
Used single source only				
Literature	11.92%	8.97%	5.34%	
Media	1.70%	1.19%	2.49%	
Internet	1.04%	1.01%	1.99%	
Family/friends	3.31%	7.69%	5.47%	
Used multiple information sources				
Literature and media	14.66%	12.44%	7.71%	
Literature and Internet	5.20%	4.76%	2.73%	
Literature and family/friends	7.85%	8.60%	5.30%	
Media and Internet	0.47%	0.82%	0.81%	
Media and family/friends	1.04%	1.10%	2.05%	
Internet and family/friends	0.76%	2.01%	1.18%	
Literature, media, and Internet	9.74%	6.77%	3.92%	
Literature, media, and family/friends	12.20%	11.62%	8.51%	
Literature, Internet, and family/friends	4.35%	4.48%	2.61%	
Media, Internet, and family/friends	0.57%	1.19%	0.62%	
Used all sources	13.62%	11.44%	6.09%	
Total	100%	100%	100%	

[a]F value is reported for a continuous variable, overall information search extent, and chi-square statistics are reported for categorical variables, use of specific information sources.
*$p < .001$.

TABLE 6
Results of OLS Analyses of the Impact of Use of Information Intermediary on the Extent of Information Search (N = 3,759)

Independent Variable	Parameter Estimates	*p* value
Intercept	4.0729	<.0001
Use of information intermediary		
Paid for information intermediary	0.7734	<.0001
Used free information intermediary	0.5977	<.0001
Did not use information intermediary (base)		
Perceived expertise	0.3103	<.0001
Risk propensity	0.4971	<.0001
Opportunity cost		
Income		
Less than $20,000	−0.9346	.0007
$20,000–$39,999	−0.7138	.0010
$40,000–$59,999	−0.4320	.0213
$60,000–$99,999	−0.1275	.4027
$100,000 or more (base)		
Presence of young children	−0.1483	.3644
Absence (base)		
Demographics		
Total financial assets		
Less than $5,000	−0.2823	.2304
$5,000–$19,999	−0.3392	.1196
$20,000–$59,999	−0.5246	.0051
$60,000–$99,999	−0.1752	.4019
$100,000 or more (base)		
Age		
18–34	0.8305	.0001
35–49	0.4544	.0066
50–64	0.4884	.0019
65 or older (base)		
Education		
Less than high school	−0.9024	.0006
High school	−0.6610	<.0001
Some college	−1.1068	<.0001
Bachelor's degree or more (base)		
Household composition		
Single male	0.0756	.6999
Single female	−0.0091	.9546
Married/partner (base)		
***F* value**	32.33	<.0001
df	21	
R^2	0.1696	
Adjusted R^2	0.1643	

As shown in Figure 1, the use of paid information intermediaries is positively associated with the use of literature and negatively associated with the Internet, while it is not associated with the use of media and family/friends. The users of paid information intermediaries are more than twice

