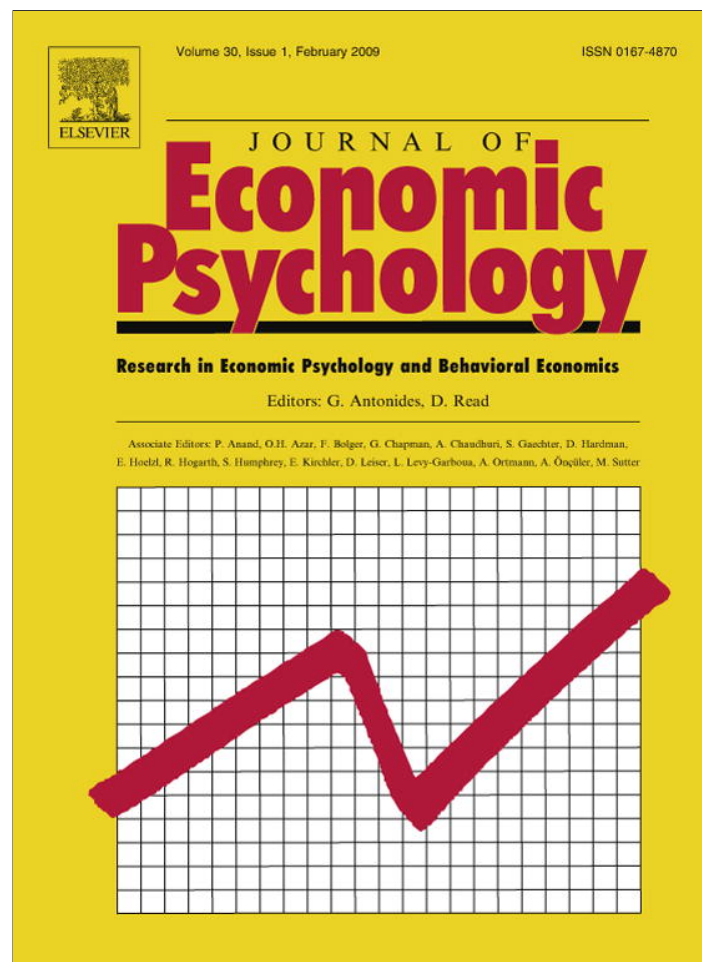


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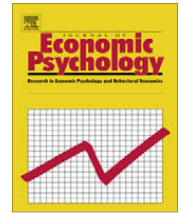
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ABSTRACT

Few will disagree that information search is essential in making investment decisions, a high-consequence decision task. Yet, the sources of investor information have never been used as a segmentation base to study investment behavior. We analyze survey results of investors in the US using information search, demographic, psychological, and involvement variables. Cluster analysis shows five typologies for investor information search based on sources of information. We also discover the majority of investors perform moderate- to low-information gathering strategies. The 11 demographics variables were insufficient to describe the typologies, although we did find higher-educated male investors with higher earnings more likely to practice a high-information search strategy, confirming previous studies. Turning to the psychological and involvement variables, we develop distinct typologies and identify several significant predictors for the five investor groups. For the majority of investors, investment decisions present a considerable and unwillingly undertaken challenge, and this study concludes with a discussion of how to target these investor typologies with approaches grounded in behavior-change theory.

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1. Introduction

“Information search is essential in making a wise choice” (Guo, 2001, p. 505). Few will disagree that this statement is true for making investment decisions. The ever-changing financial markets, the wealth of information, and the proliferation of financial products render investors' information search essential and challenging at the same time. Furthermore, because of the potential for a large financial loss and the high costs of revising or recovering from a wrongful investment decision, choosing investments qualifies as a high-consequence decision task that requires the consumer's attention (Kahn & Baron, 1995; Kunreuther et al., 2002).

In previous research, little attention has been devoted to analyzing information search strategies and to using these strategies to study consumer investment behaviors. Indeed, to the best of our knowledge, the sources of investor information have never been used as a segmentation base to study investment behavior. The present paper seeks to partly fill this void with an exploratory, cross-sectional study of United States investors' information search behavior. The present study was designed to extend previous efforts in three ways:

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(1) First, we identify the information search typologies of consumers with respect to making investment choices. With previous studies focusing mostly on durable consumer goods, we examine whether the search strategies identified there apply for consumers' search for investment information.

(2) Second, we assess the variables that influence investor information search. While the demographic and behavioral aspects of investor behavior present an ever-growing field of research, these variables have not yet been linked to investor information search patterns. We will assess this relationship to identify determinants of information search strategies for investment information.

(3) Third, we provide direct empirical evidence of the linkage between investor information search strategies and their involvement in investment decision making. This linkage is particularly important due to the limited opportunities for consumers to practice appropriate investment strategies and the many changes in the financial markets over time.

The article is divided into four sections. First, we briefly review the literature on external information search behavior and its relevance for the present study. Second, we describe how participants in a survey of United States' investors responded to questions about their information search behavior, and we then employ cluster analysis to group and study investor search strategies. Finally, we conclude with a brief discussion of our findings.

2. Theoretical background

2.1. Information search

The cost-benefit framework is commonly used to understand the relevance of rational restrictions on acquisition of information (Stigler, 1961). While it assumes that the more information consumers have, the better decisions they will make, the information can be expensive to obtain, relative to its benefits. This trade-off helps to explain the differential search behavior among consumers: consumers with high search costs will engage in lesser information search than those whose search costs are lower. Application of the cost-benefit framework in the consumer behavior literature consistently results in three intensity levels of information search: high, moderate, and low. Table 1 compares search strategies identified in studies most methodologically similar to the design of the present study. We find three surprisingly consistent aspects that may repeat themselves for investor information search: first, the definition of the three strategies is commonly based on frequency criteria: the amount of time spent on the search, measured in hours or weeks; the number of contacts by phone or visit if a time-based measure was not appropriate; and the number of sources used to gather information. Depending on the focus of the study, the number of variables used to measure time, contacts, and sources vary however. For example, in the studies presented in Table 1 the number of time-related variables ranges from one to eight; the number of information sources ranges from 5 to 10. A second finding concerns the types of information sources. They consist of print, interpersonal, and online sources. The latter appear only in the more recent study. Third, while the distribution of the sample to the three search strategies varies across studies, there is always a smaller number of participants practicing a high-search strategy rather than a low-search one. The middle group of moderate-search consumers seems the most diverse group, a fact which has been examined in the Kiel and Layton (1981) article.

Given the three search strategies and information sources that seem common among consumers and the cost-benefit considerations they are based on, it would seem likely that the acquisition of investment information follows a similar pattern of a smaller group of investors practicing a high-search strategy, a comparably larger group of investors practicing a low-search strategy, and a more diverse group of consumers positioned in the middle of both extremes.

Table 1
Consumer information search strategies

Study	Criteria (all; time/contacts/sources/types of sources)	High-search strategy	Moderate-search strategy	Low-search strategy	Selective-search strategy	Item under investigation
Claxton, Fry, and Portis (1974)	10; 1/1/6/2	Thorough (store intense), 5%	Thorough (balanced), 44%	Non-thorough, 34%	N/A	Furniture and appliances; N = 224
Kiel and Layton (1981)	12; 3/4/5/2	High-information seekers, 19%	High retailer search, 31%; High interpersonal search, 13%; Extended time search, 13%	Low-information seekers, 24%	N/A	Automobile; N = 194
Furse et al. (1984)	13; 8/1/10/2	High-search, 5%; High-self-search, 12%	Moderate-search, 32%	Low-search, 26%	Retail-shopper, 5%; Purchase-pal-assisted, 19%	Automobile; N = 1031
Klein and Ford (2003)	19; 8/2/9/3	Active shoppers, 32%	Late buyers, 29%	Early buyers, 39%	N/A	Automobile; N = 275

2.2. Differentiating variables

Literature on the particular topic of external information search for investment information is scarce. To our knowledge, there is only the one study by Lin and Lee (2004) that assesses investor information search. Our study joins Lin and Lee (2004) in relating investor information search with various information sources and participant characteristics. Lin and Lee pool cross-sectional data from the 2000 to 2001 MacroMonitor survey, a retail financial services database. Our study differs from theirs in two important respects. First, Lin and Lee focus on the effects of four demographic (age, education, income, and amount of investment) and two psychological variables (risk tolerance and subjective knowledge). Our study considers the effects of several additional demographic variables (e.g., gender, race, financial assets) and search antecedents that relate to investor personality and involvement. Second, Lin and Lee focus only on regression analysis, while our study also employs cluster analysis to further segment investors.

To identify a more comprehensive number of antecedent variables for investor search behavior, we turned to the literature at the intersection of economics, finance, and psychology. This literature provides a number of explanations as to why investors may differ with respect to information search. These explanations can be grouped into three categories: (1) differences attributable to specific demographic characteristics of the individuals; (2) differences attributable to psychological measures associated with financial behavior; and (3) differences attributable to individual's varying levels of personal involvement with the decision task.

