

Triggering Trust: To What Extent Does the Question Influence the Answer When Evaluating the Perceived Importance of Trust Triggers?

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ABSTRACT

Trust is a critical component of business to consumer (B2C) e-Commerce success. In the absence of typical environmental cues that consumers use to assess vendor trustworthiness in the offline retail context, online consumers often rely on trust triggers embedded within e-Commerce websites to *contribute* to the establishment of sufficient trust to make an online purchase. This paper presents and discusses the results of a series of studies which took an *initial* look at the extent to which the context or manner in which trust triggers are evaluated may exert influence on the perceived importance attributed to individual triggers. We hope that our investigations will help inform the evaluation approaches adopted to assess consumer trust.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation (e.g., HCI)]: User Interfaces – *evaluation/methodology, screen design.*

General Terms

Human Factors, Design.

Keywords

Trust, trust trigger, evaluation, e-Commerce.

1. INTRODUCTION

“Without trust, development of e-Commerce cannot reach its potential” [3, pg. 2].

Trust is generally accepted as an important facilitator of e-Commerce given that online transactions typically require consumers to divulge personal and financial information [20, 23]. Compared to traditional commerce, e-Commerce transactions are more impersonal, anonymous, and automated [14], and trustworthiness cannot be assessed by means of body language and traditional environmental cues [10], making trust especially significant.

Trust is a complex concept which has been the subject of study across different disciplines. Sociological research asserts, for

example, that modern society would not be possible without trust [14] and business studies of trust have identified credibility (the belief that the vendor has the necessary capacity to complete a task effectively and reliably) and benevolence (the belief that the vendor has good intentions and will behave in a favourable manner even in the absence of existing commitment) as critical factors of trust [14]. Trust is mostly learned during childhood: the extent of one’s trust as a child largely determines the extent of one’s trust as an adult [10]. Trust reflects an optimistic world view and a belief that others share one’s fundamental values; it stems from an upbeat world view that is transmitted early in life from one’s family [41]. Mistrust, in contrast, reflects a pessimistic world view and a perception that things are beyond one’s control [10].

In computer science, a series of models of trust and its formation have been proposed. These range from the mathematical [e.g., 25] to the abstract [e.g., 6, 15, 18, 38]. Researchers have adopted different classifications of trust. For example, Head *et al.* [16] distinguish between *soft* and *hard* trust; the former, unlike the latter, cannot be resolved through the application of technology. McCord and Ratnasingam [27] define two types of trust: *technological trust* which relates to an individual’s belief that a website’s underlying technology infrastructure and control mechanisms are capable of facilitating the transactions; and *relational trust* which concerns, relative to an online transaction, consumer willingness to accept vulnerability based on positive expectations regarding vendor behaviour. They argue that technological trust (in the form of, for example, website appearance) distils a perception of security and reliability that contributes to the potential for a consumer to trust an e-vendor, and that relational trust is based on the attitudes and behaviours of consumers as they relate to interface elements such as privacy policies, assurance seals, and testimonial or vendor information. Ulsaner [40] differentiates between *strategic trust* – which helps us decide whether a website is ‘safe’ – and *moralistic trust* – which is based on the world view we learn at a very early age and which gives us sufficient faith to take risks. He stresses that moralistic trust plays an important role in people’s views of the Internet as an opportunity or as a threat. Marsh and Meech [26] distinguish between *initial* (or ‘grabbing’) trust and *experiential trust*. They note that many of our initial trusting decisions are spontaneous and claim that if a user is turned off by a website, a vendor will never succeed in moving consumers from the level of initial or spontaneous trust to the more established levels of experiential trust. Website design characteristics strongly affect/influence consumers’

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¹ This work was completed whilst at the National Research Council of Canada (NRC).

decisions to buy online [22, 44]; many of these decisions are trust-based.

Common to most models and classifications of trust is the concept that trust is multidimensional and that there is a dimension of trust that lies deep within the essence of the consumer – that is, the consumer's *disposition to trust* [1]. Disposition to trust is a measure of the extent to which an individual is willing to depend on others [34]. It is not based on experience with, or specific knowledge of, a particular trusted party; rather, it is the result of general life experience and socialization [18, 28]. Gefen [9] suggests that for new relationships – such as between a consumer and a previously unused e-vendor – disposition to trust is a strong determinant of initial trust. Consumers' disposition to trust has been shown to exert a strong impact on their trust in an e-vendor and their subsequent intention to purchase [27]. Given only limited information about an e-vendor, consumers who exhibit a greater disposition to trust will more readily trust the e-vendor, whereas other consumers will require more information in order to establish trusting beliefs in the vendor [35]. Kim *et al.* [18] suggest that the different developmental experiences, personality types, and cultural backgrounds of consumers influence their inherent propensity to trust and their ultimate placement of trust in a vendor. Since trust makes people willing to take risks, trusting people are more likely to take risks online (such as providing credit card details) [10]; a person's *online* trust mirrors his or her trust *offline* [10]. Trust does not dictate the frequency with which someone goes online nor does the frequency with which someone surfs online affect their establishment of trust and/or the essence of their trusting nature [10]. People can engage in virtually identical online interactions yet reach widely different judgements as to whether the interactions were trustworthy – what is considered harm in online transactions may not have broad societal agreement [7].