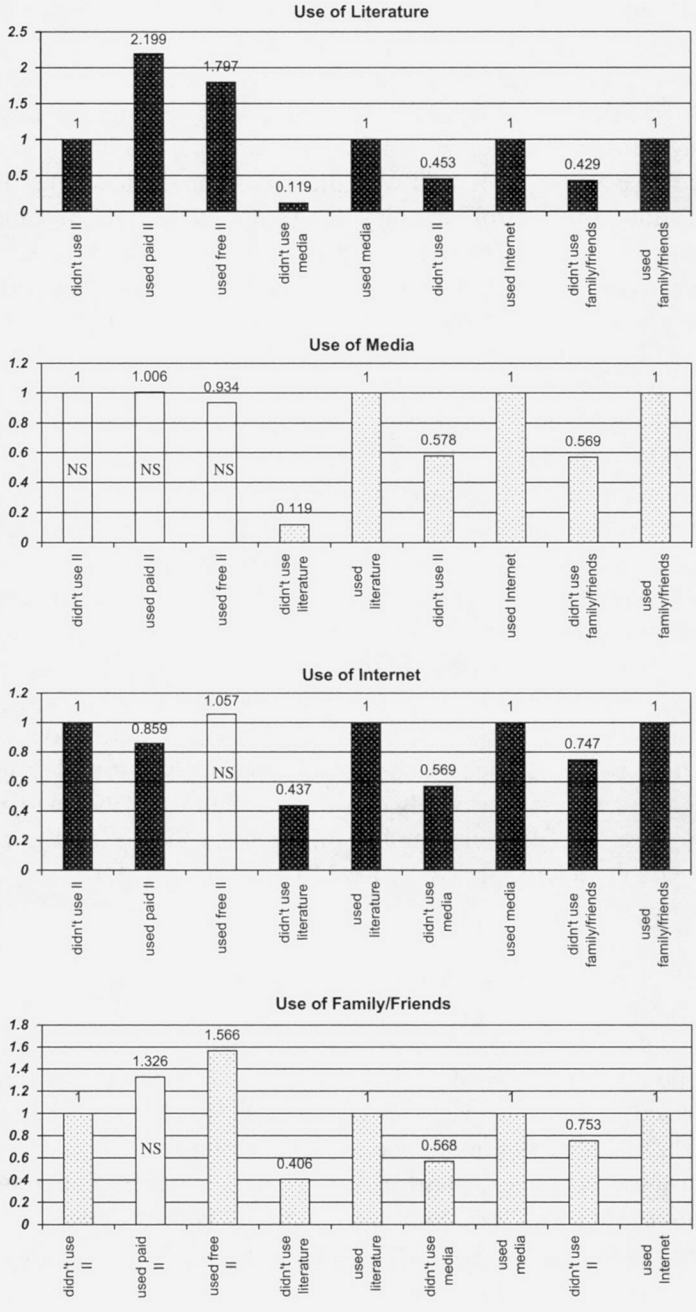
TABLE 7

Results of Logistic Analyses: Parameter Estimates of the Impact of Use of Information Intermediaries and Other Information Sources on the Use of Specific Information Sources (N = 3,759)

Independent Variable	Literature	Media	Internet	Family/Friends
Intercept	0.8032***	−0.4712***	−1.8516***	−0.3607***
Use of information intermediary				
Paid for information intermediary	0.3299***	0.0268	−0.1198***	0.0386
Used free information intermediary	0.1281**	−0.0477	0.0874	0.2049***
Did not use information intermediary (base)				
Use of other information sources				
Literature	Not applicable	1.0638***	0.4145***	0.4507***
Media	1.0634***	NA	0.2816***	0.2825***
Internet	0.3954***	0.2744***	NA	0.1418**
Family/friends	0.4230***	0.2824***	0.1457**	NA
Risk propensity	0.1796**	0.1468**	0.5202***	−0.0887
Perceived expertise	0.1001**	0.1246**	0.1276**	−0.1318**
Opportunity costs				
Income				
Less than $20,000	−0.4106**	0.0301	−0.7714***	−0.2647
$20,000–$39,999	−0.1055	−0.0198	−0.1168	0.0240
$40,000–$59,999	0.0811	−0.0416	0.1397	0.1148
$60,000–$99,999	0.1247	0.0248	0.3197***	0.0870
$100,000 or more (base)				
Presence of children	−0.1099	0.0477	−0.0376	0.0975
Demographics				
Total financial assets				
Less than $5,000	−0.1905	0.1644	0.0073	−0.0160
$5,000–$19,999	−0.1695	0.0587	−0.1665	0.1569
$20,000–$59,999	−0.1208	−0.1492	0.0968	−0.0750
$60,000–$99,999	0.0970	−0.0944	0.1657	0.0904
$100,000 or more (base)				
Age				
18–34	0.0836**	−0.3211**	0.8536***	0.5341***
35–49	−0.0985	−0.0697	0.3685***	0.3215***
50–64	−0.0054	0.0541	−0.0805	−0.0491
65 or older (base)				
Education				
Less than high school	−0.3761**	0.1374	−0.4615*	−0.1689
High school	−0.1203	−0.0879	−0.2273	−0.0350
Some college	0.1274	−0.0347	−0.1823	0.0401
Bachelor's degree (base)				
Household composition				
Single female	0.0461	−0.0587	−0.2740**	0.1809**
Single male	−0.0877	0.1108	0.0344	−0.0881
Married/partner (base)				
χ^2 of likelihood ratio (24 df)	1,471.21***	970.94***	897.16*	523.80***
R^2	0.3588	0.2542	0.2374	0.1464

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

FIGURE 1
Results of Logistic Analyses: Odds Ratio of Impact of Use of Information Intermediaries and Other Information Sources on the Use of Specific Information Sources (N = 3,759)



likely to use literature than those who did not use information intermediaries. On the other hand, users of paid information intermediaries are less likely to use the Internet than those not using information intermediaries (the odds ratio of 0.859). The use of free information intermediaries, on the other hand, is positively associated with the use of literature and family/friends: the users of free information intermediaries are 180% more likely to use literature and 157% more likely to use family and friends than those not using information intermediaries. However, the use of free information intermediaries is not associated with the use of the media or the Internet.