2.2.1. Differences attributable to demographic characteristics

Information search has been shown to be related to the most relevant demographic variables, such as gender, age, education, marital status, employment status, and family size (see, for example, reviews in Beatty & Smith (1987), Guo (2001), Laroche, Cleveland, & Browne (2004)). However, the influence of these variables on information search depends heavily on the subject under investigation. For example, Bloch, Sherrell, and Ridgway (1986) note the significance of gender variables. In their study, women engaged in a more ongoing search for clothing than did the men, while the opposite was true for computers. In their study of investor information search, Lin and Lee (2004) find that younger age is positively related with investor information search while Laroche et al. (2004) had to acknowledge, contrary to expectations, that the information search processes of older consumer did not appear to be less complex than those for younger and middle-age consumers with respect to in-store information acquisition. Because of the voluminous work existing in the area, a comprehensive review of each of the demographic variables is beyond the scope of this study. A selected list of empirical studies is included in Table 2, and it outlines the predicted effects of each variable on information search and asset holding. The hypothesized relationships were based on a review of the relevant literature. We use this set of variables in the present study to assess their influence on investor information search strategies. Note that the hypothesized relationships presented in Table 2 are general and do not reflect the different search strategies identified in Table 1.

2.2.2. Differences attributable to psychological measures

Observed behavioral differences between investors may be also attributable to psychological variables as their role has been extensively documented in the literature on both information search and financial decision making. In the current study we combine both fields by investigating whether psychological variables that have been shown to relate to the asset allocation strategies of individual investors influence their information search strategies prior to asset acquisition.

Table 2
Hypothetical effects of the relationship of principal demographic variables on information search

	General information search ^a	Investor information search ^b	Investor stock holdings	Investor stock holdings (selected literature sources)	Hypothesized effect
Gender (male = 1)	–	∅	+	Bajtelsmit and Bernasek (1996), Barber and Odean (2001), Bernasek and Shwiff (2001), Jianakoplos and Bernasek (1998), Powell and Ansic (1997), Prince (1993)	+
Age	?	–	–	Agnew, Balduzzi, and Sundén (2003), Ameriks and Zeldes (2004), Shum and Faig (2006)	–
Race (white = 1)	∅	∅	?	Gutter, Fox, and Montalto (1999)	?
Marital status (married = 1)	?	∅	–	Agnew et al. (2003), Meier, Kirchler, and Christian-Hubert (1999), Powell and Ansic (1997), Sundén and Surette (1998)	–
Family size	?	∅	–	(Men) + (women) Lewellen, Lease, and Schlarbaum (1977)	(Men) + (women)
Education	+	+	+	Lawrance (1991)	+
Employment status (ft = 1)	+	∅	+	Agnew, Balduzzi, and Sundén (2003) for time employed	+
Household income	?	+	+	Agnew, Balduzzi, and Sundén (2003), Lawrance (1991)	+
Total assets	∅	?	+	Shum and Faig (2006)	+

+/-/?/∅: Positive/negative/non-significant/unidentified relation to information search/stock holdings.

^a Beatty and Smith (1987), Guo (2001), Laroche, Cleveland, and Browne (2004).

^b Lin and Lee (2004).

We suggest that asset allocation and information search prior to allocation may follow similar patterns as the lack of portfolio diversification has been related to investor financial illiteracy (e.g., Benartzi, 2001; Merton, 1987).

The previous study most relevant for our own is Gunnarson and Wahlund's (1997) analysis of asset-building strategies for a representative sample of 1000 individuals in Sweden. Gunnarson and Wahlund explicitly address psychological variables that influence asset allocation. They identified six allocation strategies ranging from the "residual saving strategy" with few forms of saving and heavy reliance on liquid savings forms to investors practicing "divergent financial strategies" with risky, complex, and unusual assets in well-diversified portfolios. A set of seven psychological constructs was then identified that significantly affect the investors' allocation behaviors. Gunnarson and Wahlund find that the better diversified the investors' portfolios, the more positive their future orientation and perception of their economic situation and the stronger their economic interest, satisfaction with present financial situation, and risk tolerance. Findings on investors' confidence in financial professionals were inconsistent. It was highest among those investors who are heavily dependent because the professionals, for instance, manage the investors' pension funds.

In order to apply these psychological constructs to information acquisition behavior prior to asset allocation, Guo (2001) suggests the general guideline that variables that increase benefits or decrease costs of search, or do both, should lead to more search and vice versa. In this spirit, we suggest that the constructs identified by the Gunnarson and Wahlund study are related with investor information acquisition in the following three ways:

- (a) *Positive relationships to search:* Constructs may positively impact external search through three mechanisms. First, they may increase the benefit of search. For instance, risk tolerance does not change costs of search in terms of search difficulty in any way. When a person's risk tolerance increases, everything else being equal, the increased risk tolerance may increase the benefit of search, such as broader diversification as a result of search. Thus, higher tolerance levels are predicted to correlate with more search through increased perceived benefits.
- (b) In the second case, the psychological constructs may decrease costs of search. Investor discipline is a construct that may not increase benefit of search, but it may decrease costs of search because investors who invest regularly may have search strategies in place that would improve their efficiency in gathering and processing new information (Alba & Hutchinson, 1987). Thus, it is predicted that investor discipline correlates with more search through decreased cost of search.
- (c) In the third possibility, psychological constructs may increase benefit and decrease cost of search. Investment interest and future orientation are predicted to have a positive relationship with search activity because they increase search benefit and decrease cost of search. Investment interest does both in that search itself brings joy, which is a benefit, and joy reduces the hardship associated with search effort. Taking pleasure in planning to the future may affect search in a similar manner. For example, Lusardi (2001) finds that "thinking about retirement" significantly influences investor behavior. In her study, the investment holdings of those who have "hardly" thought about retirement were almost half the size of those who had thought about retirement. Other studies have discussed and demonstrated the importance of constructs such as future time perspective and future orientation on financial choices (see Lea, Webley, & Walker, 1995; Strathman, Gleicher, Boninger, & Edwards, 1994). Thus, taking pleasure in planning for the future is predicted to correlate positively with investor information search.
- (d) *Negative relationships to search:* On the other hand, psychological constructs may negatively impact external search. Financial satisfaction may decrease benefit of search as Gunnarson and Wahlund (1997, p. 227) note, "it is possible that the dissatisfaction in itself creates a favorable attitude toward innovative saving forms and active financial planning" – both of which may include information search. Thus, it is proposed that financial satisfaction correlates with lesser search through decreased perceived benefits. Similarly, investor confidence may abate search benefit and increase cost of search in that psychologically the willingness to search for new information about investing may be reduced if the investor is confident about his/her ability to make investment decisions. Kiel and Layton (1981) find this happening for car purchases: consumers with least self-confidence undertook greatest search activity both with respect to the aggregate search measure and the individual media search items. We have to add that investor confidence was the one major construct missing in Gunnarson and Wahlund's study that several other studies confirmed to significantly affect investment behavior, in particular investor trading behavior (e.g., Barber & Odean, 2001; Prince, 1993). For this reason, we added it to the here presented analysis.
- (e) *U-shape relationships to search:* Some variables related to consumer experience and product knowledge have an U-shape relationship with external search (Guo, 2001). It refers to findings that inexperienced and experienced groups of consumers seek more information (less information; in inverted U-shape relationships) compared to a moderately-experienced group. We suspect an U-shape relationship for investors' attitude toward financial professionals to explain Gunnarson and Wahlund's inconsistent finding for investors' attitudes toward financial professionals. According to Sniezek and Buckley (1995), experienced investors may exhibit a positive attitude to financial professionals because they use them to validate their independently-formed investment strategies, while the inexperienced investor may seek the professionals' help to have them make the decision for them. Literature on choice processes documents that for high-stakes decisions, such as investing, when trade-offs are painful to make and compensatory rules difficult to implement, consumers do not mind depending on a third party to help making the decision (Kahn & Baron, 1995). The larger the information asymmetry, however, the more completely the decision maker depends on the advisor and the fewer efforts go into independent information search (Jonas & Frey, 2003; Jungermann,

1999). As a result, the motivation behind a consumer's attitude toward using financial advisors may differ completely between high and low-search investors. Investors' attitude toward financial advisors is, thus, predicted to show a U-shape relationship to investor information search.

2.2.3. Differences attributable to personal involvement

Information search has been shown to be related to varying levels of involvement. In general, as the personal relevance of a decision task increases, involvement tends to increase. Highly involved consumers have been found to seek product information not only to augment product knowledge during a decision task, but also to experience the pleasure of dealing with a favorite product (Petty, Cacioppo, & Schuhmann, 1983). They, thus, exhibit both types of involvement: enduring involvement, an ongoing interest in a product or topic on a day-to-day basis; and situational involvement, a temporary interest occurring only in specific situations (Laurent & Kapferer, 1985). Although a consumer's enduring involvement is considered low for most products, one may experience high involvement with a few products on an ongoing basis. The investment junkie, for instance, possesses a high enduring involvement with the stock market.

