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An Individual Level Analysis of the Mutual Fund Investment Decision

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Abstract

This study investigates the manner in which consumers make investment decisions for mutual funds. Investors report that they consider many nonperformance related variables. When investors are grouped by similarity of investment decision process, a single small group appears to be highly knowledgeable about its investments. However, most investors appear to be naive, having little knowledge of the investment strategies or financial details of their investments. Implications for mutual fund companies are discussed.

The growth of mutual funds is arguably the most important phenomenon of present day financial markets. Although comprising less than $50 billion in assets in 1977 ($111 billion in 1993 dollars) in under 500 funds, by 1989, over 30 million individuals had invested $982 billion in 2917 funds ($1,123 billion in 1993 dollars (*Mutual Fund Fact Book*, 1990). By early 1993, assets under management had leapt to $1.6 trillion in 3848 funds and accounted for fully 11.4 percent of U.S. financial assets (*Mutual Fund Fact Book*, 1993).[1] Total mutual fund assets dwarfed savings and loan deposits and were, respectively, 98 percent of life insurance company assets and 66 percent of commercial bank deposits. Some industry observers predict that mutual fund assets will rise to $4 trillion by the year 2000 (*Business Week*, 1993). This enormous concentration of assets into relatively few hands allows mutual fund managers to exercise immense power in financial markets.

Unfortunately, the growth in mutual fund assets has not been paralleled by a corresponding focus on the processes by which mutual fund investors make investment decisions. Indeed, students of mutual funds have been forced to rely on modern finance theory for insight. This theory rests on the assumption that purchase decisions for individual financial assets should be made on the basis of investor beliefs regarding the future

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return and risk of those assets and the covariance of those returns with other financial assets in the investor's portfolio (Markowitz, 1959; Elton and Gruber, 1989). Descriptive inferences of investor behavior are frequently drawn from these theoretical underpinnings, although they are primarily normative in character. By focussing upon just these two economic factors (return and risk), considerable understanding of mutual fund investors' purchase decisions is foregone.

In this article, we employ a consumer behavior perspective to gain insight into the decision processes employed by mutual fund investors. We operate under the assumption that consumers, at least implicitly, employ some form of multi-attribute model when making choices among mutual fund alternatives. We show that, as well as considering both anticipated return and risk in their purchase decisions, investors positively value other attributes. Thus, we argue, models of investor behavior that focus solely upon return and risk are, at best, naive vehicles for understanding the mutual fund investment process.

We also find that mutual fund investors can be meaningfully grouped on the basis of similarities in both the use of information sources and selection criteria. The resulting groups differ substantially from each other in terms of information sources and selection criteria used in the investment decision. Cross-tabulating the information source and selection criteria groups produces a single set of composite groups; these groups differ substantially from each other in terms of both demographic characteristics and mutual fund investment behavior. Group membership ranges between well-informed, knowledgeable investors and others that are best described as naive.

1. Literature review

1.1. Investment in mutual funds

Most research on mutual funds has employed two explanatory variables, namely, risk and return. This approach implicitly places no value on other potentially important attributes of the mutual fund investment decision. In keeping with this strictly economic frame, several scholars have investigated whether or not mutual funds outperform the market. Much early research (e.g., Sharpe, 1966; Jensen, 1968) showed that, on a risk-adjusted basis, mutual funds underperform the market. More recent studies, for example, Ippolito (1989) and Grinblatt and Titman (1989, 1992), find some evidence of superior mutual fund returns. However, in a recent article, Brown, Goetzmann, Ibbotson, and Ross (1992, p. 553) conclude that "there is still no strong evidence that manager performance over and above market indices can justify the fees managers charge and the commission costs they incur."

A second line of enquiry that also considers only return and risk is whether or not historic mutual fund performance predicts future performance. Several authors have concluded that past risk-adjusted mutual fund performance helps predict future risk-adjusted performance (Elton and Gruber, 1989; Goetzmann and Ibbotson, 1991; Grinblatt and Titman, 1989, 1992; Hendricks, Patel, and Zeckhauser, 1993; Ippolito, 1989; Lehmann and Modest, 1987). Some evidence is fairly weak; other evidence is stronger. Although Brown, Goetzmann, Ibbotson, and Ross (1992) have argued that these studies

suffer from potentially severe survivorship biases that may induce a repeat winner phenomenon, Goetzmann and Brown (1993) find performance persistence in a data set relatively free of survivorship bias.

Relatedly, there is some empirical evidence that investors do in fact make mutual fund purchase decisions on the basis of past performance. Patel, Zeckhauser, and Hendricks (1992) and Kane, Snatini, and Aber (1991) report that previous fund performance, adjusted for risk, appears to be associated with net inflows to mutual funds. However, Sirri and Tufano (1992, p. 33) find that raw returns, which are not adjusted for risk, appear to drive fund growth. They suggest that "naive retail trend chasers" are even more responsive to the "noisier" measure of unadjusted performance.

Notwithstanding the dominant focus on return and risk in the studes noted above, there is evidence that these variables alone are insufficient explanations of mutual fund investment decisions. For example, closed-end mutual funds frequently sell at substantial discounts or premia to the underlying net asset value of their component securities (Lee, Shliefer, and Thaler, 1991). In addition, Sirri and Tufano (1992) find that fund inflow to well performing open-end funds is much greater than fund outflow from consistently poorly performing funds. Using proxy variables for services, Sirri and Tufano (1992) also demonstrate that higher levels of service are positively related to net fund inflow. In part, on the basis of these results, Goetzmann, Greenwald, and Huberman (1992, p. 21) conjecture that "[there is] a broad base of naive investors *who cannot tell or do not care* that their portfolios consistently underperform" (emphasis added). If, in fact, consumers do not care that their portfolios underperform the market, we must assume that they place greater (or at least positive) value on other attributes. The implications are less clear if consumers simply cannot tell.

Evidence that return and risk alone are inadequate as the only explanatory variables for mutual fund investment decisions is provided by a 1990 *Consumer Reports* survey of mutual fund investors. Although past performance and level of risk (safety) were rated the two most important factors in aggregate, several additional factors were also relevant: amount of sales charge, management fees, fund manager reputation, fund family (e.g., Fidelity, Vanguard), clarity of the fund's accounting statement, recommendation from a financial magazine or newsletter, availability of telephone switching, the fact that funds are already owned in that family, and a friend's recommendation. Because of the distributional nature of these responses, it is quite likely that for some investors, past performance and level of risk (safety) were not the most important characteristics. That is, while in aggregate the highest means were for return and risk, variance about the mean could reasonably have individual consumers placing greater value on other characteristics.

