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INFORMATION SEARCH BEHAVIOR OF INVESTORS AND THE ROLE OF ADVISORY SERVICES

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Abstract

Research into customer satisfaction of advisory services provided by financial service providers (FSPs) indicates a history of problems that originated well before the current financial crisis. As part of a research program into the design of advisory processes and supporting IT tools, we conducted a survey of affluent Swiss investors that was focused on their information search behavior when preparing to make an investment decision. Results show that advisory services are used at a later stage in the investment decision process, after Internet-based professional sources, media and personal contacts. In order for advisory services to become a preferred information source amongst customers, FSPs need to increase their accessibility, raise their level of perceived trust, and enhance the customer's access to a diverse range of trusted information sources in the advisory process.

Keywords: Information Seeking Behavior, Financial Advisory, Consumer decision making, Customer retention.

1   Introduction

The financial meltdowns of the past few years have demonstrated that relationships between financial service providers (FSPs) and their customers are fragile, with many customers withdrawing their capital and abandoning their banks, holding them responsible for their monetary losses. In times of shattered markets, advisor-customer relationships become increasingly strained and complex, since customers' confidence and trust in their financial advisors may be aligned with changes in the market and the respective gains or losses experienced. In actuality, investigations of customer satisfaction with FSP's advisory services (e.g., Stiftung Warentest 2010; Mogicato et al. 2009) shows evidence that this relationship has a long history of problems that extend beyond the scope of volatile financial markets. The customers' trust is undermined by an obvious principal agency conflict (Golec 1992), and consequently, a lack of transparency in the advisory process and product selection (Black et al. 2002). Numerous attempts have been made to improve financial advisory services by establishing client-centric advisory processes and information systems support. The former are hardly applied (Mogicato et al. 2009) and the latter is not being used during the advisory sessions (at least in Switzerland) (Schwabe & Nussbaumer 2009).

In this paper we suggest a novel explanation why both process improvements and information systems support have so far had such little impact in improving customer satisfaction of advisory sessions and ultimately the customer-bank relationship. Indeed, we observe an unsatisfying steady state, or equilibrium, between the clients' information seeking behavior and the current practice of advisory, which hinders an improvement of their relationship. Advisory services offered by FSPs are more geared to sell products than to support the customer in making sense of their financial requirements. Customers acknowledge this situation by using a wide variety of information sources other than advisory services, such as newspapers, magazines and television (Ernst et al. 2009), as well as increasingly the Internet (Cocca et al. 2009).

The complexity of the ever-changing financial markets and their evolving products, however, creates a new need for professional advice to identify and obtain accurate information required for making sound financial decisions. This area of conflict between informational autonomy and rising complexity/uncertainty offers the opportunity for FSPs to adapt their client advisory models to better meet their customers' needs, i.e., by providing relevant, trustworthy information that incorporate the customer's information behavior and search process.

Our research on the information behavior of bank customers is part of a larger research program on next generation financial advisory, which generally builds upon design science (Hevner et al. 2004). In this paper, we will report on a first "relevance cycle" of this research, with the goal of establishing a sound understanding of the customer's information behavior. Based on the general implications of these insights, we currently undertake a "design cycle" in this design science endeavor, striving to develop novel advisory services and IT support tools that acknowledge the customers' information behavior and better support their information seeking activities. This perspective on advisory support is fundamentally different to prior approaches that frame advisory support as customer relationship management (Peppard 2000), portfolio optimization (Dziarstek et al. 2004; Winkler 2006) or the fulfillment of legal obligations (Buhl & Kaiser 2008). Generally striving to increase the efficiency and effectivity of advisory processes and their IT support, the approaches so far have had little impact on improving customer satisfaction of the advisory experience.

We commence by exploring the research question (RQ): "*Which information sources are important for FSP customers in making investment decisions and what role do financial advisory services play?*" To answer this question, we will specifically look at the FSP customers' usage of information sources, their perception of information source characteristics and the information search processes that emerge when customers make investment decisions. Since our perspective on financial advisory is rather novel, we chose an exploratory approach that draws from general models and theories of information search behavior.