Sutherland and Tan [38] explicitly include the personality-based *dispositional trust* in their multidimensional model of trust. They posit that if an individual has trouble forming trust in general, then he or she is unlikely to find it easy to trust a remote third party such as an e-vendor. They propose that extroversion and openness to experience lead to a higher disposition to trust and, conversely, that neuroticism (a tendency to experience negative emotional states) and conscientiousness leads to a lower disposition to trust. Thus, they propose a link between personality type and trust at the overarching level of an individual's *propensity* to trust.

In their 'call to arms', Marsh and Meech [26] challenged website designers to start thinking about how trust can be facilitated in the initial ('grabbing') stages of online engagement, claiming that websites can be designed in such a way that trust is an integral part of the design rather than an afterthought. In the offline world, consumers exhibit attitudes and behaviours that are affected by intrinsic cues gathered from the physical environment in which they make a trust-based decision [38]. Self-perception theory posits that one's attitude towards another party is formed through interaction with that party and through circumstantial information [19]. People typically draw on cues from their environment to determine the nature of their own vulnerabilities and the good will of others [7]. Since consumers cannot physically interact with online vendors to elicit these trust-informing cues [5], designers must create new social norms for professional e-Services [36] – that is, they must ensure that consumers' behaviour or actions on a website enable them to form their trust in an online vendor [19, 33]. Some researchers [e.g., 31] go so far as to suggest that e-

Consumers will, over time, rely on fewer physical (real-world) sources of information when making online purchasing decisions – thus the importance of trust triggers is only likely to increase over time. Furthermore, individual consumers differ in their trusting personality traits and the rate at which they acquire, from the website, the cues necessary to trust, and commence an online transaction with, an e-vendor [15]. Limaymen *et al.* [22] introduce the notion of *perceived consequence* and discuss how it is influenced by user interface design. This influence stresses the need to better understand the extent to which consumers place perceived importance on given trust triggers. In essence, designing trust in B2C e-Commerce is an increasing concern for the field of human-computer interaction [33].

Motivated by Marsh and Meech's challenge, Sutherland and Tan's recognition of the significance of consumers' disposition to trust, and the extensive research that has considered the components and structure of an e-Commerce website design that might induce consumer trust [e.g., 1, 2-4, 8, 15, 17, 39, 43, 45], we conducted an initial investigation into whether consumers with different personality types (a) do in fact (as suggested by Sutherland and Tan [38]) exhibit different trusting attitudes in the context of B2C e-Commerce, and (b) rely on different trust cues during their assessment of first impression e-vendor trustworthiness [24]. Our results suggested some interplay exists between personality and trust in B2C e-Commerce and indicated that there is some evidence that different personalities attribute different importance levels to each of the accepted trust triggers [24].

In reflecting on our earlier work, we began to question the extent to which the context in which the importance of individual trust triggers is evaluated affects the perceived importance attributed to each trigger. Obviously, with as complex an issue as trust, there are many, many ways in which trust triggers might be evaluated through any number of different lenses – with correspondingly numerous ways in which evaluation approaches might ultimately influence the results obtained. Recognizing that we cannot address all of the potential questions in this regard in one study, we chose to focus on an *initial* study that looked at the following two questions as they pertain to the evaluation of the perceived importance of individual trust triggers in the establishment of (principally) 'grabbing'/initial trust:

- *Q1: Does specifically asking participants to rate individual, listed trust triggers encourage them to artificially attribute deeper and more even consideration of trust cues than they would normally?*
- *Q2: To what extent does the product type/value influence participants' perception of the importance of individual trust triggers?*

The research presented in this paper documents our efforts to address these questions. In particular, it represents a reflection on approaches to evaluating the importance of trust triggers; it is intended as a source of commentary and observation rather than any iron clad guidance or categorical proof of methodological supremacy. Section 2 introduces the concept of trust triggers, and outlines the classification of triggers we adopted for our research; it identifies the triggers on which we focussed during our research. Section 3 introduces our first study – our baseline study – and outlines the trust trigger importance ratings observed during this study; in particular, we note observations that did not match those we anticipated and discuss suggestions as to why our evaluation approach may

have led to these findings. Section 4 introduces our second study, designed to answer Q1; it describes how the study was conducted in relation to Study 1, outlines the results of the study, and compares the results obtained with those from Study 1 in order to answer Q1. Section 5 adopts a similar model to describe our third study and discusses the findings relevant to Q2. We conclude in Section 6 with a brief discussion of the implications of our findings as well as further work.