To summarize, an exclusive focus upon return and risk as factors driving mutual fund investment decisions appears to tell only part of a complex story. The lack of clarity regarding those mutual fund characteristics actually used by investors in making investment decisions is of considerable importance to academic researchers because of implications for the dominant paradigm of investor behavior. Furthermore, the practical ramifications are enormous. As the mutual fund industry concentrates and leading firms spend ever more heavily on developing and maintaining funds, and distributing and promoting these funds to investors so as to establish and secure their market positions, assumptions about investor behavior are ever more crucial. For example, in 1989, two

leading fund families, Fidelity and Dreyfus, spent, respectively, $60 million and $40 million on advertising (McManus, 1990). These expenditures represent approximately 20 percent of fund revenues; by comparison, in 1992, such leading advertisers as Procter and Gamble and Lever Brothers spent, respectively, 9.5 percent and 10.6 percent of revenues in consumer markets. Clearly, imprecise assumptions about investor behavior can be quite costly for mutual fund companies.

Although there is a small literature on formulating successful marketing strategies for mutual fund managers (e.g., Eaton, 1991; Hartman and Smith, 1990; Lucey, 1990), it is not, in general, informed by any solid analysis of investor behavior. Neither is a subset of this literature that focuses specifically on strategies for banks competing in mutual funds (e.g., Bowen, 1990; Zimmerman, 1991). However, several authors have investigated information provision for mutual fund purchases by mutual fund companies (e.g., Del Prete, 1991; Queenen, 1991). In one of the more thoughtful micro-level studies, Hartman and Smith (1990) investigate the level of risk perceived by consumers in each of eight hypothetical purchase scenarios, manipulated by varying place, method, and advice. They find that consumers may be more effectively segmented and targeted by considering their risk tolerance.

In this exploratory study, we take a consumer behavior perspective in investigating individual investor behavior in purchasing mutual funds. We seek insight into the question as to which characteristics are perceived as relevant by examining post-purchase investor self-reports of their mutual fund investment decisions. In particular, we explore the relationships among four sets of variables: information sources used for mutual fund purchases; selection criteria for deciding among alternative mutual funds; mutual fund purchase behavior, and consumer demographic data. The study is based on data collected from over 3,000 mutual fund investors in the continental United States.

1.2. Consumer behavior

The consumer behavior literature has a long history of study of individual purchase decisions. Anchored by Howard and Sheth's (1969) comprehensive model, consumer behavior researchers have developed and tested many constructs believed to comprise the purchase decision process. In this study, we focus on three of the more ubiquitous: information sources, selection criteria, and purchase. We explore how these constructs relate to one another in the mutual fund purchase decision.

Consumer behavior researchers have often modeled the purchase decision process in the following manner. Initially, consumers gather information on the product class of interest (i.e., mutual funds in this study) from both internal (e.g., memory of previous experience) and external (e.g., advertising, brochures, newspaper articles) sources (the two sources may be referred to as information sources). Armed with this information, they develop a set of product and service attributes (e.g., price, performance, level of service) that are important to them in assessing the various alternative product offerings. Ultimately, consumers use this set of attributes (commonly referred to as selection criteria) to determine which alternative from the set of available products to purchase.

The two constructs of information source and selection criteria are quite distinct, yet closely related. For example, three investors (consumers), whose major information sources were, respectively, *The Wall Street Journal,* an investment advisor, and personal experience with an asset management firm, might form very different selection criteria. A factor complicating the distinction between information sources and selection criteria in the mutual fund investment decision is that not only may some information sources (e.g., published performance rankings) also function as selection criteria, a single information item may serve a different function at each stage of the decision process. For example, in the information gathering stage a consumer may use performance rankings to identify the various possible performance measures (e.g., one-year, five-year, or ten-year return), or to ascertain whether large fund families in general outperform small fund families. In the selection criteria stage, the consumer may decide that one-year return is the most important criterion, then use that criterion to discriminate and choose among alternative mutual funds.

Consumer behavior researchers spend much effort to develop models of construct interdependencies in order to predict purchase behavior. In a similar vein, we examine both how information sources and selection criteria relate to each other, and how they relate both to demographic profiles of investors and to mutual fund purchase. Through an investigation of these interrelationships, we hope to develop a richer understanding of the mutual fund investment decision.

1.2.1 Information sources. In the purchase decision process, consumers may receive two types of information—namely, interpersonal and impersonal (mass) communication. Interpersonal communication is received from both informal (e.g., family and friends) and formal (e.g., organizations) sources.[2] Research on the relationship between information sources and other purchase decision constructs is limited (Engel, Blackwell, and Miniard, 1986, pp. 259–299). A notable exception is the Vinson and McVandon (1978) study that identified a strong relationship between the subjects' information sources and their product concept recall. In addition, Murray (1991) related information source use to product category (goods versus services) and consumer experience; internal memory was preferred as a source of information by those with greater experience.

In related research, the degree of personalization of a service encounter has been shown to impact the level of consumer satisfaction (Surprenant and Solomon, 1987). In the financial services arena, Carroll (1990) argues that a bank's retail customer mix may be enhanced through selective information presentation; and Crosby and Stephens (1987) demonstrate that insurance customers value personal over impersonal information sources.

For the mutual fund purchase decision, impersonal sources include advertising, direct mail, and published fund performance statistics; informal interpersonal sources include family and friends; formal interpersonal sources include planners—fee-based advisors (who charge a set fee for their services regardless of transaction volume), and commission-based advisors (who implicitly charge on a per transaction basis). Unfortunately, little hard data concerning the relative value that investors place on these various information sources are available, despite their importance for mutual fund managers who must allocate resources for communication and distribution.

1.2.2 Selection criteria. Selection criteria embrace the set of product or service attributes that consumers consider when making purchase decisions among alternatives. Such attributes may be clearly defined physical attributes, such as the scope of a mutual fund family (i.e. the number of funds), or may be less precise constructs, such as responsiveness or perceived confidentiality of a mutual fund sales agent. Fishbein and Azjen (1975) is perhaps the most widely cited attempt by consumer researchers to model the choice process. In their multi-attribute model, choice is determined by each alternative's sum of perceived values on multiple (importance-weighted) attributes. The alternative with the largest score on independently rated, weighted attributes is selected. Lancaster (1966) presents a multi-attribute model of consumer choice that may be more familiar to researchers in economics and finance. He suggests that consumer utility resides in the characteristics that a good possesses, rather than in the good itself. Thus, preference orderings for goods are rankings of sets of characteristics (i.e., attributes) and are only indirectly rankings of goods. We attempt to identify those attributes or characteristics of mutual funds that are important to investors when making investment decisions.