2   Literature Review

Literature on individuals' information searches when making investment decisions is already scarce (Loibl & Hira 2009, p. 26), particularly that related to research investigating the specific impacts and implications of investors' information search on financial advisory services. Relevant literature can be found in general research on information seeking as well as the more specific research on consumer information search and decision making.

Theories of information seeking behavior have emerged from multiple perspectives and focused on different aspects of an individual's behavior in dealing with information (see Case 2006 and Fisher et al. 2005 for comprehensive overviews). As we are interested in the information sources individuals use when *deliberately* seeking information for investment decisions, we base our discussion on the concept of *information seeking* as a "conscious effort to acquire information in response to a need or gap in your knowledge" (Case 2006, p. 5). We thereby define advisory services as one of several available information channels.

While information seeking is generally concerned with how individuals acquire information to satisfy some information need, *decision making* focuses on the individual making choices among alternatives. In this situation, she must gather information to evaluate and compare the potential choices (Case 2006, p. 86). Decision making thus involves a process of seeking and using information (Kuhlthau 1999, p. 399).

In the following sections we discuss two prominent aspects of information seeking, namely the characteristics of information sources and the information search processes in which they are employed.

2.1   Information Source Characteristics

Information sources exhibit peculiar characteristics that affect their applicability for specific information gathering. In his seminal model of information behavior, Wilson (1997) suggests that source characteristics – along with other intervening variables (e.g., psychological, demographic, role-related or environmental) – may constitute a barrier to information seeking and processing. Such source characteristics are accessibility, credibility and channel of communication, e.g., whether the information source is a person or not.

In order to be used for information seeking, a source has to be *accessible* – if an individual is simply not aware of a specific information source or the costs are higher than she is prepared to pay, the use of an information source is easily inhibited. Regarding the accessibility of particular information sources, the principle of least effort (Case 2005) plays an important role. It describes the tendency of individuals to try to invest as little effort into information seeking as they possibly can, "even to the point that they will accept information they know to be of lower quality (less reliable), if it is more readily available or easier to use." (Bates 2002). In general, this behavior should lead to an increased use of more accessible, as well as more *efficient* and *effective*, sources (Krikelas 1983; Wilson 1997).

Credibility, or more generally *trust*, refers to the perceived reliability and accuracy of a source's information. Thereby, not trusting or believing the information provider potentially constitutes a strong barrier of usage.

Finally, Wilson (1997) suggests that the *channel of communication* may also influence the perception and use of information. Interpersonal information can be more effective for reducing uncertainty and should be most suitable for the presentation of threatening information, making other individuals one of the most common sources of information; this is consistent with Krikelas' (1983) observation that individuals will prefer personal over impersonal sources. The channel of communication also influences the individual's search methods and modes. Choo (2005) distinguishes *formal* and *informal* searches, where the former includes only a few sources and thereby is aimed simply at learning, while the latter typically involves more sources and effort and is usually performed to find information for an impending decision or action.

In a small preliminary study (Nussbaumer et al. 2009), we discussed the characteristics of information sources with bank customers, focusing on the sources they used for their investment decisions. We found that most of the characteristics were unfavorably perceived for advisory services. The participants neither considered them as very *accessible* (in terms of finding the appropriate bank or advisor and making an appointment), nor did they perceive advisory to be *effective* (helpful in making investment decisions) or *efficient* (regarding the length of consultations). *Credibility* and *trust* in advisory services were also rated very low compared to other information sources, mostly because of the perceived information asymmetry and lack of transparency. Regarding the latter, we find explanations in the inherent conflicts of interest in advisory encounters. The client-advisor relationship has the features of a principal-agent conflict (Golec 1992), where the well-informed financial advisor (i.e., the agent) provides investment recommendations to the client (i.e., the principal), but may have hidden characteristics (e.g., lack of knowledge about the market) and hidden intentions (e.g., optimizing his fees by choosing high commission investments instead of the investments that maximize the profit of the client) or may engage in hidden actions (e.g., selling assets without the real consent of the client). Bank customers are well aware of these conflicts of interest and are therefore skeptical about the advisor's intentions (Nussbaumer et al. 2009; Schwabe & Nussbaumer 2009).

