



Please advise: using the Internet for health and financial advice

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Abstract

The Internet is a popular source of information and advice especially within the fields of health and finance. Previous research has raised the issue of quality with respect to online information and has suggested differences between the way consumers and experts search for and appraise online information. However, many studies have asked students to act as ‘consumers’ or have relied upon artificial search tasks. This paper reports on research using ‘genuine’ consumers. The first study examines the trust markers held by genuine consumers in both the health and finance domains. The second study explores the perceptions of people who have actually used sources of online advice. The results indicate similarities between the trust markers of genuine consumers and experts. Trust markers differed between the two domains of health and finance and this was revealed in terms of the features of the sites visited. Genuine consumers may have different requirements and may be under different pressures compared to expert evaluators.

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1. Introduction

The Internet is now a popular source of information and advice across a variety of domains. Health and finance are two such domains that are heavily trafficked by

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consumers. It has been reported that 80% of adult Internet users have accessed it for general health information (Fox & Fallows, 2003). Whilst 17% of the active US online population used an online tax service website in 2003 (Nua Internet Suveys, 2003). Widespread access to the Internet coupled with the increasing volume of material available inevitably raises issues surrounding the quality and reliability of online information. There have been numerous detailed assessments of the quality of health information on the web embracing diverse topics such as Viagra, rheumatoid arthritis and diabetes. Eysenbach, Powell, Kuss, and Sa (2002) carried out a systematic review of health website evaluations and noted that the most frequently used quality criteria included accuracy, completeness and readability and design. *Accuracy* referred to the degree of concordance of the information provided with the best evidence or with generally accepted medical practice. *Completeness* was generally calculated as the proportion of a priori-defined elements covered by the website and *design* covered subjective design features such as the visual appeal of the website and its layout. Readability formulas were also used to establish the reading level of a document. In their review, the authors noted that 70% of the studies concluded that quality is a problem on the Internet.

Within the financial sector, six reporters with the Money Magazine spent two months searching the Internet in order to compile the top 50 financial websites (Rose & Daragahi, 1999). The reporters visited nearly 1000 sites in the process, limiting themselves to sites which were not monthly or annual subscription sites. The top 50 included those owned by huge corporations e.g. Microsoft's MSN MoneyCentral as well as others that are the passion of a single person. The top three sites were however large portal sites: Yahoo finance, MSN moneycentral and Quicken. The reporters in this survey used hard to quantify (but it could be argued highly important) measures such as convenience or user friendliness. More systematic comparisons and evaluations of online financial information and advice have focussed on the relationship between Web access and the prices for financial products and services (Brown & Goolsbee, 2000).

Stanford, Tauber, Fogg, and Marable (2002) carried out an expert evaluation of the credibility¹ of 10 financial websites. High credibility was associated with the site's name and reputation and with high levels of educational and informational material. Poor credibility was associated with perceived information bias, marketing focused content and poor site design.

Ciccotello and Wood (2001) examined the consistency of financial advice offered by Web-based sources and compared them to 'live' financial advisors. The authors found that Web advice is more sensitive to client complexity. As the information the client inputs becomes more complex so the Web advice becomes less consistent. Web advice is more consistent on questions relating to life insurance needs and tax benefits and live advice is more consistent on estate tax. Ciccotello and Wood (2001)

¹ Credibility can be defined as "trust in information", a construct combining trust and expertise. However some models of trust incorporate a dimension of expertise. Because we are dealing in this paper with the process of seeking and acting upon advice, trust seems the more salient construct because it presupposes actions with some associated risk, whereas credibility seems more passive.

conclude that for middle market consumers that the Web is a reasonable outlet for financial advice.

The large body of research on online advice belies the fact that very little is known about how health consumers or financial consumers seek advice. In terms of health advice, almost all of the existing studies have evaluated the quality of information and advice available on the Internet from a medical perspective (Smart & Burling, 2001). This is a problem, because we know that ordinary consumers search for and appraise information in a different way to experts. In both the health and finance domain potential consumers are more likely to be influenced by the attractiveness of the design (Stanford et al., 2002) and they will begin their search for advice from a general information portal (Briggs, Burford, De Angeli, & Lynch, 2002) – which means that they gain access to information indiscriminately. Eysenbach and Köhler (2002) noted that consumers (as opposed to experts) failed to check the authorship or owners of the website or read disclosure statements, despite suggesting these as important quality markers beforehand. However their study made use of an experimental search task and the authors suggested that people in a ‘real setting’ with a greater stake in the outcome may well pay more attention to the content of the websites, in terms of markers of quality.

In both the health and the financial domains there are differences between experts and consumers in terms of how they assess the credibility of websites and their information (Stanford et al., 2002). However there are a number of reasons why these differences may occur and why this study and others like it might not provide us with insights as to how genuine consumers seek and appraise advice online. In the Stanford et al. (2002) study financial and medical experts were asked to review a set of 10 sites and to rate the sites in terms of a number of credibility markers. These sites were kept general and were predetermined by the authors. Only general health and finance sites were examined not specific health or finance topics such as breast cancer or tax. Then 2600 ‘average consumers’ were asked to rate the same sites using the same credibility markers. The average consumers were far more influenced by the attractiveness of the Web design. However, the ‘average’ consumer may or may not be a ‘genuine’ consumer. By that we mean that they do not have a genuine reason for searching online for advice within either of the two domains. The average consumer is unlikely to know very much about any particular health or finance topics so perhaps feels unable to offer their opinion on content matters but can assess visual appeal. Visual appeal and the design of a website relates to its usability. A poorly laid out homepage is difficult to navigate and to use.

In another study, Peterson, Aslani, and Williams (2003) explored consumer experiences in searching for and evaluating information on medicines online. They found that consumers’ opinions on credible sources of information on medicines varied. Some participants viewed pharmaceutical companies as the ‘official’ information on a medicine and others preferred what they considered to be more impartial sources such as governments organisations and educational establishments. They also noted, however, that many participants were not able to express how they

selected information on medicines although they were able to express what they would not select.