According to Richins and Bloch (1986), in enduring involvement, a product is interesting and occupies the consumer's thoughts without the stimulus of an immediate purchase. We suggest that investments are products for which a broad range of involvement may exist. Some investors may deposit their monthly retirement contributions without spending time reviewing their portfolio or researching current market conditions. Other investors may experience a much higher enduring involvement with investments, following market watch websites, reading the Wall Street Journal, and belonging to an investment club. Obviously, the potential range of involvement with investments is broad.

Although enduring involvement is considered a stable personality trait, situational involvement is the complementary construct and presents a temporary phenomenon describing a person's level of involvement in specific situations, such as a purchase (Richins & Bloch, 1986). A high level of situational involvement may be observed in low-involvement information search, which typically is conducted for a limited period to ensure a high-quality purchase outcome. Low-involvement search has been labeled a "chore", more to be tolerated than enjoyed (Bloch et al., 1986; Mathwick & Rigdon, 2004). It is often exhibited in new employees who have to making retirement plan decisions within a certain time frame. A recent study of retirement plans has shown that about 60% of those investors never again revise that initial allocation (Brown & Weisbenner, 2007). In sum, involvement is predicted to relate positively with investor information search.

Given the high level of importance generally assigned to investment decision-making and its significance for consumer economic and psychological well-being, it would seem that investing represents a relevant context in which to investigate information acquisition behaviors.

3. Methodology

The present study presents analyses of a newly collected, nationally-representative sample of investors in the United States. The survey addressed investors who live in households with an annual household income of \$75,000 and higher. We interviewed the one household member "who is the most knowledgeable about saving and investing". The survey was conducted by telephone from October 2005 to February 2006. A total of 911 interviews were completed; 880 were used for the present research to account for missing variables. Participants were paid \$20 for their assistance.

Information sources variables: The types of information sources and the frequency of their use were measured with the question, "How often have you obtained information about investing from [source]?" Responses were rated on a five-point scale ranging from never = 1 to very often = 5. Information sources included five internet-based sources (general internet search; internet trading; market watch websites; investment analysis or management software; and email investment newsletters); three mass media sources (newspapers, magazines, newsletters, or books; TV programs; and radio programs); four interpersonal sources (friends or colleagues; classes or workshops; investment clubs; and financial advisors); and one workplace-based source.

Demographic variables: Gender (male = 1), race (white = 1), marital status (married = 1), and education (B.Sc. and higher = 1) were coded as 0/1 binary variables. Age, annual household income, and total financial assets entered the analyses as continuous variables.

Psychological variables: The influence of psychological factors on investor information search was measured by questions assessing future orientation, investor discipline, risk tolerance, attitude toward financial advisors, investment interest, investor confidence, and financial satisfaction. Future orientation was measured by a single item, "I like to plan for my financial future". Investor discipline was measured by a single item, "I choose to invest regularly even if it means I have to make some sacrifices elsewhere in my life". Responses for both measures were rated on five-point Likert scales ranging from strongly disagree = 1 to strongly agree = 5. Risk tolerance was assessed by a question used in the US Survey of Consumer Finance to assess this behavior, "Generally speaking, are you willing to take 1 = substantial financial risks to earn substantial returns; 2 = above average risks for above average returns; 3 = average risks for average returns; 4 = below average risks for below average returns; 5 = or no financial risks at all?" Item 4 was added to the SCF set of answers to account for investors who are between the average and no risk category.

Table 3
Cluster centers for investor information sources

Information sources	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	F Statistics
General internet search	4	4	3	2	1	301.999***
Investment analysis or management software	3	4	2	2	1	167.298***
Email investment newsletters	3	3	2	2	1	100.914***
Market watch websites	3	4	2	2	1	212.564***
Internet trading	3	4	2	1	1	229.335***
Newspapers, magazines, newsletters, or books	3	3	3	3	2	101.171***
TV programs	2	2	2	1	1	59.227***
Radio programs	2	2	2	1	1	41.115***
Financial advisor	4	2	3	3	3	23.125***
Friends or colleagues	3	2	2	3	2	71.174***
Classes or workshops	3	2	2	2	1	40.560***
Investment clubs	2	1	1	1	1	12.686***
Workplace	3	2	2	3	2	198.104***
Frequency of sources (SD)	2.926 (1.029)	2.565 (0.967)	2.048 (0.908)	1.995 (0.813)	1.476 (0.657)	
Number of sources (N = 13)	13	12	12	9	4	
N (=880)	10.8% (95)	11.1% (98)	24.1% (212)	24.1% (212)	30.0% (263)	

Note: Variables were coded on a five-point scale: never = 1, seldom = 2, sometimes = 3, often = 4, very often = 5.

*** $p < 0.001$.

Four questions were used to construct a composite measure of attitude toward financial advisors. The items were introduced by the statement: “Next I will ask for your opinions about financial advisors, whether or not you have ever consulted one”. The four items were as follows: “Financial advisors provide the information people need to make informed decisions”; “Financial advisors pressure people into making high-risk investments”; “Financial advisors listen carefully to concerns and questions”; and “Financial advisors charge too much for their services”. Responses were rated on five-point Likert scales ranging from strongly disagree = 1 to strongly agree = 5.

Investment interest was composed of responses to three statements: “Investing is exciting”; “Investing is satisfying”; and “I enjoy learning new things about investing.” Investor confidence consisted of responses to three statements: “I am confident about my ability to invest”; “I am knowledgeable about investing”; and “I wish I did not have to handle financial responsibilities (recoded)”. Financial satisfaction was constructed of four items: “I am satisfied with my current financial situation”; “I have a clear idea of what my financial needs will be during retirement”; “I am confident that I will have a financially secure future”; and “I am satisfied with my current investment mix”. All responses were rated on five-point Likert scales ranging from strongly disagree = 1 to strongly agree = 5.

Involvement variables: Respondents' involvement in investment decisions was measured by questions assessing three related constructs: decision authority, participation changes, and investment action. Decision authority was measured with one item: “Who makes the investment decisions in your household? Would you say ... yourself = 3, you with others = 2, others without you = 1.” Participation changes were measured with the question, “Over the years, would you say that your involvement in saving and investing has ... decreased, remained fairly stable, or increased?” Responses were rated on a three-point Likert scale ranging from –1 to 1. Investment action before making investment decisions were measured by five items and introduced by the statement: “Before you make specific investment decisions, how often do you first ... review your overall investment goals; consider the level of risk you are willing to take; determine what return you'd like to get from the investment; consider a variety of investment options; and check the current financial market conditions?” Responses were rated on a five-point scale ranging from never = 1 to always = 5.

Regarding the composite measures in this study, factor analysis was used to reduce a set of 42 attitudinal variables. A principal component analysis with Varimax orthogonal rotation resulted in 12 factors with an Eigenvalue greater than one. The results of the factor analysis were then used to compose psychological and involvement measures. As shown in Tables 6 and 7, the factor loadings were above the .600 threshold. Most reliability coefficients of the composite measures (Cronbach's alpha) were satisfying (i.e., greater than .70); none were below .60 for the full sample, but they did drop below .60 for individual clusters at three occasions.

Regarding the single measures in this study, such as the demographic measures, they had sufficiently high factor loadings, but factor analyses for reliability analysis did not confirm any related items. However, because the literature review confirmed their potential relevance for investor information search, we decided to add the single-item measures to our analyses and to cautiously interpret the results.

4. Results

The results from the different analyses are reported below. First, we describe the five investor typologies that emerge from a cluster analysis of investors' use of information sources. Second, we examine how the five investor clusters differ in their use of various media types. Next, we report results from several analysis of variance tests carried out in order to ex-

plore demographic, psychological, and involvement-related differences among the five investor clusters. Finally, we report the results of regression analyses conducted to determine the predictors of investor cluster membership by taking into account the full set of variables collected in this study.