2.2   Search Process

The search process, i.e., the acts of searching for information, is an important aspect of an individual's information behavior. The information need, i.e., the recognition that one's knowledge is inadequate to satisfy a specific goal (Case 2006, p. 5), can be seen as the basic premise for individuals to initiate the search process. Belkin (2005) conceptualizes this need as an anomalous state of knowledge (ASK), i.e., an individual's state of knowledge that is in some way inadequate regarding a topic with respect to some goal. This notion is compatible with Kuhlthau's (2004) concept of uncertainty; the individual progresses in her search process to reduce uncertainty and finally fulfill her need or find a solution to her problem.

Wilson (1999) proposes a problem-solving model of four stages for an individual's search process: *problem identification* (identifying the type of problem), *problem definition* (defining the exact nature of the problem), *problem resolution* (searching for an answer to the problem) and *solution statement* (stating the answer to the problem). Wilson further suggests that each stage sees the successive resolution of uncertainty or results in a feedback loop to the previous stage if uncertainty fails to be resolved. With a similar process model, Kuhlthau (2004) found that information does not necessarily reduce, but may rather increase uncertainty – especially when information is inconsistent or conflicting.

Research on successive search suggests a refinement of the individual's problem and solution space while performing information seeking activities (Spink et al. 2002). Individuals tend to engage in multiple, repeated searches on the same problem and thereby experience shifts in the particular information seeking or problem solving stages (Spink 1996). Thus, through successive searches the seeker may develop a better understanding of the problem and make further progress in the search process. Belkin's ASK can be conceptualized as the starting point of such a search process, implying a rather incomplete understanding of the problem at the beginning that inhibits directed, targeted searches. So, if the individual does not completely understand her search problem, she cannot specify questions. In these situations, Ellis et al. (2002) show that human intermediaries are superior to other information systems. They can use their empathy and understanding of another person's situation to help uncover hidden information needs by supplying background information or asking appropriate questions.

3   Research Questions

To improve the design of advisory services and their IT support, we are firstly interested in which information sources customers use and to which extent, as well as the role of advisory services as an information source. We therefore refine our main research question (RQ) by *RQ1: Which information sources do FSP customers use?*

As the particular characteristics of information sources discussed above – accessibility, efficiency, effectivity and trust – may have an impact on their usage and thereby encourage information search or constitute barriers, we want to investigate the customers' perceptions of them. We therefore pose *RQ2: How are the information characteristics perceived by customers?*

Looking at the stages of information seeking, we expect specific patterns of information source use to emerge. We are especially interested in the role of advisory in these patterns, i.e., the order of usage of information sources. These insights are not only required to understand the current role of advisory services (and possible issues), but also which role advisory *could* play in the information search process. Finally, in keeping with our main research question we pose *RQ3: What are the information search processes of FSP customers?*

4 Methods

The data presented in this paper were gathered from an online survey on customer information behavior from September to October 2008. The participants were recruited both by collaborating with a popular online investment newspaper and a targeted emailing to so-called "affluent" bank customers (individuals with bankable assets between 50'000 and 500'000 Swiss francs). The participants recruited by email were presented an additional questionnaire on advisory quality of Swiss banks, which is reported elsewhere (Mogicato et al. 2009).

The questionnaire was completed by 66 of 109 respondents (60.55%) of the online newspaper and completed by 76 of 98 respondents (77.55%) of the targeted emailing. Only completed questionnaires were analyzed. As the different questionnaires' result sets revealed no significant differences regarding demographics and answer patterns, we merged them into a single data set of 142 respondents.

Measurements: The participants were prompted to evaluate properties of several information sources, which were classified into seven categories: *personal environment* (family, friends, co-workers, etc.); *advisory provided by banks*; *advisory provided by independent FSPs[1]*; *professional Internet sources* (stock exchange web sites, finance news, sites of FSPs); *informal Internet sources* (online communities, blogs, etc.); *media* (newspapers, magazines, TV broadcast, print and online-access) and *guidebooks* (books, stock market letter). Similar categories were used in the surveys of Ernst et al. (2009) amongst German shareholders and Cocca et al. (2009) amongst Swiss private banking clients. Respondents were also allowed to add information sources that were not covered by the broader categories. However, only one respondent provided an additional information source that was not already included in the broader categories, namely "lectures and presentations on finance".