Montoya-Weiss, Voss, and Grewal (2003) found that consumers' evaluations of financial services institutions' websites focussed around three main elements. In order of importance these were: information content, organisational structure (ease of use) and graphic style. Information content also influences consumers' perceptions of the security risk: those who favourably evaluate a website's information content are less likely to be concerned about security risk.

It seems that some discrepancies between experts and consumers occur because of the nature of the participants and the task. However, some consumers, even genuine consumers, are perhaps looking for different types of information and advice to so-called experts. As such they may well choose to explore different sites and use different trust markers. But how do genuine consumers choose sites to engage with? What kinds of sites are they looking for and what kinds of information? This paper explores the use and perceptions of health and financial advice. The two studies reported in the paper concern genuine consumers and explore the perceptions of people who have used online sources of advice. It also reviews the sites they chose to engage with and those they trusted. The paper begins by outlining the concept of online advice and then discusses the issue of trust.

2. Online advice

The concept of online advice covers an extensive range of domains. These range from cookery and fashion to legal advice. Health advice and financial advice are two areas, which have become very popular topics for online access. Health advice covers an enormous range of topics. People seek health advice in order to help make difficult decisions about health issues, for example, choices concerning medication, lifestyle changes and treatment options. People also seek health advice and information on behalf of others. In the world of finance the term financial advice encompasses a wide range of services and information. Obtaining financial advice could include reading through a leaflet from the building society to having a comprehensive financial review with a financial advisor.

Online advice takes many forms. These range from static pages to query forms providing automated advice. The truest approximation of online advice provision necessitates the involvement of humans. This can take the form of e-mailing a human 'expert'. The expert then replies via e-mail or posts a reply on a website. Experts can be financial advisors or clinicians in the case of the health domain. A more informal version of advice is provided by online message boards and forums. Users can search the messages and post their own questions to the groups see for example www.netdoctor.co.uk in the health domain and www.motley-fool.co.uk in the financial domain. Members of such groups share enormous empathy with one another especially where health issues are concerned (Preece & Ghozati, 1998b).

3. Trust in online advice

Given what has been said earlier regarding differences in the way in which experts and consumers search for and appraise online advice there is a real need for a systematic exploration of the way in which people evaluate the trustworthiness of health and financial information and advice online.

Trust is a complex, multifaceted construct and recent models – derived from e-commerce and e-health contexts – suggest that there are several distinct stages to the build up of trust online. Working in the area of trust in online advice, Briggs, de Angeli, and Simpson (2004) proposed a model in which early intentions to trust are influenced by visual design factors, while subsequent decisions to act are contingent upon careful judgments of the quality of information and advice on offer. This two-process model is derived from a well-known literature in the social psychology of judgment and persuasion in which people have been shown to adopt heuristic strategies in order to process a message quickly but then switch to analytic strategies in order to make a more careful judgment about that message, see for example Chaiken (1980). A similar distinction is made by McAllister (1995) who distinguishes between cognitive and affective trust. This important distinction is present implicitly in the measures used by Rempel, Holmes, and Zanna (1985), and adapted by Lee and Moray (1992, 1994).

The online trust literature therefore suggests that initial trust decisions are influenced by the quality of site design such that people will trust sites if they are attractive and of a professional quality and will mistrust sites with poor graphics and spelling mistakes (e.g. Fogg et al., 2001, 2002; Steinbruck, Schaumburg, Duda, & Kruger, 2002). In contrast, trusting actions or the trust beliefs guiding those actions are influenced by perceived expertise and experience, process predictability, degree of personalisation and communication integrity (e.g. Bhattacharjee, 2002; Briggs et al., 2002; Lee, Kim, & Moon, 2000; McKnight & Chervany, 2001).

However this interpretation is not entirely straightforward – since the diverse methodologies with which trust has been investigated make interpretation difficult. There are three main ways of measuring trust: (i) by observing trust-related behaviours in a naturalistic setting, (ii) by devising a situation where trust is essential for performance, and (iii) by psychometric scales. The same three research paradigms can be found in the e-commerce trust literature today. The first method is exemplified by recruiting people who genuinely wish to shop and/or seek information or advice online (e.g. Briggs et al., 2002; Egger, 2000; Sillence, Briggs, Fishwick, & Harris, 2004a). The second method is typical of game theory approaches where participants essentially gamble a small stake (e.g. Riegelsberger, Sasse, & McCarthy, 2003). The third method builds upon theoretical models of interpersonal trust and their associated scales, for example, The Partner Trust Scale (Rempel et al., 1985). The resultant trust questionnaires for e-commerce include scales by Bhattacharjee (2002), Briggs et al. (2002), Lee et al. (2000) and McKnight and Chervany (2001).

Not only do the methodologies for measuring trust differ, but the contexts that have been used for studying trust in e-commerce, vary enormously in terms of the

underlying risks involved. Thus contexts vary in terms of the *type* of risk – real or imagined; and also in terms of the *degree* of risk. The heuristic-systematic processing model described earlier suggests that people will employ very different processing strategies when evaluating trust in high versus low risk or high versus low involvement situations. Thus people will use cognitively intense analytical processing when the task is an important or particularly engaging one, whereas they use affect or other simple heuristics to guide their decisions when they lack the motivation or capacity to think properly about the issues involved (e.g. Albarracín & Kumkale (2003); McAllister, 1995; Petty & Wegener, 1999).

Such studies anticipate some recent findings with regard to online trust and credibility. Stanford et al. (2002) invited experts and ordinary consumers to view health and finance information sites and found that experts (those having a high involvement with a site) were highly influenced by factors such as reputation, information quality and source and perceived motive, in contrast to ordinary consumers (having a low involvement with the site) who were much more influenced by the attractiveness of site design. However these two processes do not simply reflect personal involvement, but can also reflect the amount of time people have to give to an evaluation. Thus, in an online context, people are often required to sift through vast quantities of information – much of it irrelevant – before exploring one or two sources of information in more depth. Once again, the processing strategies used to sift information quickly should involve low cognitive effort (heuristics) while those involved in longer term evaluation are likely to be more effortful, analytic processes.