Table 4
Variations among information scores of the clusters: ANOVA results

Clusters	Information source			
	Internet-based mean (SD)	Mass media mean (SD)	Interpersonal mean (SD)	Workplace mean (SD)
Cluster 1	3.301 (0.624)	2.653 (0.788)	2.695 (0.540)	2.800 (1.006)
Cluster 2	3.541 (0.515)	2.310 (0.681)	1.773 (0.422)	1.622 (0.856)
Cluster 3	2.115 (0.442)	2.303 (0.596)	1.901 (0.472)	1.538 (0.698)
Cluster 4	1.695 (0.477)	1.814 (0.489)	2.197 (0.455)	3.231 (0.740)
Cluster 5	1.243 (0.297)	1.393 (0.431)	1.803 (0.444)	1.586 (0.736)
All respondents	2.040 (0.917)	1.952 (0.715)	2.014 (0.542)	2.106 (1.068)
F Statistics	707.287***	135.189***	83.273***	198.104***
Medium	Pairs	Mean difference	Std. error	Sig.
Post hoc contrasts				
Internet-based ^b	1,2	-0.240	0.083	0.033
	1,3	1.186	0.071	0.000
	1,4	1.606	0.072	0.000
	1,5	2.058	0.067	0.000
	2,3	1.426	0.060	0.000
	2,4	1.846	0.062	0.000
	2,5	2.297	0.055	0.000
	3,4	0.420	0.045	0.000
	3,5	0.872	0.035	0.000
	4,5	0.452	0.038	0.000
Levene statistics			29.503	0.000
Interpersonal ^a	1,2	0.922	0.067	0.000
	1,3	0.794	0.057	0.000
	1,4	0.498	0.057	0.000
	1,5	0.892	0.055	0.000
	2,3	-0.128	0.056	0.275
	2,4	-0.424	0.056	0.000
	2,5	-0.030	0.055	0.989
	3,4	-0.296	0.045	0.000
	3,5	0.098	0.043	0.264
	4,5	0.394	0.043	0.000
Levene statistics			1.330	0.257
Mass media ^b	1,2	0.343	0.106	0.013
	1,3	0.349	0.091	0.002
	1,4	0.838	0.088	0.000
	1,5	1.260	0.085	0.000
	2,3	0.006	0.080	1.000
	2,4	0.495	0.077	0.000
	2,5	0.917	0.074	0.000
	3,4	0.489	0.053	0.000
	3,5	0.911	0.049	0.000
	4,5	0.422	0.043	0.000
Levene statistics			14.862	0.000
Workplace ^b	1,2	1.178	0.135	0.000
	1,3	1.262	0.114	0.000
	1,4	-0.431	0.115	0.002
	1,5	1.214	0.113	0.000
	2,3	0.085	0.099	0.912
	2,4	-1.609	0.100	0.000
	2,5	0.037	0.098	0.996
	3,4	-1.693	0.070	0.000
	3,5	-0.048	0.066	0.951
	4,5	1.646	0.068	0.000
Levene statistics			5.251	0.000

Note: Variables were coded on a five-point scale: never = 1, seldom = 2, sometimes = 3, often = 4, very often = 5.

^a Scheffé method for equal variances; ^b Games–Howell for unequal variances.

*** $p < 0.001$.

4.1. Investor search typologies

In this section, we report the information search typologies of consumers that were identified in a cluster analysis process. Following a multi-step cluster analysis process described in Schneider and Roberts (2004), the five-cluster solution proved the best solution for partitioning the interviewed investors into subsets that share similar information search behaviors. As shown in Table 3, the five-cluster solution produced statistically significant, high *F* values when analyzed for variance. Based on the results presented in the summary section below, we identified the following five clusters: *Cluster 1* (95 respondents; 10.8% of the analyzed investors), the “balanced investor” group practicing a multi-source, high-information strategy. These investors are highly information driven and use a diversified information strategy. *Cluster 2* (98 respondents; 11.1% of the analyzed investors), the “online investor” group practicing an internet-based high-information strategy. These investors are highly internet driven. This cluster has the highest number of “often” responses (4 times) with respect to the 13 information sources in the survey. *Cluster 3* (212 respondents; 24.1% of the analyzed investors), the “moderate investor” group practicing a broad but less frequent information search strategy. *Cluster 4* (212 respondents; 24.1% of the analyzed investors), the “workplace investor” group practicing a selective workplace-based information strategy. *Cluster 5* (263 respondents; 30.0% of the analyzed investors), the “reluctant investor” group practicing a low-information strategy. Their major information source is financial advisors. The cluster’s mean information gathering score is 1.476 (SD: .657), the lowest of the five clusters.

Following the terminology of previous research (see Table 1), we used the distances between the mean frequency of source usage to group the five clusters into investors practicing a (1) *high-information strategy*, which includes the balanced and the online investors of Cluster 1 and Cluster 2; (2) *moderate-information strategy*, which includes the moderate and workplace investors of Cluster 3 and Cluster 4; and (3) *low-information strategy*, which includes the reluctant investors of Cluster 5. In the following sections, we examine the five investor clusters and their three information strategies from several angles, the first being their preferred use of media.

4.2. Investor information sources

In this section, we report the relationship found between the five investor clusters and their media use. To this end, the different information sources were a priori split into four different media groups: internet-based information sources, mass media information sources, interpersonal information sources, and workplace-based information sources (see Table 4). This split is similar to others employed by Lin and Lee (2004) and Blinder and Krueger (2004). Already, at this aggregated level, some patterns can be discerned as illustrated in Fig. 1. First, internet-based information sources dominate the high-information strategy. These sources have mean internet scores of 3.301 (Cluster 1) and 3.541 (Cluster 2) compared to an information score for this medium of 2.040 of all respondents. Both high-information clusters use internet-based information sources twice as often as the low-information cluster. What distinguishes Cluster 2 is the extremely high use of online sources combined with an extremely low use of interpersonal and workplace-based sources.

Second, print publications, such as newspapers, magazines, newsletters, or books, are the most popular mass media products for investors. Except for the reluctant investors, who make very little use of the mass media sources, the print media are equally popular among the four other clusters. Third, the different interpersonal information sources show that the financial advisor is an important information source for all the clusters except the online investors.

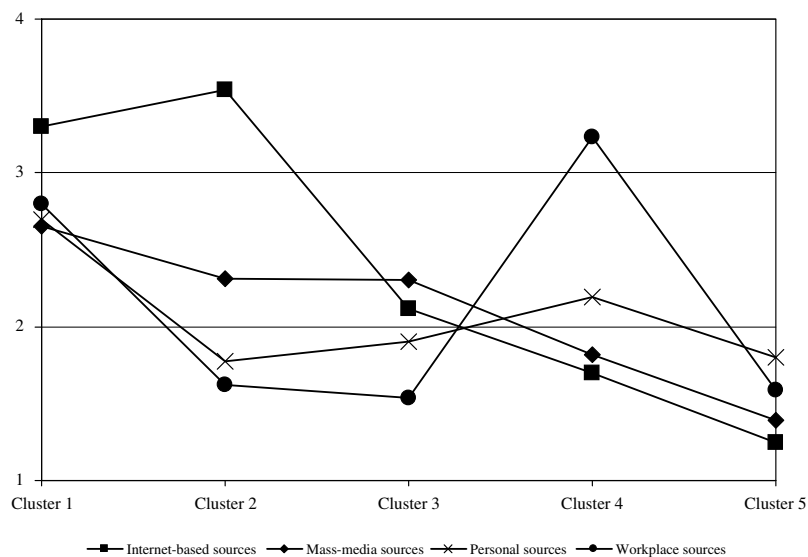


Fig. 1. Information media by cluster.

Fourth, the workplace-focused strategy practiced by Cluster 4 shows above-average mean scores for workplace-based (3.231) and interpersonal (2.197) information sources. These investors use workplace-based information sources twice as often as, for instance, the reluctant investors of Cluster 5. To conclude this list of findings, the four information-source categories are used, at least to some extent, by all but the reluctant investors.

Differences among the group means of the four sources of information acquisition were further tested by conducting two commonly used post hoc tests. As shown in Table 4, the post hoc paired comparisons of high- to moderate- or low-information search strategies are significant for 80% of the 24 possible pairs. In particular, the use of internet-based sources differs significantly among all clusters. Mass media use differs for all but the online investors of Cluster 2 and the moderate investors of Cluster 3, which show almost identical use of these media. Similarly, interpersonal and workplace information sources differ for seven of the 10 investor pairs but not for the cluster triangle of the online, moderate, and reluctant investors. The reason for these similarities, however, is quite different for it appears that the low-information strategy of Cluster 5 produces the same results as the low-communicative strategy of Clusters 2 and 3.

In the next section, we extend the investigation of the five investor clusters and their three information strategies beyond the influence of the information media. Insights from our literature review will guide our analysis of the influence of demographic, psychological, and involvement-related metrics on investor information acquisition.

4.3. Demographic, psychological, and involvement-related influences on investor information search

It was solely data about the information sources that produced the cluster solution presented in the previous two sections. The analysis evinced five different groups with distinct information search strategies. We now use a variety of descriptive measures, the demographic, psychological, and involvement variables earlier identified, to further examine and compare the five investor clusters.