To investigate RQ1 and RQ2, we asked the respondents to rate the information sources for investment decisions according to the following criteria, based on the focus group questionnaires of our preliminary study (Nussbaumer et al. 2009) and our literature review: *frequency of usage* ("How often do you use the following information sources for investment decisions?"), *accessibility* ("This information source is easily accessible for me."), *trust* ("I trust in this information source."), *inefficiency* ("Using this information source takes much time.") and *effectivity* ("The information provided by this source helps me to make a very good investment decision.").

Responses to the opening question, frequency of usage, were measured with a 7-point Likert scale from "very little" (1) to "very often" (7), featuring an additional answer category of "never" to automatically filter out unused sources for subsequent questions. The end points of the rating scales for all other criteria were labeled "I strongly disagree" (1) and "I strongly agree" (7), and respondents were provided with an additional answer category of "I don't know". Items attributed to this category were excluded from analysis for the respective respondent.

In addition to a direct answer to RQ3, we were also interested in the source *usage order*. We asked the respondents to provide a temporal rank order of the sources they had indicated using (i.e., only those

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[1] Service providers that either exclusively broker third party products or specialize in advisory without selling.

sources could be ranked to which the respondent had not attributed a response of "never", whereas not all sources had to be ranked). Additional data (age, gender, education, assets, subjective knowledge of asset classes) were included as control variables, operationalized as continuous (e.g., age), categorical (e.g., education, assets) or binary variables (e.g., gender).

Statistical Analyses: To investigate RQ1, we performed a descriptive analysis of the measures introduced. The frequency of usage and patterns of non-usage were analyzed using the respondents' mean rating of their source usage, filtering out information sources that the respondents indicated not using at all ("never"). To answer RQ2, we investigated the differences in the ratings of characteristics (accessibility, efficiency, effectivity, trust) between advisory and other information sources using two-sided paired t-tests. We deduced the search process of the respondents (RQ3) from their indicated order of usage, which we evaluated for each source according to the rank it was assigned in the majority of cases. The number of information sources used by the respondents for making a decision on financial investments (RQ1) was calculated by counting the sources given for the order of usage.

5 Findings

In this section we will present the results of our survey in terms of the three research questions posed in section 3. Regarding the demographics of our respondents, our survey was completed predominantly by male individuals (87.3%); the mean age of all respondents was 44.36 (with a standard deviation of 13.40 years). The majority of respondents were affluent customers (63.4%), whereas 16.9% of the respondents indicated assets higher than 500'000 Swiss francs and only 7% indicated assets less than 50'000 Swiss francs. 12.7% of the respondents, however, refrained from providing this information. For the frequency of their investment decisions, most respondents indicated making decisions "more than once a year" (59.9%), whereas 18.3% and 6.3% are involved in decision making "more than once a month" and "more than once a week", respectively. Only 15.5% indicated making investment decisions "less than twice a year".

5.1 RQ1: Which information sources do FSP customers use?

We found that the most popular information sources used by customers are media (used by 99.3% of the respondents), professional Internet sources (96.5%) and personal environment (92.3%), whereas the usage is comparably low for advisory services in banks (79,6%), guidebooks (77.5%), informal Internet sources (76.1%) and advisory provided by independent FSPs (48.6%).

Looking at the frequency of information source usage, we find that professional Internet sources are used more often than any other information source (mean agreement of 5.98 on a scale from 1 - "very little" to 7 - "very often"). Media was also used very frequently by our respondents (5.02), followed by personal environment (4.15), informal Internet sources (4.09) and guidebooks (3.93). The least frequent use, however, was indicated for advisory provided by banks (3.52) and independent FSPs (2.96). According to the number of ranked information sources (from RQ3), the average respondent consults 5.7 information sources before making investment decisions, whereas more than 85% of the respondents used more than four information sources. The usage profile of the respondents using three or more sources was very similar, with professional Internet sources, media and personal environment assigned to the top three positions, followed by informal Internet sources and advisory services in banks. However, as the number of information sources utilized increases, the assigned ranking of advisory services increases as well. Therefore, in terms of the corresponding order of use, both advisory provided by banks and independent FSPs consistently ranked amongst the last information sources used.