It follows then that genuine consumers, personally involved and without significant time pressures will more than likely evaluate sites in a way more akin to that of experts. Health and finance websites have been chosen as an interesting comparison here and elsewhere because they are heavily trafficked by users and present a difference in terms of a primarily informational category (health) and a primarily transactional category (finance) (Stanford et al., 2002). These comparisons may well mean that different trust markers are more or less prominent within the two domains. However, both categories also carry an element of risk in that incorrect information or advice on the website could be harmful to a consumer in making an important health or financial decision.

4. Aims and objectives

The aim of the study was to understand the important trust factors for genuine consumers in acting upon online health and financial advice. The specific objectives were:

- To understand ‘genuine consumers’ in the health and finance domains and to examine their trust markers and see how these compare to so-called experts
- To compare the health and finance sites that genuine consumers have used for advice and information

- To explore the similarities and differences between markers of trust in the two domains and the predictive markers of trust raised in the discussion groups.

The first study, a series of discussion groups, examines the desires and expectations of genuine consumers in both health and finance domains. These provide a good basis for comparison with so-called experts. The second study is a large-scale trust survey of advice online. This allows the actual sites used for advice to be examined along with the relative importance of the trust markers in the two domains.

5. Study 1: Discussion groups on finance and health

In this study two different sets of discussions groups were ran. The first group was based around financial advice and the second series around health advice.

5.1. Financial discussions

Participants: The participants (19 Male, 23 Female) had an age range of 25–55 years. They were all regular Internet users and had all seen a financial advisor within the last 12 months or else were interested in getting some financial advice. A total of 10, single sex groups (1 pilot and 9 test groups) were run over a two-week period, all discussions were taped and then transcribed.

Procedure: Each group began with a general discussion on the topic of obtaining financial advice, following the discussion guide. The key areas of discussion in the guide included:

- Sources of financial advice and information
- Experience and attitude towards financial advisors
- Ideal financial advice
- Experience and attitude towards the Internet
- Online advice.

5.2. Health discussions

Participants: The participants (13 Male and 29 Female) had an age range of 22–68 years. All were regular Internet users and had a genuine interest in a specific health topic. The health discussion groups were run as part of a longer, longitudinal study looking at the use of the Internet for health advice. The detail of the specific health topics is beyond the scope of this paper but is reported in detail elsewhere (see Silience et al., 2004a, Silience, Briggs, Fishwick, & Harris, 2004b). A total of eight groups were run over a nine-month period, all discussions were taped and then transcribed.

Procedure: Each group began with a general discussion on the topic of obtaining health advice, following the discussion guide. The key areas of discussion in the guide included:

- Sources of health information and advice
- Experience and attitude towards healthcare professionals
- Ideal health advice
- Experience and attitude towards the Internet
- Online advice.

Analysis: The transcripts of the discussion groups were analysed for emerging themes concerning markers used by the participants to assess the trustworthiness of the online health and financial advice. A coding scheme was developed in accordance with the aims of the research, the discussion guide and the emerging themes. The results highlight the main themes surrounding the idea of seeking advice in the two domains and the trust markers that emerged.

5.3. Results

A number of themes emerged from the two sets of discussions. These are outlined below and similarities and differences between the two domains are highlighted where appropriate.

5.3.1. The role of the expert advice giver

Both health and financial advice are areas in which experts exist. People seeking advice in either of these domains have to put themselves ‘in the hands’ of the experts.

The financial advisor: There was generally a negative perception of financial advisors and process of getting financial advice. Participants described the process as often being confusing, full of jargon, longwinded, pressurised towards sales. People who were more sophisticated and confident regarding finances were less anxious. “*I feel more in control than them because I’m the one that’s got the choice*” (Female 25–35).

People thought it was important to be able to have a more general chat with the advisor first. This wider discussion ensured that all aspects of the consumer’s life were considered and that their needs were understood. Covering a range of issues was important but the discussion should not be too overtly linked to products. “*I think they’re trying to get a better picture but again I think they are thinking ‘I can sell them this, this and this as well.’*” (Female 25–35).

Actual experiences with financial advisors seemed to be polarised. People either reported very satisfying outcomes or terrible encounters. A good experience would involve the advisor speaking the ‘consumers language’, providing clear explanations and not pressuring the consumer for a signature. A good experience would leave consumers feeling positive and relieved that they had sorted something out. A bad experience on the other hand was typically represented by the view that the advisor did not listen to the customer’s needs and had preconceived ideas of what they wanted.

The discussion was often too technical and people left the meeting feeling confused and often angry.

The doctor: A similar tale was told about medical experts in particular doctors GPs. The perception was that meetings with the doctor were too rushed. Discussions tended to focus on the immediate symptom and did not take account of the bigger picture and there was little concern for emotional issues. “*I got a lot of lifestyle advice that just wasn’t applicable and they weren’t listening to the answers*” (Male, 39).

A common perception was that doctors were biased towards medication over alternative treatments. “*Well my doctor gives me no advice whatsoever he doesn’t say anything he just gives me different tablets or more tablets or a bigger tablet or two tablets instead of one he doesn’t say anything about my lifestyle or my diet*” (Female, 51). “*No alternative methods were ever discussed at the doctors it was either HRT and when I said I didn’t want HRT that was it there was no other treatment offered.*” (Female, 55).

5.3.2. The ideal advice scenario

The ideal advice scenario was similar across both the health and the finance domains. Participants thought it would contain the following elements:

- Comprehensive with respect to financial products/treatment options
- Provides all the information the good and the bad points, not biased
- Trustworthy
- No pressure or time limits
- Tailored to your needs in terms of aims and language.

5.3.3. Factors affecting trust

Trust emerged as the key issue in both the health and finance discussions. The issue of risk was also covered as trust presupposes an element of risk. In the finance domain people mentioned that there were money risks associated with financial advisors be they online or offline “*Isn’t it a bit of a risk? It sounds like you hand over the money and she puts it where she feels like?*” (Male 45–55). Participants also had some reservations over the disclosure of credit card information and the idea of having to reveal personal information to get specific advice. In the health domain people mentioned predominantly risks to their health and well being from following incorrect or misguided advice. They also mentioned some concerns over disclosing personal information in order to get more tailored and specific advice in return. “*The risks are. . .you can end up seriously ill buying investing in a silly product that claims to cure you.*” (Male 39).