Demographic variables: Table 5 shows that the clusters differ most significantly by gender, education, and household income. They are also, but less significantly, influenced by age and total financial assets. Respondents' race, the number of adults in their households, and their employment status divided the clusters only marginally. Marital status, family size, occupation, and financial obligations did not differ among the clusters. The two high-information clusters exhibit the highest portion of male investors: more than 75% compared to slightly more than 50% in the moderate and low-information Clusters 4 and 5. The two high-information clusters also had the highest number of minority respondents compared to all the lower-information clusters, and the highest level of formal education. More than 80% of investors practicing a high-information strategy had a bachelors' degree or more compared to about two-thirds of the low-information cluster. The high-information clusters further stand out with respect to the highest household income and wealth accumulation. The findings suggest that higher-educated male investors and those with higher earnings are more likely to practice a high-information strategy. Thus,

Table 5
Mean and standard deviation of demographic variables by cluster

	All mean (SD)	Cluster 1 mean (SD)	Cluster 2 mean (SD)	Cluster 3 mean (SD)	Cluster 4 mean (SD)	Cluster 5 mean (SD)	F statistics
Gender (male = 1)	0.65 (0.477)	0.76 (0.431)	0.82 (0.389)	0.72 (0.452)	0.55 (0.499)	0.58 (0.495)	9.551 ^{***}
Age (cont.)	48.37 (10.551)	48.52 (9.173)	48.76 (10.667)	47.35 (9.805)	46.55 (9.591)	50.45 (11.906)	4.743 ^{**}
Race (white = 1)	0.82 (0.381)	0.78 (0.417)	0.77 (0.426)	0.81 (0.392)	0.82 (0.388)	0.88 (0.328)	2.345 ^m
Marital status (married = 1)	0.90 (0.302)	0.88 (0.322)	0.95 (0.221)	0.90 (0.299)	0.89 (0.312)	0.89 (0.314)	n.s.
Family size (cont.)	3.42 (1.310)	3.43 (1.145)	3.42 (1.354)	3.46 (1.248)	3.48 (1.293)	3.33 (1.412)	n.s.
Number of adults (cont.)	2.20 (0.659)	2.38 (0.702)	2.19 (0.684)	2.17 (0.636)	2.22 (0.724)	2.16 (0.588)	2.263 ^m
Education (B.Sc. plus = 1)	0.76 (0.424)	0.83 (0.376)	0.88 (0.329)	0.83 (0.380)	0.74 (0.442)	0.67 (0.470)	6.904 ^{***}
Employment status (full = 1)	0.75 (0.433)	0.76 (0.431)	0.78 (0.419)	0.75 (0.431)	0.81 (0.396)	0.69 (0.464)	2.355 ^m
Occupation (professionals = 1)	0.58 (0.493)	0.68 (0.467)	0.60 (0.492)	0.58 (0.495)	0.57 (0.496)	0.55 (0.498)	n.s.
Annual household income (cont.)	\$123,640 (\$41,587)	\$138,560 (\$42,966)	\$128,610 (\$41,094)	\$127,120 (\$41,999)	\$120,920 (\$39,435)	\$115,790 (\$40,916)	6.510 ^{***}
Total assets (cont.)	\$1,149,801 (\$1,414,062)	\$1,553,518 (\$1,880,863)	\$1,201,119 (\$1,110,372)	\$1,149,921 (\$1,092,393)	\$966,204 (\$1,662,134)	\$1,132,746 (\$1,307,359)	2.896 [*]
Total obligations (cont.)	\$229,817 (\$215,455)	\$256,803 (\$217,643)	\$203,479 (\$189,291)	\$246,738 (\$200,195)	\$225,123 (\$206,165)	\$220,029 (\$241,046)	n.s.
N	880	95	98	212	212	263	

n.s. = $p \geq .10$; cont. = continuous variable; missing variables were replaced with a series mean procedure.

^m $p < 0.10$.

^{*} $p < 0.05$.

^{**} $p < 0.005$.

^{***} $p < 0.001$.

given these results, the hypothetical relations of Table 2 are supported for the majority of the demographic variables except for race (negative), marital status, and family size (non-significant). We find the portrait of the information seeker that emerges from this analysis remains essentially what has been described as “an active, involved audience subsegment, and a more elite socioeconomic one as well” in much earlier literature (McEwen, 1978; Thorelli, Becker, & Engledow, 1975).

Psychological variables: To assess the means scores for each investor cluster on the psychological measurements, we again conducted variance tests, and as shown in both Table 6 and Fig. 2, several statistically significant differences emerged with respect to the seven psychological variables. Investors practicing a high-information strategy show the highest scores for six of the seven measurements. Only the measure of attitude toward financial advisors was reversed. It is highest among investors in the moderate and low-information Clusters 4 and 5. This finding supports Sniezek and Buckley (1995) notion of the “dependent” condition, in which reduced search activity is combined with a relatively high level of advice taking. The information asymmetry between these investors and their advisors is characteristic for their information gathering. On the other hand, the balanced investors of Cluster 1 show a close-to-average attitude toward financial advisors. According to Sniezek and Buckley (1995), the combination of both internal, personal knowledge and external, professional advice can be considered the richest information condition. These results seem to support the U-shape relationship proposed in Section 2 for investors’ attitude toward financial advisors.

More striking is the overall pattern among the five clusters for the remaining six psychological measurements: going from the low-information strategy to the high-information strategies, the mean reported scores increase with each step up. The findings support the relationships between information search and psychological constructs developed in Section 2 for all but financial satisfaction and investor confidence. Contrary to expectation, both are positively related to search activity.

Also, as shown in Table 6, our post hoc tests to determine the differences among clusters revealed significant differences for half of the investor pairs. The pairs differed the strongest for investor confidence and investment interest. Investors’ future orientation differed significantly between high- versus moderate- and high- versus low-information strategy group means. As already indicated by the variance tests, less pronounced were the differences for risk tolerance, attitude toward financial advisors (4 significant pairs each), investor discipline, and financial satisfaction (3 significant pairs each). These differences converged on the two extremes of high- vs. low-information strategy. In conclusion, and in contrast to the findings of Gunnarson and Wahlund (1997), the investors with the highest levels of household income and financial assets, especially the balanced investors, are expressing the highest level of satisfaction. Dissatisfaction seems not to be the reason for “a favorable attitude” toward active information search in this wealthy, highly educated group of investors.

Involvement variables: Decision authority, participation changes over time, and investor action before making investment decisions are used to describe investor involvement. As shown in Table 7, variance tests revealed statistically significant, high F values for all three measurements. Except for decision authority, which is highest among the online investors, the findings describe a now familiar pattern: going from the low- to the high-information strategy clusters, the mean reported scores for the three involvement measures increase with each step up (see Fig. 2). As proposed in Section 2, higher involvement in investment decision making due to decision authority, increased participation in this decision, and investors’ diligence with their investment actions correlates to higher activity in information acquisition. The differences in the investor clusters were further supported by the pairwise comparisons of the clusters’ group means.

Overall, the post hoc pairwise analysis of the seven psychological and three involvement variables by and large confirms the earlier assignment of clusters into high-, moderate-, and low-information strategies. To summarize our findings, Table 8 provides a thumbnail sketch of the characteristics that differentiate each cluster from other clusters, based on the above tests

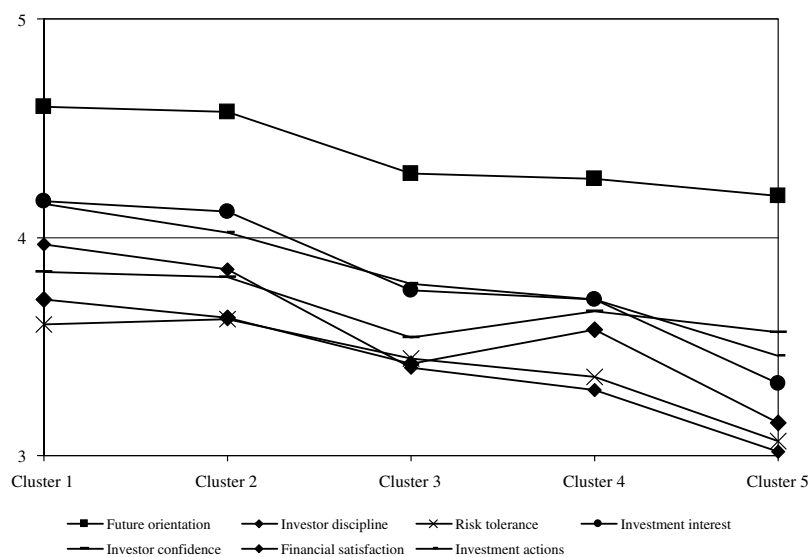


Fig. 2. Parallel measures by cluster.