5.2 RQ2: How are the information characteristics perceived by customers?

We analyzed the respondents' different perceptions of information source characteristics using two-sided t-tests for paired samples. Figure 3 in the appendix lists (1) the parameters of the two-sided t-tests (paired samples) that we applied to evaluate significant differences between mean values of agreement on information source characteristics (whereas only significant pairs are listed), and (2) the effect size of the corresponding t-tests[2].

The perceived **accessibility** shows a pattern similar to the frequency of usage, with *professional Internet sources* (6.58), *media* (6.32) and *personal environment* (6.02) having the highest average agreement on being accessible (scale from 1 - "I strongly disagree" to 7 – "I strongly agree"). *Professional Internet sources* and *media* have been rated as being significantly more accessible than all other sources, excluding *personal environment*, whereby there are no significant differences between these three sources. *Personal environment*, however, still was rated significantly higher than *advisory services provided by banks* (5.05), *guidebooks* (4.89) and *advisory provided by independent FSPs* (3.60), but showed no significant difference to *informal Internet sources* (5.62). At the far end of the scale, we find the (also most infrequently used) *advisory provided by independent FSPs*, which is perceived as significantly less accessible than any other information source. Similar to the significant difference in frequency of usage, the two different kinds of *Internet sources* show a significant difference with a large effect size.

Regarding the perceived **inefficiency** of the information sources used, the three best-rated sources (i.e., with lowest agreement) again are *personal environment* (mean agreement of 2.73), *professional Internet sources* (3.65) and *media* (3.68), which so far have shown the highest frequency of use and accessibility (see above). We found no significant difference between *informal* (4.08) and *professional Internet sources* and *media*. The difference between *personal environment* and *informal Internet*, however, is significant. *Advisory provided by independent FSPs* (5.56) as well as *advisory provided by banks* (5.35) show the highest average rating of inefficiency (with no significant differences between the two), followed by *guidebooks* (4.92) and *informal Internet sources*. The inefficiency of *informal Internet sources* is rated significantly lower than for advisory services (which is also true for the subsequent sources). The differences between *guidebooks* and all lower rated sources are significant.

Similar to the other characteristics discussed thus far, the information sources with the highest perceived **trust** are *professional Internet sources* (mean agreement of 5.11), *media* (4.72) and *personal environment* (4.35), showing no significant differences. At the other end of the spectrum, *advisory provided by banks* (3.47) attracts the lowest degree of trust. It is significantly less trusted than *guidebooks* (4.24), *personal environment*, *media* and *professional Internet sources*. *Advisory provided by independent FSPs* (3.62) shows a similar picture, being significantly less trusted than *personal environment, media* and *professional Internet sources* (with no significant difference to *guidebooks*). *Informal Internet sources* (3.56) are trusted significantly less than *professional Internet sources*, *media* and *guidebooks*.

The highest perceived **effectivity** is attributed to *professional Internet sources* (5.03), *media* (4.53) and *guidebooks* (4.06). Effectivity of *professional Internet sources* is significantly higher than for any other information source, excluding *media*, which is in turn significantly more effective than *advisory provided by banks* (3.62) and *advisory provided by independent FSPs* (3.57) as well as *informal Internet sources* (3.33). The information source *Guidebooks* (4.06) is perceived as being significantly more effective than *Informal Internet sources*. For all other information sources we found no significant differences in the perception of effectivity.

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[2] To address the problem of multiple comparisons when carrying out multiple t-tests, we applied a Bonferroni correction that resulted in a significance level of $\alpha = 0.000574$.

5.3 RQ3: What are the information search processes of FSP customers?

To answer RQ3, we asked the respondents to rank the sources according to their temporal usage order. We deduced the order of usage for each source according to the rank it was assigned in the majority of cases. Respondents start their information search using impersonal sources (professional Internet sources, media), and turn to personal sources (like their personal environment or advisory services) only later in the process. This usage pattern can be found equally for customers frequently, infrequently or never using advisory services provided by banks. Figure 1 presents the detailed results, where the temporal rank orders are shown for respondents "not using bank advisory" (usage frequency: "never"), "infrequently using banking advisory" (mean usage frequency lower than 4 on the 7-point Likert scale) and respondents who report a high usage of these services (mean usage frequency greater than 4).