5.3.4. Trust and financial advice

In the financial discussions trust was enhanced by positive experience, lack of pressure, transparent and comprehensive information. In terms of online advice the participants said that tailored or personalised advice increased their feelings of trust as did full and frank explanations. Participants liked the idea of independent financial advice i.e. advice across a range of products and services rather than advice

tied into a particular financial institution. Interestingly they also said that they preferred sites that were owned by a well-known brand or institution. Being able to contact someone behind the website via the phone, e-mail or a physical address was also seen as an important factor in terms of increasing trust.

5.3.5. *Trust and health advice*

In the health discussions trust was enhanced by cross referencing (hearing the same thing more than once from different sources). Whilst in general people were trusting of the doctor they did feel that doctors in general were biased towards medication. In terms of online advice people wanted clear, comprehensive and unbiased information from reputable sources. People were more trusting of UK based sites and non-commercial sites. The motivation of the site was important and commercial sites and pharmaceutical sites were seen as less trustworthy. Tailored information would increase the trust process. Other trust enhancers included the ease of use of the site, straightforward language and plenty of links.

5.3.6. *Online advice*

Online advice was regarded as being more up to date than offline advice as well as being easier and quicker to access. Both discussion groups wanted sites to be easy to use and navigate. In both domains participants often reported feeling a loss of control especially in terms of the process of advice seeking. All the groups thought that online advice and information was a useful way of following up a visit to a financial or medical expert or was a good way of preparing before a meeting. Most people thought that it was possible to use the Internet conjunction with other, offline sources.

People mentioned a number of factors that would be important to them in terms of trusting and acting upon advice online. These are summarised below:

What people want from financial advice websites:

- Branded sites
- Tailored information
- Comprehensive sets of information
- Links to real people behind the site
- Quick response
- Easy to use site.

What people want from health advice websites:

- A mixture of medical and informal expert opinion
- Clear motivations behind the site
- UK sites²
- Information and advice that is clear and simple to follow

² All the discussion groups were run in the UK. The participants felt that UK sites would be more applicable to themselves especially where drug names were concerned.

- Tailored information and advice
- Easy to use site.

5.4. Summary and discussion of Study 1

Both sets of discussions groups mentioned a range of issues concerning the role of experts in the advice giving process. They discussed ideal advice and the potential benefits of online advice. People mentioned a number of factors that affect trust in health and financial advice. The participants wanted a number of things from online advice and a number of different trust markers were identified. In contrast to [Stanford et al. \(2002\)](#), many of these markers concerned content based issues. Genuine consumers, those with a real interest in searching for advice on health or finance issues did mention visual appeal factors and usability as important markers of trust but spent more time discussing issues of brand, content and personalisation.

In the [Stanford et al. \(2002\)](#) study ‘company motive’ was an area heavily commented on by the health experts (22.7% of the comments). The experts were concerned that sites should have their readers interests, rather than their own financial interest, as their priority, for example, ‘*I found health websites that sell or market products less credible than those that relay information only.*’

Similar sentiments were expressed in the genuine consumer health discussion groups reported in Section 5 of this paper: “*But I think there are a lot [off health websites] who are selling their products and sometimes its difficult to get beyond those to get to the real information.*” (Female, 48).

The finance experts in the [Stanford et al. \(2002\)](#) study above all expected credible sites to provide consumers with a great deal of educational information and research. The largest percentage of these expert’s comments (40.3%) related to the information focus or quantity of information available on a site. One of the key factors mentioned by the finance consumers in the discussion groups, reported in Section 5 of this paper, was their desire for comprehensive information. Although both sets of discussion groups discussed more content based factors than was suggested in [Stanford et al. \(2002\)](#) there were still a number of differences that emerged between the two domains themselves. Name and reputation or brand was more important in the financial discussions than the health discussions. Site motivations were more important in the health discussions.

6. Study 2: Questionnaire data

In the second study the perceptions of people who had used sources of online advice were explored through a large scale survey. We wanted to examine which sites people had actually taken advice from and the important trust factors that related to the advice and to the website. The study also allowed any differences between the health and the finance domains to be explored.

6.1. Method

A Web-based questionnaire was designed to (a) determine the demographics of the people who had previously sought advice and (b) to explore the perceptions of the sites visited for online advice. On the first page of the questionnaire participants were asked whether they had sought advice online and those who clicked on yes then completed the subsequent questions. These questions covered details of the sites previously visited. These included how the site was located and the level of risk associated with acting on the site's advice. A number of trust statements derived from the trust literature were also put to the respondents and are listed below:

1. The advice appeared to be prepared by an expert
2. The advice came from a knowledgeable source
3. There were comments from other users on the site
4. The site was owned by a well known brand and featured its name and logos
5. I did not have to wait long for the advice
6. Different options or alternative courses of action were suggested
7. The site was easy to use
8. I felt involved in the way the site tried to find appropriate advice
9. The site was interactive
10. The advice was tailored to me personally
11. The reasoning behind the advice was explained to me
12. The site offered the opportunity to contact a person (by phone, e-mail, etc.)
13. The advice appeared to be impartial and independent
14. I had used the site before
15. The way the site went through the process of giving advice was predictable
16. Using the site helped me make the right decision
17. I trusted the advice
18. I am knowledgeable about the subject area I was looking for advice about

To express their opinion, participants had to click on a Likert-type scale ranging from 1 (disagree totally) to 7 (agree totally). For more detail on the design of the questionnaire see (Briggs et al., 2002).

6.2. Results

A total of 2893 respondents were included for the final analyses. Advice domains covered included home improvement/DIY, computer support and travel in addition to health and finance. Of the total respondents to the questionnaire, 58% were women. Most of the respondents (32%) looked for advice on health issues with 10% of respondents searching in the financial domain. The results for the health and the finance domains were then analysed in more detail. A significant effect of gender emerged. 71.8% of the respondents who said they had sought medical advice online were female and only 28.2% were male. In terms of seeking financial advice the split was reversed although the group remained more balanced with 58.2% male respon-

dents and 41.8% female. There were no differences between the two domains in terms of respondents' age or Internet experience.