For a given purchase, three sets of variables—individual, brand or product characterists, and purchase context—jointly determine the particular selection criteria employed. Individual factors encompass a variety of demographic and psychographic characteristics of decision makers (Maheswaran and Meyers-Levy, 1990). Brand or product characteristics, including product features or attributes (e.g., price, quality, and performance: return and risk for the mutual fund purchase) are widely believed to impact significantly upon the weighting of selection criteria (Gupta, 1988). Finally, purchase context (e.g., internal and external framing of the purchase decision) has a significant impact on selection criteria (Kahneman and Tversky, 1974).

Some researchers have investigated the relationship between consumer selection criteria and demographic variables. For example, Anderson, Cox, and Fulcher (1976) find that consumer selection criteria for a bank (e.g., convenience versus service orientation) is related to several demographic variables (e.g., service-oriented customers were more likely to have a working spouse and higher income).

In examining the mutual fund investment decision, as noted above, previous research has focussed on the attributes of return and risk. Based on the research reviewed above, we expect to find that investors employ other selection criteria, either in addition to, or instead of, risk and return.

1.2.3 Mutual fund purchases. Our general working hypothesis is that for the mutual fund investment decision, information sources, selection criteria, and mutual fund purchase are related. It seems that it should also be possible to identify groups of investors who display intragroup homogeneity and intergroup heterogeneity regarding the use of information sources and selection criteria in their mutual fund investment decisions. Such "market segments" might exhibit unique mutual fund investment behavior and possess unique demographic characteristics. These market segments might provide an important perspective on the structure of the mutual fund market, as well as provide insights valuable to mutual fund managers for developing marketing strategies for their funds.

2. Method

The working hypothesis was examined via a survey of mutual fund purchasers in the continental United States

2.1. Survey design

The survey instrument comprised four sections. The first section asked subjects to rate the importance of nine information sources (listed in table 1a) considering a mutual fund investment. The second section asked subjects to rate the importance of nine selection criteria (listed in table 1b) in selecting a mutual fund investment. (Both sections used a five-point scale: 1 = not at all important; 5 = extremely important.) The third section secured data on subjects' mutual fund investment behavior; the final section collected demographic data on the subjects. Questions were developed via a multistage procedure. Four focus groups were held with mutual fund investors to develop a preliminary questionnaire. Then, two focus groups were held with each sponsoring firm (managers and mutual fund salespeople) to finalize the instrument. The survey took approximately ten minutes to complete.[3] If subjects expressed a need for clarification of terminology used in the questionnaire, the administrators had access to brief explanations which were designed to clarify any confusion (e.g., a mutual fund information source is the place or person from which you obtain information about mutual funds).

Data were collected via a random national telephone survey of consumers investing in mutual funds (money market funds were excluded). The interviews were conducted under the auspices of a market research firm, CSSP Technologies, Inc., and were funded by two national financial service firms, a retail broker and an insurance company (each of whom has requested to remain anonymous). In return for providing funding for this project, the two firms were provided with immediate access to and analysis of the data set. The sample frame comprised consumers in a directory of all listed telephone numbers in the continental United States. Data were collected during a one-week period ending March 5, 1991. Respondents were screened by interviewers asking to speak to the person making the household investment decisions, then asking the decision maker if mutual fund investments were made; 27,528 telephone calls were placed; 17,783 households were contacted; 3,386 subjects completed the survey. The sample proportions (19 percent of households contacted completed the telephone survey) are consistent with 23.4 million households containing at least one member investing in mutual funds in the U.S. (25 percent of all households at the time of the study—year-end 1990) (*Mutual Fund Fact Book*, 1993).[4] Interviews were conducted by 17 interviewers; no systematic differences were found across interviewers.

The demographic profile of our subjects strongly resembles that of mutual fund purchasers.[5] Mean subject age was 47.1 [46] years (standard deviation = 14.1 years); 81 percent [56] were college graduates, 17 percent had graduate education; 61 percent [56] of respondents were male; 75 percent [72] were married; geographic location (by percent)

Table 1. Importance of information sources and selection criteria in mutual fund investments[1]

1.a Information Sources[2,3]

Information source	Mean	(Standard deviation)	Personal (P) or Impersonal (I) Source
Published Performance Rankings	4.57	(0.73)	I
Advertising	3.13	(1.21)	I
Commission-Based Financial Advisors	2.60	(1.59)	P
Seminars	1.89	(1.34)	P
Recommendations of Friends/Family	1.74	(1.05)	P
Recommendations of Business Associates	1.56	(0.85)	P
Fee-Based Financial Advisors	1.34	(0.91)	P
Books	1.17	(0.63)	I
Direct Mail	1.11	(0.42)	I

1.b Selection Criteria[2,4]

Selection criteria	Mean	(Standard deviation)
Investment Performance Track Record	4.62	(0.64)
Fund Manager Reputation	4.00	(0.77)
Scope (Number of funds in family)	3.94	(1.06)
Responsiveness to Enquiries	2.30	(1.08)
Management Fees	2.28	(1.31)
Investment Management Style	1.68	(1.12)
Additional Features (checking, brokerage)	1.38	(0.92)
Confidentiality	1.35	(0.83)
Community Service/Charity Record	1.09	(0.48)

1. 5 point scale: 1 = not at all important; 5 = extremely important.
2. Each variable is significantly different from its adjacent variable at $p < .01$.
3. The wording of this question was as follows: How important were the following sources of information to you in purchasing mutual funds? Please respond with a number from 1 to 5 based on how important the information source was to you, where: 1 is not-at-all important and 5 is extremely important.
4. The wording of this question was as follows: How important were the following selection criteria to you in purchasing mutual funds? Please respond with a number from 1 to 5 based on how important the selection criterion was to you, where: 1 is not-at-all important and 5 is extremely important.

was northeast (34.1) [28.3], midwest (17.5) [21.3], southeast (11.8) [15.4], southwest (11.1) [9.7], mountain states (13.5) [6.3], and west coast (12.0) [8.1]. The source of investment funds was predominantly salary income (85.8 percent); other sources were ownership/partnership in a private business (7.0 percent), sale of a privately owned company (1.6 percent), inheritance (1.2 percent), retirement monies (2.6 percent), and other (1.8 percent).