	... when **not using** bank advisory	... when **infrequently using** bank advisory	... when **frequently using** bank advisory
1	Prof. Internet	Prof. Internet	Prof. Internet
2	Media	Media	Media
3	Personal env. & Guidebooks	Personal env.	Personal env.
4	Informal Internet	Informal Internet	Advisory by banks
5	-	Guidebooks	-
6	Advisory ind. FSPs	Advisory banks & ind. FSPs	Advisory ind. FSPs & Inf. Internet
7	-	-	Guidebooks

Figure 1: Usage order of information sources according to usage of advisory in banks

6 Discussion

Bank customers are accustomed to using a wide variety of information sources. Those information sources that are used by the majority of our respondents – media (99.3%), professional Internet sources (96.5%), and personal environment (92.3%) – are also the most frequently used sources. Apart from media, professional Internet sources are used significantly more often than any other information source, and, as the order of usage highlights, seem to mark the starting point of the search process. Interestingly, this does not apply for informal Internet, i.e., the information sources of the Web 2.0 (online communities, blogs, etc.). As we can therefore see, the Internet is still not the panacea to information search. This is further demonstrated by usage patterns that include several other information sources – more than 85% of the respondents use more than four information sources for decision making.

For the information source characteristics, we find the recurring pattern of professional Internet sources, media and personal environment being top-rated. They are used by over 90% of the respondents and are used most frequently for information search. The respondents show quite a contrary perception for advisory services, which are perceived to be rather inaccessible, inefficient and ineffective. Furthermore, advisory services are also the least trusted information sources.

Looking at the order of usage of information sources, we find that the respondents of our survey exhibit very similar search patterns. When searching information for investment decisions, the respondents proceed from the most accessible sources to the least accessible, thereby seemingly adopting the principle of least effort (Case 2005); also, the sources used to initiate the information search process are perceived as being the most efficient (personal environment, professional Internet sources, media) and effective (professional Internet sources and media) and are used most frequently. We find a similar pattern for trust – in their search process, investors start with the most trusted sources and progress to

less trusted sources. Possibly reflecting the agency conflicts between advisor and customer, advisory services are least trusted and used only late in the search process.

In terms of the search process, investors progress from rather untargeted, *informal* searches (using professional Internet sources, media, personal environment) to more targeted, *formal* searches (using more specific sources like advisory services or guidebooks). In terms of problem resolution, however, it seems that investors turn to advisory services, whereas the final investment decision may be preceded by some validation of the information search results (using informal Internet sources or guidebooks). Such a behavior is illustrated by Kuhlthau's (2004) concept of uncertainty, in which the use of information sources may not necessarily reduce, but rather increase uncertainty. In contrast to Krikelas' (1983) finding that individuals will prefer personal over impersonal resources when applying external search, our respondents initially use impersonal information sources (professional Internet and media). In their order of source usage, personal environment is consistently used only after these two sources.

As for the late use of advisory services in the search process, there are several possible explanations. The use of these sources may be connected to the individual's problem-resolution process (Wilson 1999). In the problem identification and definition phase, the individual opportunistically uses multiple sources in order to enhance her understanding of the problem. The investor only seems to turn to advisory services when uncertainty is reduced to a certain degree so she is able to articulate the search problem or even possible solutions. Depending on the frequency of use, the information search patterns show some differences. Individuals never or only infrequently using advisory services in banks employ any available information source before electing to turn to (independent) advisory services, perhaps to validate their knowledge or implement their investment decisions; as a matter of fact, advisory services and solution implementation are tightly integrated in the processes of most FSPs. Frequent users of advisory services provided by banks use these services directly after having employed the top three sources (professional Internet sources, media, personal environment) and turn to other sources (informal Internet sources, guidebooks) only later. This might also imply an attempt at validation of advisory outcomes.