The respondents made reference to 168 separate health websites. All the websites were examined and sites that were not strictly health related were removed. This included search engine sites such as www.google.com and www.ask.com. The remaining sites were checked to ensure that they were still in existence and any that had expired were also removed. This left 155 valid, separate health websites. The respondents made reference to 73 separate finance websites. All the websites were examined and any non-finance related sites were removed this left 69 valid, separate finance websites.

Table 1 shows the breakdown for the health and finance domains. In terms of the health domain 109 out of the separate 155 websites (70%) were specific health topic sites such as www.nacc.org.uk a site for Crohns and Inflammatory bowel disease sufferers. Only 8% of sites were general portal sites covering a wide range of issues (including health). Twenty two percent were vertical portal sites covering a range of health issues.

In terms of the finance domain 47 out of the separate 69 websites (68%) were specific finance topics such as www.eloan.com a site for obtaining a loan. Only 12% were general portal sites and 20% were vertical portal sites covering a range of financial advice issues.

6.2.1. Health websites

Fig. 1 shows the 10 most frequently mentioned health topics about which online advice has been sought. The largest number of individual sites was for cancer (12). The topic most frequently mentioned was alternative medicine (21).

Table 2 shows a breakdown of the site ownership of the different health websites. The largest two sources by far were Web providers and charities accounting for over half of all the sites reported. Pharmaceutical companies accounted for only 3% of sites.

Table 1
Breakdown of health and finance sites

	Domain	
	Health domain	Finance domain
Number of times domain is listed as target of advice	977	254
Number of individual sites reported	155	69
Top three most reported sites (number of times reported)	WebMD (159) DrKoop (41) MayoClinic (24)	Motley fool (37) Yahoo finance (15) IRS (US tax site) (11)
Number of general portal sites	12	8
Number of domain specific portal sites	34	14
Number of specific topic sites	109	47

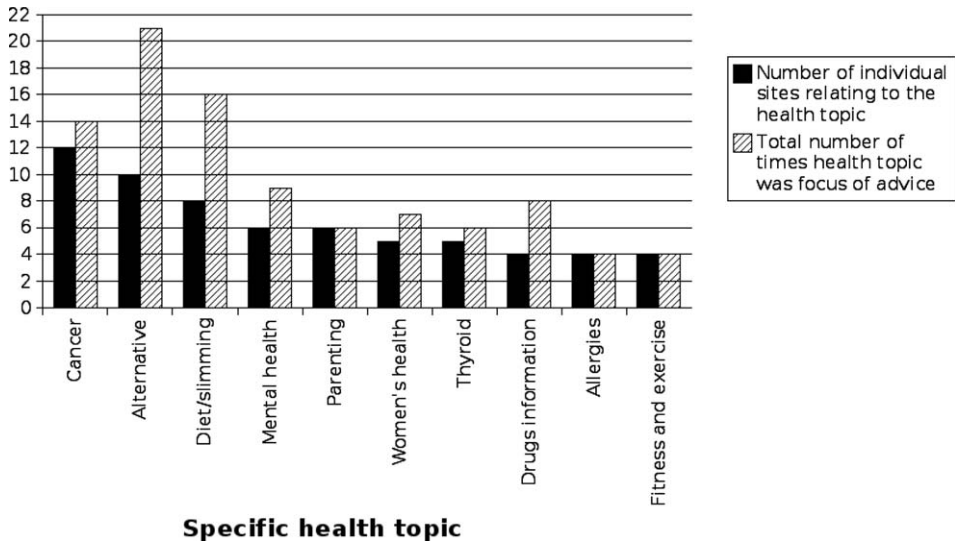


Fig. 1. The number of separate sites relating to specific health topics and the times the health topic was the focus of advice.

Table 2
Ownership of health websites

Ownership of website	Example	Number of websites (%)
Web provider	www.ivillage.com	46 (30%)
Charity-run, public information site	www.alzheimers.org.uk	37 (24%)
Retailer	www.contactlensworld.com	17 (11%)
Personal	www.geocities.com/bsy83/dn/neuropat.html	13 (8%)
Media/publishing	www.bmj.com	12 (8%)
Educational establishments	http://medocs.ucdavis.edu	10 (6%)
Government	www.nih.gov	9 (6%)
Private healthcare providers	http://plannedparenthood.org	7 (5%)
Pharmaceutical company	www.herpeshelp.com	4 (3%)

6.2.2. Finance websites

Fig. 2 shows the most frequently mentioned finance topics about which online advice has been sought. The most commonly sought after finance topic was investments (stocks and shares). This topic was the focus of 42 of the respondents advice seeking behaviour and 24 separate sites on investments and stocks and shares were noted. Other topics included tax, financial software and online banking.

Table 3 shows a breakdown of the site ownership of the different finance websites. The largest two sources by far were the financial institutions and the Web providers. Media and publishing sources also accounted for 19% of the sites ownership.

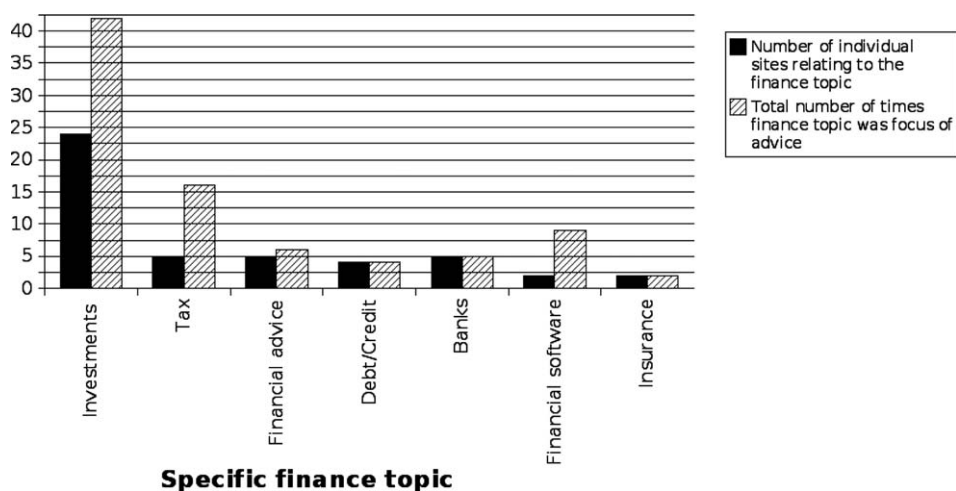


Fig. 2. The number of separate sites relating to specific finance topics and the times the finance topic was the focus of advice.