2.2. Analysis

Cluster analysis, using the *K*-means disjoint clustering technique (McRae, 1970) (via the SAS FASTCLUS procedure), was used to group subjects on the basis of similarity in their information source and selection criteria ratings; numbers of clusters selected were based on scree tests (a scree test plots the eigenvalues associated with each cluster and suggests how many clusters to maintain based on additional variance explained). A split half test that demonstrated a high degree of replication across the two halves of the sample provided good evidence of cluster stability. Information source and selection criteria clusters formed in this manner were examined for inter-cluster differences. A single composite set of clusters was examined for relationships both to demographic characteristics and mutual fund investment behavior. The finding of significant differences between clusters in terms of these related external variables (i.e., demographic characteristics and mutual fund purchase behavior) provides strong support for the validity of the cluster solutions (Alenderfer and Blashfield, 1989).[6]

3. Results

The results are presented in four sections. First, we present a series of descriptive results of information sources and selection criteria used in the mutual fund purchase, and of mutual fund investor behavior. Second, we develop two sets of groups, one based on use of information sources, and one based on selection criteria; we then combine these groups into a single set of composite groups. Third, we examine a set of demographic variables for differences across the five major composite groups. Finally, we examine mutual fund investment behavior across the same five groups.

3.1. Descriptive results

Of the nine information sources surveyed, impersonal sources were highest and lowest in importance (table 1a). Published Performance Rankings (4.57) and Advertising (3.13) were two of three sources rated above the mean of 2.06; Books and Direct Mail were of negligible importance. Overall, personalized sources scored less highly; advice from the Commission-Based Financial Advisors was the most highly rated (2.60).[7]

Among the selection criteria, just three of nine selection criteria rated above mean importance of 2.52 (table 1b): Investment Performance Track Record (4.62), Fund Manager Reputation (4.00), and Scope (number of funds in family) (3.94). These criteria were much more important than Responsiveness to Enquiries (2.30) and Management Fees (2.28). Somewhat surprisingly, Confidentiality (1.35), Additional Features (1.38), and Investment Management Style (1.68) were quite unimportant.[8]

On average, subjects invested $9,730 in mutual funds, 26.5 percent of their liquid asset portfolios (table 2). (The standard deviation of amount invested was quite high; 4.0 percent had over $50,000 invested in mutual funds.) These investments were highly

concentrated in individual funds and even more so in individual fund families. Investors did not perceive their funds as risky investments; likelihood of future mutual fund investment was middling.

These findings in part support the results of prior research: performance-related variables were both the most important information sources and selection criteria. However, the high importance of other factors (e.g., selection criteria—Fund Manager Reputation, and Scope) suggests support for our notion that attributes other than return and risk are actively considered and weighed by investors.

Two particularly interesting results emerge at this point. First, consumers were in general uninformed about their mutual fund investments (table 2). 39.3 percent did not know whether their investments were in load funds or no-load funds; 72.3 percent did not know whether their funds focused on domestic or international investments; and 75.0 percent did not know the investment style of their funds: equity (i.e., value, growth, market timing, index, other) or fixed income (i.e., long-term, short-term, index, specialized, other).[9] These data are strikingly consistent with the presence of naive investors conjectured by Goetzmann, Greenwald, and Huberman (1992). As discussed below, it appears that these findings are meaningful and not merely an artifact of the survey design.

Second, investors are highly concentrated both in individual mutual funds and mutual fund families. Investors generally invest in a single mutual fund; those investing in more than one fund concentrate their investments in multiple funds in a single mutual fund family. Important implications for fund managers and marketers follow from this finding.

Table 2. Mutual fund investment behavior

Variable	Mean	(Standard deviation)
Assets Invested ($000s)	$ 9.73	$15.38
% Liquid Assets in Mutual Funds	26.5%	22.3%
Number of Mutual Funds	1.18	0.49
Number of Mutual Fund Families	1.02	0.17
Perceived Riskiness[1]	1.80	0.86
Likelihood of Future Mutual Fund Investments[2]	2.90	1.34
Type of Fund	Load Fund	43.3%
	No-Load Fund	17.4%
	Don't Know	39.3%
Fund Investment	Domestic	20.6%
	International	7.1%
	Don't Know	72.3%
Fund Management Style	Equity	20.5%
	Fixed Income	4.5%
	Don't Know	75.0%

1. 5 point scale: 1 = not-at-all risky; 5 = extremely risky.
2. 5 point scale: 1 = considerably less likely; 5 = considerably more likely.

3.2. *Investor groupings*

Cluster analysis permitted grouping investors on the basis of both information sources and selection criteria. Four groups were formed from the cluster analysis of information sources (table 3a). These groups differed from each other in terms of the focus of their information-gathering efforts.

The largest of the four groups was Commission-Based Advisees (36.7 percent of the sample). Its major distinguishing feature is the disproportionately high importance of commission-based financial advisors as an information source, reportedly as high as published performance rankings. Advertising and seminars have relatively high importance compared to some other groups.

Table 3. Investor Groupings

3a. Information-source groups: means[1]

Information Source	Sample Mean	Commission-Based Advisees	Advertising-Driven Investors	Knowledge-Based Investors	Ranking-Only Investors
Published Performance Rankings	4.57	4.40*	4.69*	4.03*	4.81*
Advertising	3.13	3.02	4.31*	1.97*	2.63*
Commission-Based Financial Advisors	2.60	4.41*	1.89*	1.04*	1.43*
Seminars	1.89	2.53*	1.34*	3.34*	1.20*
Recommendations of Friends/Family	1.74	1.76	2.37*	1.38*	1.33*
Recommendations of Business Associates	1.56	1.62	1.50	1.61	1.52
Fee-Based Financial Advisors	1.34	1.01*	1.21*	3.73*	1.23*
Books	1.17	1.18	1.06*	1.48*	1.16
Direct Mail	1.11	1.13	1.08	1.12	1.10
Group Size (% of total)	100%	36.7%	24.0%	7.8%	31.5%

3b. Selection-criteria groups: means[1]

Selection criteria	Sample Mean	Price-Insensitive Performance	Service-Substance	Price-Sensitive Performance
InvestmentPerformanceTrackRecord	4.62	4.64	3.20*	4.87*
Fund Manager Reputation	4.00	4.06*	2.83*	4.09*
Scope (Number of funds in family)	3.94	3.93	2.18*	4.35*
Responsiveness to Enquiries	2.30	2.07*	3.28*	2.73*
Management Fees	2.28	1.68*	1.72*	4.09*
Investment Management Style	1.68	1.52*	3.95*	1.63
Additional Features (checking, brokerage)	1.38	1.32	1.88*	1.44
Confidentiality	1.35	1.23*	3.28*	1.25*
Community Service/Charity Record	1.09	1.06	1.38*	1.13
Group Size (% of total)	100%	69.8%	5.3%	24.9%

[1]5 point scale: 1 = not-at-all important; 6 = extremely important.
*Significantly different from the sample mean at the alpha = 0.05 level.