Table 6
Summary statistics for psychological construct measurements by cluster

	All mean (SD)	Cluster 1 mean (SD)	Cluster 2 mean (SD)	Cluster 3 mean (SD)	Cluster 4 mean (SD)	Cluster 5 mean (SD)	F statistics Cluster 1 to 5
Future orientation (1 item)	4.32 (0.691)	4.60 (0.492)	4.57 (0.556)	4.29 (0.708)	4.27 (0.659)	4.19 (0.756)	10.417***
Investor discipline (1 item)	3.43 (1.124)	3.72 (1.018)	3.63 (1.088)	3.42 (1.135)	3.58 (1.066)	3.15 (1.155)	7.528***
Risk tolerance (1 item)	3.35 (0.874)	3.60 (0.777)	3.62 (0.780)	3.44 (0.761)	3.36 (0.867)	3.06 (0.953)	12.572***
Investment interest (3 items)	3.70 (0.757) $\alpha = 0.728$	4.17 (0.483) $\alpha = 0.610$	4.11 (0.572) $\alpha = 0.563$	3.76 (0.663) $\alpha = 0.608$	3.71 (0.718) $\alpha = 0.736$	3.33 (0.816) $\alpha = 0.726$	37.764***
Financial satisfaction (4 items)	3.64 (0.727) $\alpha = 0.693$	3.84 (0.610) $\alpha = 0.608$	3.82 (0.672) $\alpha = 0.662$	3.54 (0.734) $\alpha = 0.653$	3.66 (0.655) $\alpha = 0.683$	3.56 (0.807) $\alpha = 0.737$	5.172***
Investor confidence (3 items)	3.37 (0.906) $\alpha = 0.719$	3.97 (0.575) $\alpha = 0.556$	3.85 (0.656) $\alpha = 0.521$	3.40 (0.927) $\alpha = 0.732$	3.30 (0.881) $\alpha = 0.720$	3.02 (0.902) $\alpha = 0.656$	31.275***
Attitude toward financial advisors (4 items)	3.40 (0.689) $\alpha = 0.719$	3.41 (0.694) $\alpha = 0.675$	3.07 (0.688) $\alpha = 0.618$	3.34 (0.705) $\alpha = 0.688$	3.47 (0.598) $\alpha = 0.601$	3.52 (0.702) $\alpha = 0.731$	8.979***
N	880	95	98	212	212	263	
Medium		Pairs		δ Mean		Std. error	Sig.
<i>Post hoc contrasts</i>							
Future orientation		1,2		0.029		0.097	0.999
Levene statistics: .490, $p = 0.743^a$		1,3		0.308		0.083	0.009
		1,4		0.331		0.083	0.004
		1,5		0.414		0.081	0.000
		2,3		0.279		0.083	0.023
		2,4		0.303		0.083	0.010
		2,5		0.385		0.080	0.000
		3,4		0.024		0.066	0.998
		3,5		0.106		0.062	0.576
		4,5		0.083		0.062	0.782
	Risk tolerance		1,2		-0.022		0.123
Levene statistics: .502, $p = 0.735^a$		1,3		0.157		0.105	0.696
		1,4		0.242		0.105	0.261
		1,5		0.535		0.102	0.000
		2,3		0.179		0.104	0.565
		2,4		0.264		0.104	0.170
		2,5		0.558		0.101	0.000
		3,4		0.085		0.083	0.902
		3,5		0.379		0.079	0.000
		4,5		0.294		0.079	0.008
	Investor confidence		1,2		0.118		0.089
Levene statistics: 18.593, $p = 0.000^b$		1,3		0.564		0.087	0.000
		1,4		0.667		0.085	0.000
		1,5		0.949		0.081	0.000
		2,3		0.446		0.092	0.000
		2,4		0.549		0.090	0.000
		2,5		0.831		0.087	0.000
		3,4		0.103		0.088	0.767
		3,5		0.385		0.085	0.000
		4,5		0.282		0.082	0.006
	Attitude toward financial advisors		1,2		0.338		0.097
Levene statistics: 2.033, $p = 0.088^a$		1,3		0.074		0.084	0.941
		1,4		-0.058		0.084	0.975
		1,5		-0.114		0.081	0.737
		2,3		-0.264		0.083	0.038
		2,4					
Investor discipline		1,2		0.083		0.152	0.982
Levene statistics: 9.695, $p = 0.000^b$		1,3		0.296		0.130	0.158
		1,4		0.140		0.128	0.806
		1,5		0.566		0.126	0.000
		2,3		0.213		0.135	0.512
		2,4		0.057		0.132	0.993
		2,5		0.483		0.131	0.003
		3,4		-0.156		0.107	0.592
		3,5		0.270		0.106	0.080
		4,5		0.426		0.102	0.000

Table 6 (continued)

Medium	Pairs	δ Mean	Std. error	Sig.
Investment interest	1,2	0.054	0.076	0.955
Levene statistics:	1,3	0.412	0.067	0.000
10.877, $p = 0.000^b$	1,4	0.457	0.070	0.000
	1,5	0.837	0.071	0.000
	2,3	0.358	0.074	0.000
	2,4	0.403	0.076	0.000
	2,5	0.784	0.077	0.000
	3,4	0.044	0.067	0.964
	3,5	0.425	0.068	0.000
	4,5	0.381	0.070	0.000
Financial satisfaction	1,2	0.023	0.092	0.999
Levene statistics:	1,3	0.302	0.080	0.002
4.286, $p = 0.002^b$	1,4	0.178	0.077	0.148
	1,5	0.277	0.080	0.006
	2,3	0.279	0.085	0.010
	2,4	0.154	0.081	0.323
	2,5	0.254	0.084	0.024
	3,4	-0.124	0.068	0.351
	3,5	-0.025	0.071	0.997
	4,5	0.099	0.067	0.577
Attitude toward financial advisors (cont.)	2,4	-0.396	0.083	0.000
	2,5	-0.452	0.080	0.000
	3,4	-0.134	0.066	0.400
	3,5	-0.188	0.062	0.060
	4,5	-0.056	0.062	0.938

Note: α = Cronbach's alpha.

Note: ^a Scheffé method to account for equal variances; ^b Games-Howell to account for unequal variances.

*** $p < 0.001$.

of statistical significance. The next section then wraps up our investigation by regressing the investor clusters on the full set of demographic, psychological, and involvement variables of our study.

4.4. Predictors of investor information search

In this section, we conclude our data analyses with a set of binary logistic regressions carried out in order to determine the characteristics of our five investor search strategies by taking into account the full set of variables collected in this study, which are summarized in Tables 9 and 10. Table 9 restates the directional predictions that were made for the majority of the differentiating variables in Section 2. For some of the demographic variables (such as financial obligations), no prior directions were proposed. About one-quarter of the hypothesized relationships between the differentiating variables and the investor clusters were supported. The last column in Table 9 displays the balance between supported and refuted relationships. For investment interest, for instance, the hypothesized positive relationship with the information search strategies was confirmed. In order to facilitate comparisons among the five investor clusters, the values in Table 10 are expressed as the odds ratio (labeled Exp(b)), which refers to the odds that the investor belongs to a particular cluster.

Our findings imply that for each investor cluster, the type of information source and its frequency of use was a function of different combinations of differentiating variables. As illustrated in Fig. 3 and Table 9, a greater number of differentiating variables significantly influenced information search for investors practicing a low-information strategy (13 variables) and those practicing a high-information strategy (7 and 8 variables), than those with a moderate-search strategy (4 and 5 variables).

For the balanced investors, two demographic variables (number of adults, income), three psychological variables (investment interest, financial satisfaction (reverse), investor confidence), and two involvement variables (participation changes, investment action) were the most influential in determining this investor cluster. Membership in the online investor cluster was a function of two demographic variables (formal education and unmarried status), four psychological variables (distrust in financial advisors, investment interest, investor confidence and future orientation) and two involvement variables (decision authority and investment action).

For the moderate investors and workplace investors, only the demographic variables (gender, education, employment) and two of the psychological variables (investor discipline and financial satisfaction) had an effect on cluster membership. Compared with the other three clusters, overall very few variables exerted a significant influence on Cluster 3 and 4 investors. The relative paucity of significant variables for the moderate-search strategy may, in part, reflect a more heterogeneous group than the clusters in the other two strategies. For one, it comprises the relatively youngest group of investors. Their information search preferences may not yet be fully sedimented. On the other hand, overlap to the high- and low-information strategies might also increase the error term in the regression.