Table 3
Ownership of finance websites

Ownership of website	Example	Number of websites (%)
Financial institution	www.halifax.co.uk	30 (43%)
Web provider	www.motleyfool.co.uk	22 (32%)
Media/publishing	http://money.cnn.com/	13 (19%)
Government	http://www.irs.gov/	2 (3%)
Software company	www.quicken.com	2 (3%)

6.2.3. Comparison of health and finance websites

A number of similarities and differences emerged in terms of how people searched for the information and advice in the two domains. Other differences included responses to the different trust markers and perceptions of the risks involved with online advice.

6.3. Locating the website

Table 4 shows that in terms of locating the website the major difference between health websites and finance websites is that finance websites are located far more often via reputation or following a recommendation from a friend whereas health sites are predominantly located via a search engine.

6.4. Trust markers

Of the 18 trust statements outlined in Section 6.1, seven differed significantly between the health and the finance domains. In all cases finance websites were rated

Table 4
Comparison of how websites are located

How is site located?			
Finance websites		Health websites	
Reputation	21.7%	Reputation	8.0%
Search engine	21.7%	Search engine	50.5%
Online advert	13.8%	Online advert	16.9%
Recommendation from friend	13.4%	Recommendation from friend	6.1%
Article	8.3%	Article	4.8%
Other	20.1%	Other	12.7%

more highly (participants agreed more strongly with the statements) than health websites.

4. The site was owned by a well known brand and featured its name and logos ($z = 8.8$; $p < 0.01$)
8. I felt involved in the way the site tried to find appropriate advice ($z = 2.2$; $p < 0.05$)
9. The site was interactive ($z = 6.5$; $p < 0.01$)
10. The advice was tailored to me personally ($z = 4.8$; $p < 0.01$)
14. I had used the site before ($z = 7.3$; $p < 0.01$)
15. The way the site went through the process of giving advice was predictable ($z = 3.9$; $p < 0.01$)
18. I am knowledgeable about the subject area I was looking for advice about ($z = 2.2$; $p < 0.05$).

Finance sites were felt to be more branded, more interactive, and more predictable than health sites. The advice on finance sites was more personally tailored than on health sites. Users felt that were more knowledgeable about the subject of finance compared to health and they felt more involved in the process by which the finance sites tried to find appropriate advice.

Risk associated with online financial or health advice. The risk associated with acting upon financial advice was perceived to be higher than the risk associated with acting on health advice ($z = 9.7$; $p < 0.01$). In the finance domain the main type of risk associated with online advice was a risk to money. 81.8% of respondents cited money as being the main risk with 8.5% citing time and 2.8% citing a risk to personal information. In the health domain the majority of respondents cited a risk to their health or to another's health (48.1%). They included comments such as "health – possibly my life"; "making wrong health decision" and even "killing my son." 24.4% said the main risk was time and 13.3% said risk was to their personal information. Only 4.6% said the main risk was to their money. There was no difference in terms of the level of trust overall in relation to the two domains' advice. There was also no difference in terms of acting upon the advice. 75.7% of respondents had acted upon the health advice and 73.7% of respondents had acted upon the financial advice.

6.5. Summary and discussion of study 2

People searching in both domains found advice from a number of different websites. The health websites used by the participants were often portal sites and many were owned by Web providers. Many of the most visited finance sites were also portal sites owned by Web providers but the largest percentage were owned by financial institutions. The range of topics searched for differed between the two domains. There were fewer topics within the finance domain compared to health domain. Investment was by far the largest search topic on finance whilst cancer, alternative health, diet and slimming were the largest topic areas on health. There were differences in terms of how people located a website. Reputation and recommendation played a larger role in financial websites than in health websites which were often located using a search engine. In terms of the trust markers brand, tailoring and predictability were all important in finance and more so than in health. The level of trust across all sites was high and there was no overall difference between the two in terms of trusting the advice.

7. Discussion and conclusion

The aim of this study was to understand the important trust factors for genuine consumers in acting upon online health and financial advice. In the first study a number of themes regarding trust emerged from the health and finance discussion groups. These included both content as well as visual appeal or design issues. Participants were most concerned with the idea of quality information with tailored advice. In the finance discussion groups participants wanted branded websites yet independent and unbiased advice and in the health discussion groups participants wanted the website's motivations to be transparent. They also wanted access to both medical and other kinds of 'expert' advice. It is interesting to note that these wish lists do not differ that greatly from the comments made by the 'experts' within the [Stanford et al. \(2002\)](#) study. For example:

"Finance experts assigned more credibility to finance sites that provided investors with a great deal of unbiased educational information and research, rather than nudging consumers towards their own products or services." page 4.

In the second study we turned our attention to consumers who had sought either financial or health advice online and examined the sites that they used. We also examined their evaluation of the trust markers in relation to those sites. In particular we focused on branding, site motivations and personalisation. The financial sites that people had used for online advice tended to be heavily branded and the majority were owned by financial institutions complete with their own branding. The sites were often located via reputation again suggesting that they are well known through name, logo and branding.

In terms of the health sites and the participants desire to have transparent motivations many of the sites used in the questionnaire study were owned by charities

and only 3% were owned by pharmaceutical companies. Again this highlights differences between consumers, especially those with an interest in the health topic, and experts in terms of the way they search for and appraise information. Reed and Anderson (2002) recommended that women search for health information regarding the menopause and Hormone Replacement Therapy (HRT) on pharmaceutical websites because of the high levels of accuracy on such sites. Previous work (Sillence et al., 2004a) and this current study have shown that consumers tend to avoid and mistrust sites sponsored by pharmaceutical companies because of the site's motivations and obvious biases.