The major distinguishing feature of Advertising-Driven Investors (24.0 percent) is the high importance of advertising as an information source, comparable to published performance rankings. In addition, recommendations of friends and family are the most important of all four groups.

The small Knowledge-Based Investors group (7.8 percent) was the most distinctive. The title for this group was chosen based on the members' reliance on information sources which generally require more time investment and focus on the theory and process of investing (for example, books, seminars, and the less sales oriented fee-based advisors were all relatively more important to this group). Fee-based financial advisors are extremely important, almost as much as published performance rankings which is of least relative important to this group. Members are the most reliant on information from seminars and least on advertising.

Finally, for Ranking-Only Investors (31.5 percent), published performance rankings are by far the most important information source. Advertising has some importance, but less than for Commission-Based Advisees and Advertising-Driven Investors.

Although our descriptive analysis showed that overall published performance rankings was the most important information source in aggregate, it clearly dominates other sources only for Ranking-Only Investors. Other sources rival the importance of published performance rankings for the other three groups, suggesting that investors gather information from multiple sources.[10]

Three groups were formed from the cluster analysis of selection criteria (table 3b). These groups differed from each other in terms of the selection criteria employed for mutual fund investment decisions.

The Price-Insensitive Performance group (69.8 percent of the sample) is by far the largest of the three; means are close to the sample mean for most variables. However, compared to the mean, this group displays both a lower concern for management fees (similar to the Service-Substance group) and for responsiveness to enquiries. Major selection criteria are investment performance track record, fund manager reputation, and scope of fund family.

The small Service-Substance group (5.3 percent) differs substantially from the sample as a whole. Its members attach large importance to responsiveness to enquiries, investment management style and confidentiality (much greater than the sample mean), and investment performance track record (much less than the sample mean). They attach much less importance to scope and fund manager reputation than the sample mean.

Finally, the Price-Sensitive Performance group (24.9%) is similar in many ways to the Price-Insensitive Performance group, but investment performance track record, scope, and responsiveness to enquiries is even more important. The critical difference is the high level of importance attached to management fees.

Although investment performance track record is the most important selection criteria for the two largest groups (i.e., Price-Insensitive Performance, Price-Sensitive Performance), other variables are important selection criteria. For the Service-Substance group, investment performance track record is no more important than two other factors, and is dominated by investment management style.[11]

The four information source (IS) groups and the three selection criteria (SC) groups were each formed from the same set of investors. We might expect the two sets of groups to be interrelated such that membership of a particular information source group is nonrandomly distributed among the selection criteria groups, and vice versa. A cross-tabulation confirms strong relationships between the two sets of groups (table 4).

As we might expect, of the 1243 Commission-Based Advisees (IS), fully 88.3 percent are members of the Price-Insensitive Performance (SC) group. In addition, 75.6 percent of the 812 Advertising-Driven Investors (IS) are members of the same Price-Insensitive Performance (SC) group. The small number of Knowledge-Based Investors (IS) (8.8 percent of the total sample) is concentrated (52.3 percent) in the Service-Substance (SC) group. Finally, the Ranking-Only Investors (IS) were split fairly equally between the Price-Insensitive Performance (SC) and Price-Sensitive Performance (SC) groups.

Viewed from the perspective of the selection criteria groups, substantial numbers of the Price-Insensitive Performance (SC) group were in all information source clusters except Knowledge-Based Investors (IS); almost twice as many were Commission-Based Advisees (IS) as members of the other two groups. By contrast, 75.8 percent of the Service-Substance (SC) group were concentrated as Knowledge-Based Investors (IS). Finally, a majority of the Price-Sensitive Performance (SC) group were Ranking-Only Investors (IS); a substantial number were also Advertising-Driven Investors (IS).

Of the 12 composite groups formed by crossing the four information-source and the three selection-criteria groups, just four groups (minimum size, 482), account for fully

Table 4. Cross-tabulation of information-source and selection-criteria groups

	Selection-criteria groups							
Information-Source Groups	Price-Insensitive Performance		Service-Substance		Price-Sensitive Performance		*Information-Source Groups*	
Commission-Based Advisees	**1097**[1]	88.3%[2]	**29**	2.3%	**117**	9.4%	**1243**	36.7%
	46.4%[3]		15.9%		13.9%			
Advertising-Driven Investors	**614**	75.6%	**3**	0.4%	**195**	24.0%	**812**	100%
	26.0%		1.6%		23.2%		24.0%	
Knowledge-Based Investors	**81**	30.7%	**138**	52.3%	**35**	17.0%	**264**	100%
	3.4%		75.8%		4.2%		8.8%	
Ranking-Only Investors	**573**	53.7%	**12**	1.1%	**482**	45.2%	**1067**	100%
	24.2%		6.6%		57.4%		31.5%	
Selection-Criteria Groups	**2365**	69.8%	**182**	5.4%	**839**	24.8%	**3386**	100%
	100%		100%		100%		100.0%	

[1]Figures in bold are the number of subjects in each cell.
[2]Figures to the right of bold represent the percent of row members in each cell.
[3]Figures below bold represent the percent of column members in each cell.

81.6 percent of the sample. For further analysis we select these groups, plus the distinctive (but relatively small) Knowledge-Based Investors (IS)/Service-Substance (SC) group.

3.3. Demographic characteristics of composite information-source/selection-criteria groups

Significant differences are found across the five composite information-source/selection-criteria groups for each of the seven demographic variables (table 5). However, mean differences are quite small for some variables, and significant differences between groups should be interpreted cautiously. High significance levels are driven by the very large sample size and, more deceptively, by several extremely small standard errors.

Despite the fact that the three Price-Insensitive Performance (SC) groups differ markedly in their use of information sources, in general, they are fairly similar demographically. The Commission-Based Advisees (IS) are slightly older than the other two Price-Insensitive groups (but younger than the sample mean), slightly more educated, and more likely to be male. They are least likely of *all* groups to reside in the Northeast, but are the most likely of *all* groups to fund their mutual fund purchases from salary income.