Concerning the control variables, the results indicate significant interdependencies between alternative sources of information (other than information intermediaries). That is, the use of one information source is positively associated with the use of another source (e.g., the use of media is positively associated with the use of literature, the Internet, and family/friends). We also find that both risk propensity and perceived expertise increase the use of all types of information sources, except for family and friends. In terms of demographics, those with incomes less than $20,000 are less likely to use the literature, the Internet, and family/friends compared to those with incomes $100,000 or more, whereas income is not associated with the use of media. The presence of children is positively associated with the use of family/friends but does not influence use of other information sources. The amount of total financial assets is not associated with the use of other information sources, in contrast to its positive association with the use of information intermediaries (as shown in Table 4). Age is negatively associated with the use of other information sources, although the two oldest age groups do not show any significant difference. College graduates are more likely to use the literature and the Internet compared to those who did not complete high school. Single females are less likely to use the Internet and more likely to use family/friends compared to married households.

CONCLUSIONS AND IMPLICATIONS

This study attempts to enhance our understanding of consumers' use of information intermediaries that offers human interactions. In particular, the study identifies the consumer segments that are likely to use information intermediaries. It also examines the effects of using information intermediaries on the extent and pattern of information searches involving other information sources. The proposed model is constructed based on a value-intention framework and tested in the context of financial investments. The results of our study have the following implications.

First, the results lend strong support for the conceptualization that the likelihood of using information intermediaries is determined by the perceived value of using them. The higher a consumer perceives the value of using information intermediaries, the more likely he/she uses it. In fact, the perceived value is the highest for consumers who used fee-based intermediaries, followed by that for those who used free intermediaries. The results also support the prediction that the perceived value of information intermediaries varies by individual characteristics. In particular, those who see themselves lacking knowledge and ability in financial matters (i.e., lower perceived expertise), having high opportunity costs (i.e., high income), and having large amounts of assets invested in the financial market tend to perceive higher value of using information intermediaries. The results also indicate that those who are younger and less educated perceive higher value for using information intermediaries than those with the opposite demographic characteristics.

While the perceived value plays a predominant role in the likelihood of using information intermediaries, a few other factors influence the use of information intermediaries as well. For example, we find that consumers who used fee-based intermediaries are more risk-averse than those who did not use information intermediaries. In addition, consumers who are younger, less educated, and have smaller amount of financial assets invested in the financial market are less likely to use either fee-based or free information intermediaries.

The direct implication of these findings to policy makers and consumer educators is as follows. When they wish to encourage or persuade consumers to utilize information intermediaries (in an effort to enhance consumer literacy), they should first teach consumers about the value of using information intermediaries. They also should educate consumers about situations in which this value is most likely to be realized (e.g., low perceived expertise, high opportunity costs of time, young and less educated consumers). This effort will help consumers (particularly those who possess these characteristics) recognize the need of using information intermediaries and motivate them to use them when they need them.

We also shed light on the observation that while the majority of respondents see the value of information intermediaries, less than half of them have used information intermediaries in the past. Although the objective of our study is not to identify specific reasons underlying this discrepancy, our data analyses suggest one possible explanation. The data reveal that, whereas they recognize the value, the majority respondents are not willing to pay for information intermediaries. This, potentially combined with a perception that the use of information intermediaries is costly, may have

discouraged consumers from seeking advice, particularly among budget-constrained consumers.

As Womak (2002) argues, socially beneficial information often requires subsidized provision from government or nonprofit information intermediaries. Our results emphasize the need for policy makers and consumer educators to offer subsidized intermediaries from which young, less educated, and low-income consumers can economically obtain quality financial advice. Consumers will also need to be educated about how to locate and access such services when they need them.

Our results also support that the use of information intermediaries increases the overall extent of the consumer's search. This may be because the use of information intermediaries increases search efficiency (since an information intermediary cuts down time and effort necessarily to locate, sort, and integrate decision-relevant information), affording consumers the opportunity to look for information from other sources. In fact, information intermediaries can help consumers identify other sources of information when they wish to seek out other information in addition to that provided by the information intermediaries. This result may also be due to that those who are likely to use information intermediaries are information seekers who tend to engage in extensive information searches. Our results indeed show that those who use one source are also likely to use other types of information sources. It is also possible that the use of information intermediaries increases the overall search because of the reciprocal effect. That is, consulting many different sources will expand the amount of information consumers must process, which will increase the need to use information intermediaries. An in-depth investigation of the psychological mechanisms underpinning this result would be an interesting topic for future research.