Table 7
Summary statistics for involvement construct measurements by cluster

	All mean (SD)	Cluster 1 mean (SD)	Cluster 2 mean (SD)	Cluster 3 mean (SD)	Cluster 4 mean (SD)	Cluster 5 mean (SD)	F tests Cluster 1–5
Decision authority	2.18 (0.588)	2.24 (0.596)	2.49 (0.542)	2.25 (0.607)	2.17 (0.559)	2.00 (0.549)	14.598 ^{***}
Involvement changes	.53 (0.639)	.78 (0.442)	.66 (0.591)	.57 (0.623)	.49 (0.604)	.38 (0.714)	9.244 ^{***}
Investment action	3.74 (0.759)	4.15 (0.552)	4.02 (0.688)	3.78 (0.665)	3.72 (0.666)	3.46 (0.872)	21.770 ^{***}
α	0.725	0.680	0.752	0.628	0.646	0.764	
N	880	95	98	212	212	263	
Medium		Pairs		δ Mean		Std. error	Sig.
<i>Post hoc contrasts</i>							
Decision authority		1,2		–0.247		0.082	0.024
<i>Levene statistics:</i>		1,3		–0.007		0.074	1.000
12.604, $p = 0.000$		1,4		0.072		0.072	0.855
		1,5		0.238		0.069	0.007
		2,3		0.239		0.068	0.005
		2,4		0.319		0.066	0.000
		2,5		0.485		0.064	0.000
		3,4		0.080		0.056	0.618
		3,5		0.246		0.053	0.000
		4,5		0.166		0.051	0.011
Investment action		1,2		0.129		0.089	0.598
<i>Levene statistics:</i>		1,3		0.368		0.072	0.000
10.025, $p = 0.000$		1,4		0.436		0.072	0.000
		1,5		0.697		0.078	0.000
		2,3		0.238		0.083	0.036
Involvement changes		1,2		0.115		0.074	0.536
<i>Levene statistics:</i>		1,3		0.208		0.062	0.009
19.361, $p = 0.000$		1,4		0.293		0.061	0.000
		1,5		0.402		0.063	0.000
		2,3		0.092		0.073	0.716
		2,4		0.177		0.072	0.109
		2,5		0.286		0.074	0.001
		3,4		0.084		0.059	0.612
		3,5		0.194		0.061	0.014
		4,5		0.109		0.060	0.370
Investment action (cont.)		2,4		0.307		0.083	0.003
		2,5		0.567		0.087	0.000
		3,4		0.068		0.064	0.829
		3,5		0.328		0.070	0.000
		4,5		0.260		0.070	0.002

Note: ^m $p < 0.10$. * $p < 0.05$. ** $p < 0.005$. *** $p < 0.001$.
Games–Howell method was used to account for unequal variances.

Finally, for the reluctant investors in Cluster 5, all three variable sets played an influential role in determining membership. With respect to the demographic variables, it was primarily a function of age, lower education, lower household income, and lower number of adults. Psychological influences were a balanced function of low investment interest and positive attitude toward financial advisors. The involvement variables were negatively related with Cluster 5 investors.

5. Discussion and conclusion

5.1. Discussion

In this study, we attempted to identify the information acquisition strategies of investors. They can be roughly divided into three categories in accordance with the previous studies on information search patterns presented in Table 1. A high-information strategy is practiced by both balanced and online investors; they represent 22% of the investor sample. A moderate-information strategy is practiced by the moderate and workplace investors, representing 48% the sample, and a low-information strategy is practiced by 30% of the investors.

Furse, Punj, and Stewart (1984) suggest an automaticity/systematic processing approach to categorize the differences between high- and low-search strategies. Our findings align with this approach and its three conditions. The extensive information search exhibited by the balanced and online investors showed the following: First, a high degree of involvement with investment decision making. Second, a tendency to avoid the use of simple decision heuristics, such as entrusting the decision to financial advisors, but rather to employ non-automatic decision processes, as documented by their high scores in investment actions. These consumers satisfy themselves that they have done all they could to understand the alternatives by a thorough search (Furse et al., 1984). Third, we also found the following condition, which accords with the systematic

Table 8

Thumbnail sketches of clusters

Cluster 1 (balanced investor group):

Gather investment information most often and utilize the highest number of information sources
 High number of male, higher educated, and minority investors
 Match the average-age of the investors of the sample
 Highest number of adults in the investors' households, annual household income, and total financial assets of all clusters
 Highest scores for future orientation, investor discipline, investment interest, financial satisfaction, and investor confidence
 Expressed second-highest risk tolerance
 Close-to-average attitude toward financial advisors
 Strongest increase in involvement over time and most diligent investment actions
 Close-to-average amount of decision authority

Cluster 2 (online investor group):

Second in number and frequency of information use with the strongest focus on the internet and its services
 Highest number of male investors, minority investors, and college-educated investors
 Second-oldest group of investors and second-highest number of full-time employed investors, annual household income, and total financial assets of all clusters
 Second-highest scores for future orientation, delay of gratification, investment interest, financial satisfaction and investor confidence
 Expressed highest risk tolerance
 Least favorable attitude toward financial advisors
 Highest decision authority of all clusters
 Second-strongest increase in involvement over time and diligence of investment actions

Cluster 3 (moderate investor group):

Third rank in number and frequency of information use; gather information preferably from the internet, press, and financial advisors
 Close-to-average for the number of minority investors
 Likely to be male and higher educated investors
 Second-youngest group of investors, lower number of adults in the investors' households, and fewer full-time employments
 Close-to-average annual household income and total financial assets
 Midpoint of scores for future orientation, investor discipline, risk tolerance, investment interest, and investor confidence
 Lowest financial satisfaction, less likely to have a favorable attitude toward financial advisors
 More likely to have decision authority and close-to-average increase in involvement and investment actions

Cluster 4 (workplace investor group):

Gather investment information only infrequently
 Highest number of female investors, youngest group of investors, second-lowest number of minority investors, second-lowest educational level
 Highest number of full-time employees
 Lowest amount of total financial assets of all clusters and second-to-lowest annual household income
 Second-to-lowest scores for future orientation, investor discipline, risk tolerance, investment interest, and investor confidence
 Close-to-average financial satisfaction
 More likely to have a favorable attitude toward financial advisors
 Less likely to have decision authority, an increase in involvement and investment actions

Cluster 5 (reluctant investor group):

Gather the least information about investing
 Oldest group of investors and second-highest number of female investors
 Lowest number of minority investors, college-educated investors, full-time employed investors
 Lowest annual household income and second-lowest total financial assets of all clusters
 Lowest scores for future orientation, investor discipline, investment interest, and investor confidence
 Expressed lowest risk tolerance
 Second-lowest financial satisfaction
 Most favorable attitude toward financial advisors of all clusters
 Least likely to have decision authority, an increase in involvement and investment actions

processing approach: The high-information strategies show a tendency for preferred modes of information acquisition. The online investors present the prime example of this third condition, while the balanced investor pursues a synthetic mode derived from all available information sources.

We did uncover some interesting and surprisingly consistent observations regarding investors' search determinants. Chief among these observations was the uniform effect psychological and involvement variables had in influencing the search behaviors among investors. These variables consistently became more positive with a rising level of information search. The measure of attitude toward financial advisors presented the one exception to this rule.

A second observation refers to the continuous nature of external information search. Based on our findings, it is reasonable to assume that an information search on financial markets can only to some limited extent become automatic. The investors who practice a high-information strategy were the ones who showed a high and ongoing involvement with investments. Our findings support the notion that highly involved consumers seek more information more often. The findings also document that this group of investors enjoy doing so as would be expected in an enduring involvement situation. Investors practicing a high-information strategy take the time to obtain information, most likely because the "information appears relevant to their needs and also seems likely to prove helpful" (McEwen, 1978). Thus, the notion that extensive experience with

Table 9
Differentiating measurement effects on information search by cluster

	Hypothesis	Cluster 1 Exp(b)	Cluster 2 Exp(b)	Cluster 3 Exp(b)	Cluster 4 Exp(b)	Cluster 5 Exp(b)	Result
<i>Demographic variables</i>							
Gender (male = 1)	+			−*	+**		±
Age (cont.)	−					+**	+
Race (white = 1)	?					− ^m	−
Marital status (married = 1)	?		−*				−
Family size (cont.)	−					+ ^m	+
Number of adults (cont.)	?	+***				−*	±
Education (B.Sc. plus = 1)	+		+**	+*		−**	+
Employment status (ft. = 1)	+			− ^m	+*		±
Occupation (professional = 1)	?						n.s.
Annual household income (cont.)	+	+*				−*	±
Total assets (cont.)	+						n.s.
Financial obligations (cont.)	?						n.s.
<i>Psychological variables</i>							
Future orientation	+		+ ^m				+
Investor discipline	+				+*	−*	±
Risk tolerance	+					−*	−
Investment interest	+	+***	+*			−***	+
Financial satisfaction	−	−*		−**	+*		−
Investor confidence	−	+**	+ ^m			− ^m	+
Attitude toward advisor	U		−***			+***	±
<i>Involvement variables</i>							
Decision authority	+		+***			−***	±
Participation changes	+	+*			− ^m		±
Investment action	+	+***	+***			−**	+
Number of significant variables (excl. constant)		7	8	4	5	13	

Note: N = 880; ± equal number of supported and refuted relationships; + more supported than refuted relationships; − more refuted and supported relationships.

- ^m p < .10.
- * p < .05.
- ** p < .005.
- *** p < .001.