The Ranking-Only Investors (IS) are similar to the Advertising-Driven Investors (IS) in terms of age, education, and sex. However, they are the least likely of these three groups to be married and to rely on salary income for mutual fund purchases, but the most likely to reside in the Northeast.

Compared to the Price-Insensitive Performance/Ranking-Only Investors, members of the Price-Sensitive Performance/Ranking-Only Investors group are slightly older, slightly more educated, and much less likely to be female. They are much more likely to secure funds for mutual fund investments from nonsalary sources than all three Price-Insensitive Performance groups, and are the most likely of all groups to reside in the Northeast.

The small Price-Sensitive Performance/Ranking-Only Investors group is the most distinctive demographically and, as we shall see later, is also the most distinctive in its mutual fund investment behavior. Its members are the oldest of all groups, are most likely to be male and married, and are highly likely to reside in the Northeast. Perhaps most importantly, only 50 percent of their funds for mutual fund investments come from salary income.

3.4. Mutual fund investment behavior of composite information-source/selection-criteria groups

Significant differences are found across the five composite information-source/selection-criteria groups for each of the nine measures of mutual fund investment behavior (table 6). This appears to be a robust finding, for even if the most distinctive group, Service Substance/Knowledge-Based Investors, is removed and the analyses rerun, seven of the nine measures are still significant at 0.01.[12]

Table 5. Demographic characteristics of composite information-source/selection-criteria groups

Variable	Measure	Sample Mean	Price-Insensitive Performance/ Commission-Based Advisees	Price-Insensitive Performance/ Advertising-Driven Investors	Price-Insensitive Performance/ Ranking-Only Investors	Price-Sensitive Performance/ Ranking-Only Investors	Service-Substance/ Knowledge-Based Investors	$F^{\sim}$ $Chi^{2\dagger}$	d.f.	Significance level
Group Size	#	3386	1097	614	573	482	138			
Age	years	47.1	46.9	44.7*	46.1	49.0	50.7*	~9.2	4	0.0001
Education	college (%)	80.8%	82.4%	78.3%	79.6%	81.5%	81.2%	†4.9	4	0.037
Sex	female (%)	39.2%	37.3%	44.7%*	44.9%*	34.4%*	29.7*	†26.8	4	0.0001
Marital status	married (%)	74.5%	79.8%*	76.2%	69.8%*	69.7%*	81.9%	†32.7	4	0.0001
Geographic location	northeast (%)	34.1%	17.1%*	32.7%	40.5%*	53.5%*	48.6%*	†247.7	4	0.0001
Geographic location	>10% of sample (#)	6	6	6	5	2	3	—	—	—
Source of funds	salary (%)	85.8%	93.5%*	91.2%*	89.0%*	77.4%*	50.0%*	†264.4	4	0.0001

~Two-way ANOVA, *F*-statistic reported.
†Chi-square statistic.
*Significantly different from the sample mean at the alpha = 0.05 level.

Table 6. Investment behavior of composite information-source/selection-criteria groups

Variable	Sample Mean	Price-Insensitive Performance/ Commission-Based Advisees	Price-Insensitive Performance/ Advertising-Driven Investors	Price-Insensitive Performance/ Ranking-Only Investors	Price-Sensitive Performance/ Ranking-Only Investors	Service-Substance/ Knowledge-Based Investors	$F\sim$ Chi^{2†}	Significance Level
Group Size	3386	1097	614	573	482	138		
Assets Invested ($000s)	$ 9.73	4.9 (6.6)††*	4.1 (4.3)*	7.2 (11.0)*	18.0 (19.1)*	30.3 (34.9)*	~209.7	0.0001
Liquid Assets in Mutual Funds (%)	26.5%	26.3%	27.3%	27.4%	27.3%	18.8%*	~4.8	0.003
Number of Mutual Funds	1.18	1.06*	1.13	1.22	1.32*	1.49*	~54.1	0.0001
Number of Fund Families	1.02	1.00	1.01	1.03	1.05*	1.08*	~12.5	0.0001
Perceived Riskiness of Mutual Fund Investments[1]	1.80	1.78	1.78	1.77	1.75	2.20*	~8.5	0.0001
Likelihood of Future Mutual Fund Investments[2]	2.90	3.46*	2.74	2.34*	2.26*	4.28*	~171.1	0.0001
Type of Fund (%):								
Load Fund	43.3%	61.9*	35.7*	31.4*	37.8*	10.1*		
No-Load Fund	17.4%	3.9*	16.0	21.5*	18.1	89.9*		
Don't Know	39.3%	34.2*	48.4*	47.1*	44.2*	0.0*	†805.4	0.0001
Fund Investment (%):								
Domestic	20.6%	16.0*	12.4*	19.7	24.5*	63.8*	†399.2	0.0001
International	7.1%	6.8	2.9*	3.5*	8.7*	29.7*		
Don't Know	72.3%	77.1*	84.7*	76.8*	66.8*	6.5*		

Table 6. Continued

Variable	Sample Mean	Price-Insensitive Performance/ Commission-Based Advisees	Price-Insensitive Performance/ Advertising-Driven Investors	Price-Insensitive Performance/ Ranking-Only Investors	Price-Sensitive Performance/ Ranking-Only Investors	Service-Substance/ Knowledge-Based Investors	$F^{\sim}$ Chi^{2†}	Significance Level
Fund Management Style (%)								
Equity	19.1%	13.7*	14.7*	16.8	19.5	90.6*	†514.1	0.0001
Fixed Income	4.3%	3.4	4.6	4.2	4.8	8.7*		
Don't Know	76.6%	83.0*	86.9*	79.1	75.7	0.7*		

1. 5 point scale: 1 = not-at-all risky; 5 = extremely risky.
   ~ All tests are two-way ANOVAs with 6 degrees of freedom.
   ††Figures in parentheses are standard deviations.
2. 5 point scale: 1 = considerably less likely; 5 = considerably more likely.
   †Tests are Chi-square with 12 degrees of freedom.
   *Significantly different from the sample mean at the alpha = 0.05 level.

All three Price-Insensitive Performance (SC) groups are small mutual fund investors. The Commission-Based Advisees (IS) are distinguished from their fellow Price-Insensitive Performance (SC) members in terms of their higher likelihood of making future mutual funds investments. As might be expected, they are most likely to buy load funds and to know that they have done so. The Ranking-Only Investors (IS) own the most mutual funds, but roughly half of this group and the Advertising-Driven Investors (IS) are ignorant of whether they purchased load or no-load funds. All three groups are ignorant of the domestic/international dimension of their investments and of the fund management style.