In both sets of discussion groups the participants expressed their desire for personalised or tailored information and advice from online sources. The sites that people visited as revealed in study 2 indicate that this feature is indeed important when people are using sites to search for and act upon both health and financial advice. Many of the sites viewed contained interactive elements which allowed participants to post questions and to input personal details in order to get more specific answers and tailored advice. Motley Fool (www.motleyfool.co.uk) has a large discussion board section and has a heading for a 'community' area. This suggests that consumers are interested in seeking other people's opinions and advice and that it is possible to get more specific advice by asking detailed questions. Such websites provide a way of reaching out to a larger number of people and thus a larger number of potential answers. It is interesting to note that the people in these communities are other 'like-minded' people, they are other consumers rather than official financial or medical experts or advisors. The large number of personal pages in the health domain also testifies to this. Personal pages are websites which have been written and maintained by interested and enthusiastic individuals rather than organizations. This kind of website was not included within the Stanford et al. (2002) study. People in the health and financial discussion groups, however, thought that information and advice was more credible if it was provided by someone who had experienced the condition or problem themselves. People took advice from a range of different sites, sites which may not have fared very well in an expert evaluation. Many of the sites, however, did contain those same elements judged to be good and desirable by the experts.

A number of different trust markers were rated as being more important for finance websites than for health websites. The majority of trust statements in which people indicated a stronger agreement in relation to financial websites than to health websites relate to the notion of 'predictability.' By that we mean that the site should be consistent with other sites in the same domain or should borrow from off-line practices – to the extent that the user feels he or she is in familiar territory and feels that the steps within a transaction are relatively predictable. Essentially there should be no major surprises. Whilst finance sites have relatively high 'predictability' health sites are perhaps used in a different way. Rather than trying to mirror the offline experience with the doctor people want advice that they can browse through and dip in and out of when the need arises.

The two kinds of sites, financial and health, are used by different people and in different ways. There was a gender bias in terms of site usage with far more women using the health sites and more men using the finance sites. Many of the finance sites

were owned by financial institutions and people may be using them in a similar – yet more convenient way to their ‘bricks and mortar’ counterparts. The health sites were more varied. Many were portal sites which people can dip in and out of but others were very specific topic sites run by Web providers, charities and interested individuals. However, in both domains people trusted the advice they received and usually acted upon it.

As predicted the participants in our study, with a greater stake in the outcome of their Web searches, paid close attention to the content of selected sites and were careful and critical evaluators of the information. We can presume that for these users – faced with genuine health or financial risks associated with taking the online advice – involvement with the site was high. This is important when we consider trust and reflects the work of Chaiken (1980) who described two experiments that show that the degree of *involvement* in an issue affects processing strategy – those participants with low involvement adopted a heuristic approach to evaluating a message and were primarily influenced by its attractiveness, whereas those with high involvement adopted a systematic approach – presenting more arguments to support their judgment. Our results are also consistent with a number of other studies in the persuasion literature that show that people use cognitively intense analytical processing when the risks involved are great, or the task is particularly engaging, whereas they use affect or other simple heuristics to guide their decisions in low risk situations when they lack the motivation or capacity to think properly about the issues involved (Albarracín & Kumkale, 2003; McAllister, 1995; Petty & Wegener, 1999).

Our work continues to provide evidence for a staged model of trust in which visual appeal influences early decisions to reject or mistrust sites, whilst credibility and personalisation of information content influences the decision to select or trust them. Previous research (Sillence et al., 2004a, 2004b) has indicated that when making early decisions to reject or mistrust a website that visual appeal and design issues are important. Some health portals have recognised the importance of design issues in developing trust. They have chosen to build the most user friendly website as a way of improving the trustworthiness of the portal as opposed to focusing purely on the best medical content (Luo & Najdawi, 2004). Even in the Stanford et al. (2002) study 16% of the finance experts’ comments related to design look and feel. Visual design is an important feature of a website. Hassenzahl and Trautmann (2001) refer to the ‘character’ of a website. The character of a website refers to its holistic overall impression which depends on its visual design, wording and as well as content. The character of the website will impact upon its interpretation and users’ future interaction with site. If its not clearly laid out and easy to navigate then people will not want to engage with the site any further. Rather than viewing design issues as shallow they should be perhaps regarded as an important feature with real implications. If people cannot move beyond the poor design then the quality of the content becomes irrelevant.

It is perhaps not that surprising that people express wishes about the content based features of online advice prior to searching and then, at least initially, fall back on visual appeal factors in terms of rejecting poor sites. The majority of comments made by genuine consumers, and indeed experts, concerning ideal online advice relate to

content features such as ownership, quality and depth of information and personalisation. Once online searching commences however, consumers are often overloaded with the sheer volume of results and so have to make use of some simple heuristics, involving low cognitive effort, based on visual appeal to sift out and reject poor sites (Peterson et al., 2003; Sillence et al., 2004a). The sites that they then choose to engage with and act upon are once more related to issues of content and quality.

These findings overcome methodological criticism that many studies of online trust do not engage real users with genuine concerns. This paper has added support for the idea of a two-stage model of trust by examining the sites that people have chosen to engage with. Real users with a genuine interest are careful evaluators of content and in that respect they are not so unlike ‘experts’ however, it is important to remember that consumers may still want different things from websites than ‘experts’. Medical experts, for example, are not the same as people with genuine health concerns who may want support and empathy in addition to purely medical content. Future work will examine a potential third stage of the trust model – in which the consumer develops a long-term trusting relationship with a particular site. It will also focus upon the way in which consumers integrate advice taken from websites with other offline sources of information and advice.