Next, the results show that the use of information intermediaries affects the choice of specific types of information sources. We report some interesting patterns in this regard. First, consumers who use paid services are the most likely to use literature as an additional information source. This may reflect that those who favor paid services are interested in obtaining credible, high-quality information. Books, magazines, and brochures from financial institutions are seen as more credible and reliable than other information sources. We also find that the users of paid information intermediaries are less likely to use the Internet as an information source. It may be because they see information on the Internet is not credible or that locating relevant information on the Internet requires a significant time investment.

Second, consumers who use free information intermediaries are more likely to use friends/family than those who do not use information intermediaries. These results may signify a high level of cost consciousness

among these consumers. That is, although they see the value of using information intermediaries, they are not willing to pay for information or advice. They turn to friends and family because their advice is mostly free.

Finally, the results of our study should be generalized with context specificity in mind. The specific interpretations of our findings are confined to investment decisions. It will be interesting to examine whether the relationships supported by this study will hold true for other decision situations. In addition, our study concerns the use of human information intermediaries; consumers' use of nonhuman information intermediaries may involve different mechanisms. A future study may compare the difference in factors, leading to consumers' use of human and nonhuman information intermediaries and the outcomes of each.

REFERENCES

Alba, Joseph, John G. Lynch, Jr., Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, and Stacy Wood. 1997. Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces. *Journal of Marketing*, 61 (July): 38–53.

Ariely, Dan. 2000. Controlling the Information Flow: Effects on Consumers' Decision Making and Preferences. *Journal of Consumer Research*, 27 (September): 233–248.

Barrett, Rob and Paul P. Maglio. 1999. Intermediaries: An Approach to Manipulating Information Streams. *IBM Systems Journal*, 38 (4): 629–641.

Bertaut, Carol C. and Martha Starr-McCluer. 2000. *Household Portfolios in the United States*. Federal Reserve Board Finance and Economics Discussion Paper 2000-26. Washington, DC.

Brock, Kathy Thomas. 1994. Developing Information Literacy Through the Information Intermediary Process: A Model for Teacher-Librarians and Others. *Emergency Librarian*, 22 (1): 16–20.

Caillaud, Bernard and Bruno Jullien. 2001. Software and the Internet: Competing Cybermediaries. *European Economic Review*, 45 (4–6): 797–808.

Caissey, G. 1990. Research, Thinking, Decision Making, Problem Solving: Skills for the Information Age. *Education Digest*, 55 (6): 51–53.

Chiteji, Ngina S. and Frank P. Stafford. 1999. Portfolio Choices of Parents and Their Children as Young Adults: Asset Accumulation by African-American Families. *American Economic Review*, 89 (2): 377–380.

Cho, Jinsook and Jinkook Lee. 2004. Risk and Risk Reducing Strategies. Working paper, University of Wisconsin-Madison.

Coleman, Waynem, William E. Warren, and Richard Huston. 1995. Perceived Risk and the Information Search Process in the Selection of a New Dentist: An Empirical Investigation. *Health Marketing Quarterly*, 13 (2): 27–42.

Diehl, Kristin, Laura J. Kornish, and John G. Lynch Jr. 2003. Smart Agents: When Lower Search Costs for Quality Information Increase Price Sensitivity. *Journal of Consumer Research*, 30 (June): 56–71.

Dodds, William B., Kent B. Monroe, and Dhruv Grewal. 1991. Effects of Price, Brand, and Store Information on Buyers' Product Evaluations. *Journal of Marketing Research*, 28 (3): 307–319.

Dulebohn, James, H. 2002. An Investigation of the Determinants of Investment Risk Behavior in Employer-Sponsored Retirement Plans. *Journal of Management*, 28 (1): 3–26.

Duncan, Calvin P. and Richard W. Olshavsky. 1982. External Search: The Role of Consumer Beliefs. *Journal of Marketing Research*, 19 (February): 32–43.

Feick, Lawrence F., Robert O. Herrmann, and Rex H. Warland. 1986. Search for Nutrition Information: A Probit Analysis of the Use of Different Information Sources. *Journal of Consumer Affairs*, 20 (2): 173–193.