This Price-Sensitive Performance/Ranking-Only Investors group invests twice the mean sample mean amount in mutual funds and in the second highest number of funds. However, they are roughly as ignorant of their investments as the three Price-Insensitive Performance groups.

Finally, the small Service Substance/Knowledge-Based Investors group has the most assets invested in mutual funds, but their investments represent the smallest percent of liquid assets. They invest in the most mutual funds and fund families, are most likely to invest in the future, yet perceive mutual funds as more risky than the other groups. Compared to all other groups, they are highly knowledgeable about their investments, purchase mainly no-load funds, and invest relatively heavily in funds with an international focus.

4. Discussion

This study analyzed self-report data from 3386 mutual fund investors. The analysis focused on information sources and selection criteria employed in the investment process, and the relationship between these process dimensions and both mutual fund investment behavior and investor demographics. A key feature of the analysis was the formation of two sets of groups, one set comprising groups that were homogeneous in terms of information sources employed, the second comprising groups that were homogeneous in terms of selection criteria. These two sets of overlapping groups were combined, and five of the resulting composite groups (comprising 85.8 percent of the sample) were examined for their mutual fund investment behavior and investor demographics.

In general, the results demonstrated support for our working hypothesis that information sources, selection criteria, and mutual fund investment behavior are related. First, the high degree of interrelationship among the four information-source groups and the three selection-criteria groups supported the anticipated relationship between information sources and selection criteria. Second, the relationship of information sources and selection criteria to mutual fund investment behavior was demonstrated by the significant differences found for the five composite information-source/selection-criteria groups across several mutual fund investment behavior variables. Finally, relationships to investor demographics were demonstrated in a similar fashion.

Extant research on mutual funds has focussed on performance and risk as the two primary attributes used by investors in selecting among mutual funds. The self-report data from this study do not in general contradict this approach. Overall, published

performance rankings and investment performance track record were, respectively, the most important information sources and selection criteria employed; for three of the four information-source groups and two of the selection-criteria groups, these performance-related variables were the most important.

However, both the aggregate results and results from the formation of information-source and selection-criteria groups suggest that financial performance is only one of several factors considered by investors in making investment decisions for mutual funds. For each of the four information-source and three selection-criteria groups, variables other than performance played an important definitional role. Furthermore, for the Commission-Based Advisees (IS) group, Commission-Based Financial Advisors were equally as important as published performance rankings, while for the Service-Sensitive (SC) group, investment performance track record was dominated by other factors.

Taken overall, these results suggest support for a multi-attribute model of mutual fund investor behavior that includes attributes (characteristics) in addition to risk return. Indeed, for investors such as members of the Service-Sensitive (SC) group, it may be quite misleading to study merely risk return.

An unexpected finding was that the mutual fund investors studied were in general uninformed regarding the nature of their investments. Only 60.7 percent knew whether their investments were in load or no-load funds; no more than 25.0 percent were familiar with the investment management style; and only 27.7 percent were apprised of the domestic/international dimension of their investments. One obvious explanation for this result is that the questionnaire was poorly designed (Leigh and Martin, 1987). However, analysis of differences among the composite information-source/selection-criteria groups demonstrates that this explanation is incorrect.

Of the five composite groups, four groups were uninformed about their investments. By contrast, a single group comprising barely four percent of the total sample (Service Substance (SC)/Knowledge-Based Investors (IS)) was exceptionally knowledgeable. This result presents clear evidence that the high proportion of "Don't Know" responses was not merely an artifact of the questionnaire design. First, the composite groups were formed according to process-based, information-source and selection-criteria variables; investment behavior responses were not used to form the groups. Second, if the "Don't Know" responses resulted from poorly written questions, the proportion of these responses would be expected to be roughly equivalent across groups. This was not the case, for one small group comprised highly knowledgeable investors. By contrast, a substantial proportion of members of the other four groups appeared to know relatively little about its investments. (For example, while all of the Service-Substance/Knowledge-Based Investors knew whether their investments were load or no-load, 41.8 percent of the members of the other four groups did not know.) These mutual fund investors seem to resemble the naive investors conjectured by Goetzmann, Greenwald, and Huberman (1992).

The emergence of the small, highly knowledgeable group was quite unexpected. Not only was this group substantially different from the other four groups in terms of knowledge of its investments, its mutual fund investment behavior was also quite different—members of this group had the most assets invested, lowest percent of liquid assets, most mutual funds, most fund families, and greatest likelihood of future investments. There were also several differences in investment behavior among the other four composite groups.

Finally, the small knowledgeable group differed from the other four groups in terms of several important demographic variables; most striking were the relatively low proportion of invested funds from salary and the members' predominantly northeast location. As noted earlier, several differences also emerged among the other groups.

Scholars in finance and economics may view the results of this study through the prism of Lancaster's (1966) multi-attribute model of consumer choice (Goetzmann, Greenwald, and Huberman, 1992). This approach is very familiar to consumer behavior researchers who also typically view the product space in multi-attribute terms. In their view, consumer purchase decisions are based on the degree to which each of the products in the choice set possesses the individual attributes in the product space, the importance the consumer places on each attribute, and the particular choice rule used to make the purchase decision. Consumer behavior researchers also expect to find that investors can be grouped into "market segments" according to dimensions of the purchase process, such that there is homogeneity within groups and heterogeneity across groups.

In this study, we explored several process dimensions that might be included in a multi-attribute model of investor choice. Such variables as responsiveness to enquiries, confidentiality, additional features, scope (number of funds in family) may weigh far more heavily in the investment decision than an extra point of performance return. Future research should attempt to isolate the full set of such attributes and their marginal trade-offs.

In addition, notwithstanding the fact that the sales mechanism for closed-end mutual funds differs from open-end funds, a multi-attribute approach might prove to be a useful vehicle for addressing the anomaly of these funds selling at substantial discounts or premia to the underlying net asset value of their component securities. Whereas De Long, Shleifer, Summers, and Waldman (1990) constructed a model comprising two types of investors (i.e., rational traders and noise traders) to explain the closed-end mutual fund puzzle, perhaps an approach that considered the full set of attributes in purchase and redemption decisions might throw some light on this anomaly.