The discussed observations are summarized in Figure 2.

	Rank order of source usage...			Perceived characteristics (order of mean agreement)		
	... when **not using** bank advisory	... when **infrequently using** bank advisory	... when **frequently using** bank advisory	**Accessibility**	**Trust**	
1	Prof. Internet	Prof. Internet	Prof. Internet	Prof. Internet	Prof. Internet	**Problem identification** • high uncertainty • informal searches
2	Media	Media	Media	Media	Media	
3	Personal env. & Guidebooks	Personal env.	Personal env.	Personal env.	Personal env.	
4	Informal Internet	Informal Internet	Advisory by banks	Informal Internet	Guidebooks	
5	-	Guidebooks	-	Advisory banks	Advisory ind. FSPs	
6	Advisory ind. FSPs	Advisory banks & ind. FSPs	Advisory ind. FSPs & Informal Internet	Guidebooks	Informal Internet	**Problem resolution** • less uncertainty • formal searches
7	-	-	Guidebooks	Advisory ind. FSPs	Advisory by banks	

Figure 2: Usage order of information sources with source characteristics and search process

7   Implications

The presented results have some implications on the design of financial advisory services as well as their possible support through IT. Firstly, our data suggest that advisory may not be used infrequently and late only because of its perceived low quality – in fact, frequency and order of information source usage may be attributed to the investors' search process, converging from informal searches to formal,

targeted searches. For advisory customers, the search behaviors observed show that they use multiple information sources before consulting their advisors, suggesting that advisory is attributed a closure role in information search. We argue that this closure role of advisory leads to the current equilibrium between customers and their FSP, where FSP advisory processes seem optimized to sell products, leading customers to search for independent information *outside* advisory as a compensatory act. Secondly, and as a consequence, FSPs should reflect upon the role of advisory services in their customers' specific search processes. Currently, advisory services mark the exit, rather than the entry point to information search. This equilibrium is suboptimal given that human advisors in the role of a personal source have a unique ability to uncover hidden information needs – an activity most needed in the early phases of the information search. Thus, applying their services early in the search process could greatly enhance the efficiency and effectiveness of any subsequent information search activities.

To achieve an equilibrium that is more satisfying for both the FSPs and the customers, we suggest three steps to (a) enhance accessibility, (b) raise trust, and (c) provide a broader palette of information sources, applied in a building block approach.

Firstly, to enhance accessibility, FSPs should encourage their customers to seek their advice also in early phases of their investment decision making, helping them to define their problems and reduce their uncertainty. Considering the successive searches of their customers and their combination of information sources, an FSP could address and positively influence their media choice, e.g., by providing appropriate information in different channels. We suggest that FSPs put more emphasis on their Internet presence, which should better support their customers' identification and definition of financial problems during informal searches. This could help to improve the accessibility of FSPs services, since interactive tools offered at web sites could help customers in identifying their needs (also contributing to an enhanced perceived efficiency), which could then be discussed in noncommittal advisory conversations.

Secondly, the current issue of low trust must be addressed. This requires transparency, which might indicate the need to separate advisory services from the implementation of the investment solution. This could alleviate the agency conflicts discussed and lead to enhanced trust in advisory services. Furthermore, such separation would relieve the customers from advisory's implicit need to prematurely force a decision and implement a solution. In any case, the information source transition from web site to consultations with advisors may imply a transition in the customer's search process and has to be well considered.

Finally, our discussed results have implications on the face-to-face advisory sessions between customer and advisor. The inclusion of popular and trusted information sources (such as Internet sources or media) into advisory could allow for a transparent information aggregation (e.g., through sophisticated cooperative IT support) already in the very early problem identification and definition phases of the search process. Appropriate IT support could allow for a cooperative exploration and modeling of the problem space, thereby enhancing the customer's understanding and supporting her in her information search and decision-making process. In this manner, the efficiency of the customer's overall search process could be improved. In a current "design cycle" of our research, we are developing collaborative artifacts for advisory encounters that acknowledge the customer's information behavior and source preferences. Such artifacts should increase transparency and comprehensibility of advisory, which should also positively influence the perceived trustworthiness.