Gifford, Sharon. 2001. *Endogenous Information Costs*. Working paper, Rutgers University.

Hagel, John and Marc Singer. 1999. *Net Worth: Shaping Markets When Customers Make the Rules*. Boston: Harvard Business School Press.

Johnson, Eric J. 2001. Digitizing Consumer Research. *Journal of Consumer Research*, 28 (September): 331–336.

Lee, Jinkook and Jeanne M. Hogarth. 2000a. Shopping for a Mortgage Loan: The Search for Information. *Financial Services Review*, 9 (3): 277–293.

——— 2000b. Relationships among Information Search Activities When Shopping for a Credit Card. *Journal of Consumer Affairs*, 34 (2): 330–360.

Locander, William B. and Peter W. Hermann. 1979. The Effect of Self-Confidence and Anxiety on Information Seeking in Consumer Risk Reduction. *Journal of Marketing Research*, 16 (2): 268–235.

MacKie-Mason, Jeffrey K. and Hal R. Varian. 1996. Some Economics of the Internet. In *Networks, Infrastructure, and the New Task for Regulation*, edited by Werner Sichel and Donald L. Alexander (107–136). Ann Arbor: University of Michigan Press.

Mitra, Kaushik, Michelle C. Reiss, and Louis M. Capella. 1999. An Examination of Perceived Risk, Information Search and Behavioral Intentions in Search, Experience and Credence Services. *The Journal of Services Marketing*, 13 (3): 208–228.

Murray, Keith B. 1991. A Test of Services Marketing Theory: Consumer Information Acquisition Activities. *Journal of Marketing*, 55 (January): 10–25.

Raghunathan, Rajagopal and Michael T. Pham. 1999. All Negative Moods Are Not Equal: Motivational Influences of Anxiety and Sadness on Decision Making. *Organizational Behavior and Human Decision Processes*, 79 (1): 56–77.

Rappa, Michael. 2003. *Case Study: MySimon. Managing the Digital Enterprise*. http://digitalenterprise.org/cases/mysimon.html.

Ratchford, Brian T., Debabrata Talukdar, and Myung-Soo Lee. 2001. A Model of Consumer Choice of the Internet as an Information Source. *International Journal of Electronic Commerce*, 5 (Spring): 7–21.

Rose, Frank. 1999. *The Economics, Concept, and Design of Information Intermediaries: A Theoretic Approach*. Information Age Economy Series. Heidelberg: Physica.

Schmidt, Jeffrey B. and Richard A. Spreng. 1996. A Proposed Model of External Consumer Information Search. *Journal of the Academy of Marketing Science*, 24 (3): 246–256.

Shenk, David. 1997. *Data Smog*. New York: Harper Collins.

Sirdeshmukh, Deepak, Jagdip Singh, and Barry Sabol. 2002. Consumer Trust, Value, and Loyalty in Relational Exchanges. *Journal of Marketing*, 66 (1): 15–37.

Sitkin, Sim B. and Amy L. Pablo. 1992. Reconceptualizing the Determinants of Risk Behavior. *Journal of Academy of Management Review*, 17 (1): 9–38.

Srinivasan, Narasimhan and Brian T. Ratchford. 1991. An Empirical Test of a Model of External Search for Automobiles. *Journal of Consumer Research*, 18 (2): 233–243.

Varian, Hal R. 1998. Markets for Information Goods. Presented at the Bank of Japan Conference, June 18–19. http://www.sims.berkeley.edu/simhal/papers/japan/japan.pdf.

Waddington, Paul. 2003. Dying for Information? A Report on the Effects of Information Overload in the UK and Worldwide. The Marc Fresko Consultancy. http://www.cni.org/regconfs/1997/ukoln-content/repor~13.html.

Waldfogel, Joel and Lu Chen. 2003. *Does Information Undermine Brand? Information Intermediary Use and Preference for Branded Web Retailers*. NBER Working Paper 9942, Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w9942.

Womak, Ryan. 2002. Information Intermediaries and Optimal Information Distribution. *Library & Information Science Research*, 24 (2): 129–145.

Woodruff, Robert B. 1997. Customer Value: The Next Source of Competitive Advantage. *Journal of the Academy of Marketing Science*, 25 (2): 139–153.

Zeithaml, Valarie A. 1988. Consumer Perceptions of Price, Quality, and Value: A Mean-End Model and Synthesis of Evidence. *Journal of Marketing*, 52 (3): 31–46.