Regardless of the importance of these results for finance theory, the findings from this study have important implications for the strategies of mutual fund companies. Perhaps the most noteworthy finding was the identification of a limited number of groups (segments) based on the process dimensions of information source and selection criteria. Strategies emphasizing only investment performance are likely to find only a limited, yet very interested, segment of consumers who really understand the financial dimensions of their investments. Other investors appear to focus, in addition, on information sources and selection criteria that are not performance related.

If we assume that mutual fund companies set profitability objectives and are constrained by scarce resources, operational objectives should involve maximizing fund inflow (and minimizing fund outflow), in part, because of the substantial economies of scale enjoyed in managing larger funds (Dermine and Roller, 1992). Mutual fund managers should recognize the very real trade-offs in allocating resources to improve fund performance versus placing those resources to improve performance on a variety of other investor-related attributes (Sirri and Tufano, 1992). The results of this study suggest that it is naive to assume that funds will necessarily flow to those mutual funds with the highest

financial performance. Perhaps, as Goetzmann, Greenwald, and Huberman (1992) have implicitly suggested, there may exist an entire group of investors which is minimally concerned with return. Alternatively, perhaps the marginal utility of extra return above some minimum value is low compared to the utility received from better investor service, better information provision, and so forth. Certainly, the evidence regarding management fees is quite compelling; it is a relatively unimportant criterion for 75 percent of mutual fund investors.

Recent developments in the mutual fund industry are consistent with our findings. Industry leaders such as Fidelity, Dreyfus, and Vanguard package services with mutual fund products. Virtually each major fund family now offers a limited number of no- (or low-) fee exchanges between funds in its own family; mutual fund investment transactions by telephone are commonplace among major fund families. Smaller players provide additional support. Wells Fargo, a San-Francisco–based bank recently introduced a new service through its automated teller machines (ATMs). Wells Fargo customers may now purchase, redeem, or transfer funds within its Stagecoach family of bond and equity mutual funds through any of the bank's 1700 ATMs. These actions clearly place emphasis on convenience and service, rather than on traditional risk and return elements of the purchase decision.

The finding that investors concentrate their mutual fund investments in a highly limited number of fund families demonstrates the major importance of selling funds (any fund) to new mutual fund investors. The actions of such firms as Dreyfus and Fidelity in strongly advertising low-fee, high-return money market funds (e.g., Spartan) as "loss leaders" is consistent with this finding.[13] It also demonstrates the value of building marketing-focused consumer data bases that both enhance cross-selling opportunities to investors in the fund family, and retain data on interested potential investors so that direct-marketing efforts can be continued.[14]

The identification of market segments that rely differentially on various information sources and employ variously weighted selection criteria is consistent with recently developed hub and spoke mutual funds. These funds embrace a single investment vehicle, yet secure assets in a variety of different ways from several investor groups or segments.

This study has no more than scratched the surface of the mutual fund investment decision. We have not addressed mutual fund redemptions, or transfer of funds from one account to another, within or without, the fund family. Nonetheless, we believe that the consumer behavior perspective which we have introduced is complementary to research currently being conducted in the finance and economics literature.

Our findings convince us that a model of mutual fund purchase that focuses solely on risk and return is far too simplistic to capture the real everyday behavior of the over 20 million or more Americans who are invested in mutual funds. Investment performance seems to be only one of several factors that investors consider in making mutual fund purchase and sale decisions. From the classic economics and finance perspective, many investors may not be utility maximizers if the analysis is restricted to return and risk. However, they may be acting entirely rationally; it is simply that factors other than financial performance are important to them when they make their investment decisions.

Notes

1. $1.056 trillion in 2984 stock, bond, and income funds; $543.6 billion in 864 money market and short-term municipal bond funds.
2. A large body of research has examined the persuasive ability of information across the dimensions of source credibility, source attractiveness, and source power (McGuire, 1985).
3. The questionnaire is available from the authors upon request. Exact wording for questions 1 and 2 is included in table 1; the balance of the questions were straightforward. For example, to assess knowledge of domestic content, the following question was asked, "Would you describe your principal mutual fund investment as having a domestic or an international focus?"
4. Nonresponse bias may have occurred, but a misunderstanding with the research firm led to collection of insufficiently detailed records to assess this bias. Some households contacted may have invested in mutual funds but declined to participate, thus inducing bias. Without more specific data on the numbers and profiles of these individuals, we could only speculate on the magnitude of any bias. However, we are comfortable with the relatively high response rate achieved (25 percent of the general population are mutual fund investors; 19 percent completed our telephone survey. Thus, if our random sample was representative, a "response rate" of over 75 percent (0.19/0.25) was achieved). This high response rate is a strong indicator that any nonresponse bias, if present, had a limited effect on our results.
5. Figures in () are those from this study; figures in [] are those of U.S. mutual fund purchasers (*Mutual Fund Fact Book,* 1993).
6. Punj and Stewart (1983) discuss the strengths of the *K*-means procedure versus other clustering techniques. They assert that *K*-means is generally superior to hierarchical techniques, inasmuch as it is least affected by the presence of spurious attributes, handles large sample sizes efficiently, and is comparatively insensitive to outliers.
7. Published Performance Rankings was an information source; Investment Performance Track Record was a selection criterion. Inclusion of these two related constructs was justified after discussions with several investment advisors. They believed that investors used Performance Rankings in two different ways—namely, as an information source to gather data about the availability of mutual funds and fund families and, in a more strictly economic sense, as a selection criterion, a proxy for anticipated future return.
8. As expected, Investment Performance Track Record and Fund Manager Reputation were reasonably highly correlated ($r = 0.48$). However, subjects appeared to respond to two separate constructs as evidenced by their ability to identify the fund manager, particularly when they owned well-known, popular funds.
9. These were the only variables for which the opportunity of a "Don't Know" response was provided.
10. Discriminant analysis confirmed the variables with most discriminatory power in defining the groups. As expected, the strongest discriminator was use of financial advisors (commission-based and fee-based); advertising, seminars, and recommendations from friends and family added discriminatory power.
11. Discriminant analysis showed that, although the strongest discriminator in defining the groups was management fees, responsiveness to enquiries, confidentiality, investment performance track record, investment management style, fund manager reputation, and scope all added discriminatory power.
12. Only percent of liquid assets in mutual funds and perceived riskiness of mutual fund investments are no longer significant.
13. Goetzmann, Huberman, and Peles (1994) raise the intriguing possibility that a major function of advertising is to confirm to current investors that they made a wise investment choice and so reduce their level of cognitive dissonance (Festinger, 1957).
14. For identification of marketing issues faced by mutual fund companies, see Capon (1992) for case studies "Fidelity Management and Research Company (A) and (B)."

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