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8 Appendix

	Variable 1	Variable 2	t	df	Sig. (two-tailed)*	d**
Accessibility	professional Internet	informal Internet	6.959	116	2.17E-10	0.708
	professional Internet	advisory banks	8.564	116	5.34E-14	1.034
	professional Internet	guidebooks	10.937	116	1.45E-19	1.198
	professional Internet	advisory independent FSPs	15.388	116	8.62E-30	1.903
	media	informal Internet	4.633	116	9.48E-06	0.511
	media	advisory banks	7.559	116	1.03E-11	0.851
	media	guidebooks	9.489	116	3.74E-16	1.003
	media	advisory independent FSPs	13.603	116	8.93E-26	1.723
	personal environment	advisory banks	5.115	116	1.25E-06	1.332
	personal environment	guidebooks	5.579	116	1.61E-07	0.670
	personal environment	advisory independent FSPs	12.212	116	1.48E-22	1.337
	informal Internet	guidebooks	4.007	116	1.09E-04	0.433
	informal Internet	advisory independent FSPs	9.395	116	6.22E-16	1.112
	advisory banks	advisory independent FSPs	7.971	116	1.22E-12	0.758
	guidebooks	advisory independent FSPs	7.025	116	1.57E-10	0.694
In-efficiency	advisory independent FSPs	informal Internet	6.358	105	5.41E-09	0.827
	advisory independent FSPs	media	8.775	105	3.39E-14	1.214
	advisory independent FSPs	professional Internet	8.741	105	4.04E-14	1.126
	advisory independent FSPs	personal environment	14.484	105	8.76E-27	1.710
	advisory banks	informal Internet	5.460	105	3.21E-07	0.701
	advisory banks	media	7.979	105	1.95E-12	1.062
	advisory banks	professional Internet	7.946	105	2.30E-12	0.989
	advisory banks	personal environment	14.030	105	8.03E-26	1.561
	guidebooks	informal Internet	3.634	105	4.34E-04	0.445
	guidebooks	media	6.062	105	2.14E-08	0.747
	guidebooks	professional Internet	5.480	105	2.93E-07	0.706
	guidebooks	personal environment	9.414	105	1.27E-15	1.244
	informal Internet	personal environment	5.486	105	2.86E-07	0.695
	professional Internet	personal environment	3.857	105	1.98E-04	0.496
Trust	professional Internet	guidebooks	5.138	115	1.15E-06	0.597
	professional Internet	advisory independent FSPs	8.667	115	3.26E-14	0.970
	professional Internet	informal Internet	9.385	115	7.03E-16	0.969
	professional Internet	advisory banks	9.102	115	3.20E-15	1.060
	media	advisory banks	5.808	115	5.71E-08	0.707
	media	informal Internet	6.678	115	9.03E-10	0.717
	media	advisory banks	6.370	115	4.04E-09	0.798
	personal environment	advisory independent FSPs	3.593	115	4.82E-04	0.407
	personal environment	advisory banks	4.616	115	1.02E-05	0.488
	guidebooks	informal Internet	3.687	115	3.48E-04	0.403
	guidebooks	advisory banks	4.177	115	5.77E-05	0.470
Effectivity	professional Internet	guidebooks	5.084	103	1.66E-06	0.657
	professional Internet	personal environment	4.958	103	2.81E-06	0.714
	professional Internet	advisory banks	6.175	103	1.33E-08	0.881
	professional Internet	advisory independent FSPs	6.597	103	1.85E-09	0.931
	professional Internet	informal Internet	9.820	103	1.86E-16	1.087
	media	advisory banks	3.731	103	3.13E-04	0.553
	media	advisory independent FSPs	4.206	103	5.56E-05	0.594
	media	informal Internet	6.478	103	3.24E-09	0.745
	guidebooks	informal Internet	3.724	103	3.20E-04	0.455

* significance level after Bonferroni correction $\alpha = 0,000574 = 5,74E\text{-}4$
** Cohen's effect size; d > 0.8 = large; 0.8 ≥ d ≥ 0.5 = medium; 0.5 ≥ d > 0.2=small

Figure 3: Paired t-test results of information source characteristics (significant pairs only)