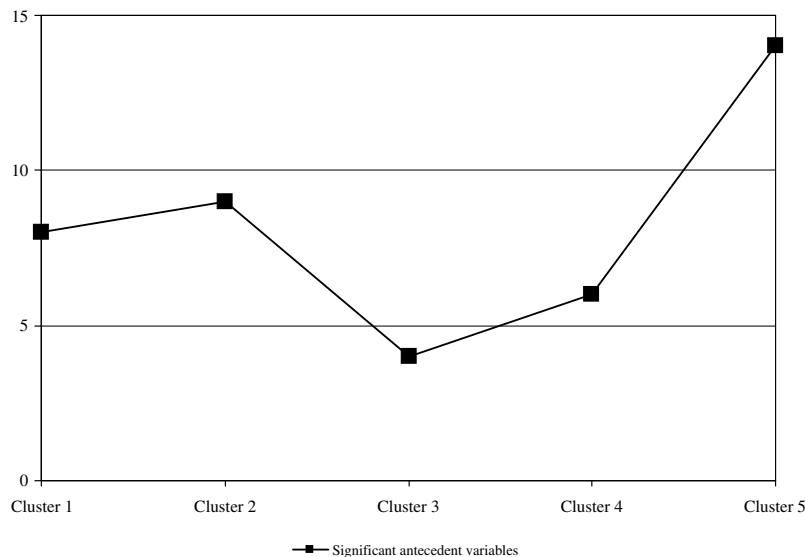


Fig. 3. Amount of significant antecedent variables.

the product relates to lesser attention and increased use of heuristics is not supported by our research. Just the contrary was evident. Investment decision making requires persistent and extensive information search.

Finally, to paraphrase Gunnarson and Wahlund (1997), why is “segmenting” into types of investor information search of interest? According to McEwen (1978), the profile of the differences between those who seek investment information and

those who do not is not especially noteworthy. It only reaffirms an acknowledged phenomenon about the existence of the information gap. “What is intriguing is that the size and nature of this gap cannot be readily reduced through an approach that emphasizes only information availability or accessibility” (McEwen, 1978, p. 250). To reduce this gap through increased search and use of investment information, investors practicing a moderate- or low-information strategy must be persuaded that this information is indeed relevant and meaningful. That, in turn, requires research to determine what investment information is needed by this audience as well as serious study of investment information packaging and delivery (McEwen, 1978). What this suggests, then, is to formulate a targeted approach to enable access to investment information for each segmented investor cluster.

An interesting perspective on how to target the different investor clusters is provided by Prochaska, Norcross, and DiClemente’s (1992) stage theory of personal change. These researchers argue that successful change of behaviors such as smoking involves a progression through a series of stages. They further identify relatively distinct processes associated with each stage, which are distinguished by differing levels of involvement. According to this stage theory, investors practicing a low-information strategy are likely to belong to the “pre-contemplation” stage, which represents consumers who have no intention to reassess their behaviors. During the “contemplation” stage, individuals reflect on why they are doing what they are doing and whether they really want to do it. The upper crust of investors practicing a low-information strategy and some of the moderate-strategy investors most likely match this stage. Self-checking processes related to values clarification and goal alignment are important at this stage (Koestner, Lekes, Powers, & Chicoine, 2002). During the “preparation” stage, people form an intention to change the behavior and perhaps also take some small action in that direction. The practice of a moderate-information search strategy most closely corresponds to this stage. According to Prochaska (2000), these are the individuals generally considered the most responsive to professional advice or educational intervention. During the “action” stage, people actively modify their behavior to reach their goals. Common processes during this stage are substituting alternatives to encourage information search, eliciting stimuli that promote information search, and restructuring one’s environment to create highly effective cues (Koestner et al., 2002). The formation of implementation intentions to actively acquire investor information, for instance, can address all three of these processes (Gollwitzer, 1999).

Prochaska, Norcross, and DiClemente (1994) note that it is common for people to overlook the final stage, “maintenance”, and they highlight the crucial importance of constantly working toward the goal. The investors practicing a high-information strategy exemplify the maintenance stage. Their focus on maintaining a high level of information is vital because the

Table 10
Differentiating measurement effects on information search by cluster (numerical results)

	Cluster 1 Exp(b)	Cluster 2 Exp(b)	Cluster 3 Exp(b)	Cluster 4 Exp(b)	Cluster 5 Exp(b)
<i>Demographic variables</i>					
Gender (male = 1)	0.670	0.724	0.605 [*]	1.907 ^{**}	1.124
Age (cont.)	0.992	0.996	0.985	0.985	1.031 ^{**}
Race (white = 1)	1.390	1.288	1.078	0.963	0.620 ^m
Marital status (married = 1)	1.604	0.242 [*]	0.859	1.174	1.191
Family size (cont.)	0.831	0.859	0.991	0.983	1.166 ^m
Number of adults (cont.)	1.985 ^{***}	1.074	0.931	1.080	0.701 [*]
Education (B.Sc. and higher = 1)	1.222	2.818 ^{**}	1.645 [*]	0.792	0.486 ^{**}
Employment status (full-time = 1)	0.957	0.837	0.673 ^m	1.631 [*]	0.928
Occupation (professional = 1)	0.688	1.185	1.143	1.000	0.966
Annual household income (cont.)	1.076 [*]	1.027	1.027	0.987	0.947 [*]
Total assets (cont.)	1.000	1.000	1.000	1.000	1.000
Financial obligations (cont.)	1.000	1.000	1.000	1.000	1.000
<i>Psychological variables</i>					
Future orientation	1.277	1.499 ^m	0.893	0.808	1.112
Investor discipline	1.000	0.995	0.963	1.190 [*]	0.852 [*]
Risk tolerance	1.090	1.183	1.053	1.058	0.787 [*]
Investment interest	2.588 ^{***}	1.713 [*]	1.134	1.131	0.475 ^{***}
Financial satisfaction	0.604 [*]	0.906	0.685 ^{**}	1.387 [*]	1.219
Investor confidence	2.015 ^{**}	1.424 ^m	1.024	0.887	0.805 ^m
Attitude toward advisor	1.077	0.487 ^{***}	0.866	1.130	1.648 ^{***}
<i>Involvement variables</i>					
Decision authority	0.732	2.520 ^{***}	1.112	1.059	0.560 ^{***}
Participation changes	1.829 [*]	1.004	1.219	0.791 ^m	0.823
Investment action	2.053 ^{***}	1.438 ^{***}	1.085	0.976	0.662 ^{**}
Constant	0.000 ^{***}	0.000 ^{***}	0.605	0.105 [*]	31.562 ^{**}
Chi-square (DF = 22)	129.239 ^{***}	123.212 ^{***}	37.082 [*]	44.848 ^{**}	221.180 ^{***}
Cox and snell R ²	0.137	0.131	0.041	0.050	0.222
Nagelkerke R ²	0.276	0.260	0.062	0.074	0.315

N = 880.

^m p < .10.

^{*} p < .05.

^{**} p < .005.

^{***} p < .001.

progression of change, according to Prochaska and colleagues, is spiral in nature, not linear. Recycling through the stages occurs quite frequently as individuals attempt to modify behavior. For example, as education and household income change throughout a person's life, the search for investment information may change accordingly. Relapse might occur during demanding life stages that leave only little time for dealing with investment decisions. Prochaska's (2000) spiral model suggests that most relapsers do not revolve endlessly in circles, nor do they devolve all the way back to where they began. Rather, they potentially learn from earlier experiences and, for instance, may only retreat from an action or maintenance stage to the preparation stage of searching investment information.

The results obtained in this study should be interpreted with some caution. The nature of this study was exploratory and intended as a basis for future research. The most serious weakness inherent in this study is that the measuring instrument for the psychological and involvement variables was not specifically designed for the purpose of assessing external information search. There is a need for a better correlated subset of variables to allow for more thorough measurement and more precise tests of how relationships between psychological and involvement variables affect search patterns. Future research examining differences in investor information search patterns should further include measures of investment success (e.g., rate of return) and amount invested in each investment product category (e.g., money in stocks, bonds). In addition, regularly repeated cross-sectional or panel studies are essential to determine the stability and development of the investor classifications presented in this research. Finally, it is important to bear in mind that our survey did not actually measure the extent and types of investment search conducted by the participants, but rather their perceptions of their own activities. Laroché et al. (2004) suggest that higher scores may in fact reflect the perceived intensity of the specific information-gathering task.

5.2. Conclusion

Clearly, understanding investor search patterns is of more than academic interest. Our findings directly relate to market practices. First, the analyses show that information search for investment decisions presents a considerable and unwillingly undertaken challenge for the majority of investors. Investors practicing moderate-to-low information search strategies comprise more than three-quarters (78%) of this nationally-representative sample of higher-income households. Second, segmenting investors according to their search patterns provides the financial services arena with practical hands-on information. For professionals in the financial education and advising field, knowledge about different information search patterns may be of use for product development, for marketing financial instruments, and for communicating consumer information materials (Loibl & Hira, 2007).

To conclude, this paper contributes to previous research on consumer search patterns and lends additional empirical evidence to support the existence of such patterns. It suggests there is considerable similarity in the search behaviors of certain groups of investors plus significant distance between the groups to warrant cluster analysis. We have also presented a framework that integrates and suggests demographic, psychological, and involvement-related explanations for observed patterns of search.

Appendix

Table 10.

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