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References

- Albarracin, D., & Kumkale, G. T. (2003). Affect as information in persuasion: A model of affect identification and discounting. *Journal of Personality and Social Psychology*, *84*(3), 453–469.
- Bhattacharjee, A. (2002). Individual trust in online firms: Scale development and initial test. *Journal of Management Information Systems*, *19*(1), 211–241.
- Briggs, P., Burford, B., De Angeli, A., & Lynch, P. (2002). Trust in online advice. *Social Science Computer Review*, *20*(3), 321–332.
- Briggs, P., de Angeli, A., & Simpson, B. (2004). Personalisation and trust: A reciprocal relationship? Forthcoming. In M. C. Kalat, J. Blom, & J. Kalat (Eds.), *Designing personalized user experiences for e-commerce*. Dordrecht: Kluwer.
- Brown, J., & Goolsbee, A., (2000). Does the Internet make markets more competitive? Evidence from the Life Insurance Industry, Working paper, John F Kenney School of Government, Harvard University.
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology*, *39*, 752–766.
- Ciccotello, C. S., & Wood, R. E. (2001). An investigation of the consistency of financial advice offered by Web-based sources. *Financial Services Review*, *10*, 5–18.
- Egger, F. N., (2000). Trust me, i'm an online vendor: Towards a model of trust for e-commerce system design. In Szwillus, G., Turner, T., (Eds.). *CHI2000 Extended Abstracts: Conference on human factors in computing systems*, The Hague, NL, April 1–6, (pp. 101–102). ACM Press.
- Eysenbach, G., & Köhler, C. (2002). How do consumers search for and appraise health information on the world wide web. Qualitative study using focus groups, usability tests, and in-depth interviews. *British Medical Journal*, *324*, 573–577.

- Eysenbach, G., Powell, J., Kuss, O., & Sa, E-R. (2002). Empirical studies assessing the quality of health information for consumers on the world wide web, a systematic review. *Journal of the American Medical Association*, 287(20), 2691–2700.
- Fogg, B. J., Kameda, T., Boyd, J., Marchall, J., Sethi, R., Sockol, M., et al. (2002). Stanford–Makovsky Web credibility study 2002: Investigating what makes websites credible today, A Research Report by the Stanford Persuasive Technology Lab & Makovsky & Company, Stanford University. Retrieved (July 15th, 2003) from : <http://www.webcredibility.org>.
- Fogg, B. J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., et al. (2001). What makes websites credible? A report on a large quantitative study. In *Proceedings of CHI 2001*, March 31 to April 4. Seattle, New York: ACM Press.
- Fox, S., & Fallows, D., (2003). Internet health resources: Health searches and e-mail have become more commonplace, but there is room for improvement in searches and overall Internet access. Pew Internet Research. Available at: <http://www.pewinternet.org>.
- Hassenzahl, M., & Trautmann, T. (2001). Analysis of websites with the repertory grid technique. In *Proceedings of CHI 2001* (pp. 167–168). Seattle, NY: ACM Press.
- Lee, J., Kim, J., & Moon, J. Y. (2000). What makes Internet users visit cyber stores again? Key design factors for customer loyalty. In *Proceedings of the Conference on Human Factors in Computing Systems CHI 2000* (pp. 305–312). New York: ACM.
- Lee, J., & Moray, N. (1992). Trust, control strategies and allocation of function in human–machine systems. *Ergonomics*, 35(10), 1243–1270.
- Lee, J., & Moray, N. (1994). Trust, self-confidence, and operators' adaptation to automation. *International Journal of Human–Computer Studies*, 40, 153–184.
- Luo, W., & Najdawi, M. (2004). Trust building measures: A review of consumer health portals. *Communications of the ACM*, 47(1), 108–113.
- McAllister, D. J. . (1995). Affect-based and cognition-based trust as foundations for interpersonal cooperation in organizations. *Academy of Management Journal*, 38(1), 24–59.
- McKnight, D. H., & Chervany, N. L. (2001). Trust and distrust definitions one bite at a time. In R. Falcone, M. Singh, & Y.-H. Tan (Eds.), *Trust in cyber-societies*. Berlin: Springer-Verlag.
- Montoya-Weiss, M., Voss, G. B., & Grewal, D. (2003). Determinants of online channel use and overall satisfaction with a relational multichannel service provider. *Journal of the Academy of Marketing Science*, 31(4), 448–458.
- Nua Internet Surveys. (2003). US Net Users Flock to Online Tax Services Sites. April 7th http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905358757&rel=true.
- Peterson, G., Aslani, P., & Williams, K. A. (2003). How do consumers search for and appraise information on medicines on the Internet. A qualitative study using focus groups. *Journal of Medical Internet Research*, 5(4), e33.
- Petty, R. E., & Wegener, D. T. (1999). The elaboration likelihood model: Current status and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 41–72). New York: Guilford Press.
- Preece, J., & Ghozati, K., (1998b). Offering support and sharing information: A study of empathy in a bulletin board community. In Paper Presented at the Computer Virtual Environments Conference, Manchester UK.
- Reed, M., & Anderson, C. (2002). Evaluation of patient information Internet websites about menopause and hormone replacement therapy. *Maturitas*, 4, 135.
- Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology*, 49(95), 112–154.
- Riegelsberger, J., Sasse, M. A., & McCarthy, J. (2003). Shiny happy people building trust? Photos on e-commerce websites and consumer trust. In *Proceedings of CHI2003*, April 5–10, Ft. Lauderdale, FL, USA. New York: ACM Press.
- Rose, S., & Daragahi, B. (1999). The top 50 financial websites. *Money*, 28(12), 178–188, Available at:<http://www.gfn.com/realestate/story.phtml?sid=4654> .
- Sillence, E., Briggs, P., Fishwick, L., & Harris, P. (2004a). Trust and mistrust of online health sites. In *Proceedings of CHI2004*, April 24–29 (pp. 663–670). Vienna, Austria: ACM Press.

- Sillence, E., Briggs, P., Fishwick, L., & Harris, P. (2004b). What parents make of MMR and the Internet. *He@lth Information on the Internet*, 39, 5–6.
- Smart, J. M., & Burling, D. (2001). Radiology and the Internet: a systematic review of patient information resources. *Clinical Radiology*, 56(11), 867–870.
- Stanford, J., Tauber, E., Fogg, B. J., & Marable, L., (2002). Experts vs. online consumers: A comparative credibility study of health and finance websites. In *Consumer Web Watch Research Report*. Available at http://www.consumerwebwatch.org/news/report3_credibilityresearch/slicedbread_abstract.htm.
- Steinbruck, U., Schaumburg, H., Duda, S., & Kruger, T. (2002). A picture says more than a thousand words: photographs as trust builders in e-commerce websites. In *Proc. CHI 2002*. Vienna, Austria: ACM Press.