2. TRUST TRIGGERS

Various studies have highlighted several *trust triggers* – that is, website components that act as circumstantial cues for consumers during their assessment of vendor trustworthiness [e.g., 1, 3, 17, 32, 45]. Amongst these, we looked for agreement on the validity of triggers. Yang *et al.* [45], Jarvenpaa *et al.* [17], and Akhtar [1] verified that availability of customer testimonials and feedback is important when attempting to engender consumer trust. Yang *et al.* [45] and Akhtar [1] confirmed that user-friendly interface design and navigation, and readily available information on the vendor’s processes and policies, trigger development of trust amongst consumers. Independently, Yang *et al.* [45], Jarvenpaa *et al.* [17], and Cheskin Research [3] concluded that branding – that is, the display of a prominent logo which easily identifies a vendor – is a significant environmental cue during the development of trust. Yang *et al.* [45] and Cheskin Research [3] also agreed on the importance of logos for third party certification and/or seals, professional interface design, and the availability of both online and offline channels of communication between the consumer and vendor. Akhtar [1] and Cheskin Research [3] agreed that up-to-date technology and security measures (e.g., the use of Secure Sockets Layer (SSL) technology) were verifiable trust triggers. All of the aforementioned trust triggers were additionally verified by Riegelsberger and Sasse [32].

Table 1. Classification of trust triggers.

| Trust Trigger | Classification |
|--|-------------------|
| customer testimonials and feedback | Immediate |
| professional website design | |
| branding | |
| third party security seals | |
| up-to-date technology and security measures | |
| alternative channels of communication between consumers and the vendor | |
| clearly stated policies and vendor information | |
| ease of navigation | Interaction-based |
| consistent (professional) graphic design | |

From the aforementioned, we were able to identify a set of triggers which had been corroborated in independent studies (see Table 1). We classified these triggers according to immediacy (see Table 1): *immediate trust triggers* come into effect as soon as a consumer views a website; *interaction-based trust triggers*, on the other hand, influence consumers’ trust assessment as a result of dynamic interaction with the website. Our focus was on the immediate trust triggers, since we were interested in consumers’ first impression assessment of trustworthiness – that is, their establishment of (principally) ‘grabbing’/initial trust.

3. STUDY 1

Study 1, as with our subsequent studies, used a questionnaire-based approach to investigate the importance of trust triggers. It asked respondents a series of questions focusing on their reaction to a colour screen dump of a mock-up of a fictitious

online bookstore website (see Figure 1), with each of the immediate trust triggers embedded within the webpage and/or visible in (or inferable from) the browser (e.g., the use of SSL).

Like Hassanein and Head [14], we used a fictitious store to mitigate against any potential bias from prior branding experience. Like Kim *et al.* [19], we felt that a book purchase would be a viable scenario for our study because a book is a standard product which is generally not susceptible to variation in quality.

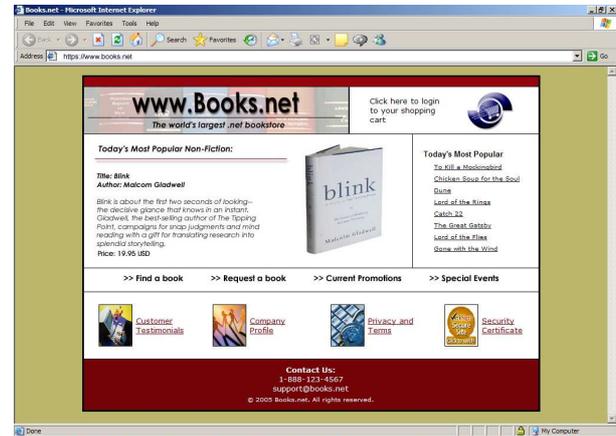


Figure 1. Online bookstore webpage mock-up.

We administered our questionnaire in hardcopy format to avoid potentially eliminating respondents whose general mistrust of the electronic medium *per se* would have prevented their participation in the study. On a 5 point Likert scale ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (5), respondents were asked to rate their level of agreement with 5 questions (see below) regarding their perception of the trustworthiness of the e-vendor:

- *this store is trustworthy;*
- *this store wants to be known as one that delivers on its promises;*
- *for this purchase, I would likely buy from this store;*
- *I would return to this store to browse in the future; and*
- *I would return to this store to make a purchase in the future.*

Using a second 5 point Likert scale, this time ranging from ‘very unimportant’ (1) to ‘very important’ (5), respondents were then asked to reflect on how important they felt each of the included immediate trust triggers was in terms of their trust assessment. The triggers were identified to the respondents as follows:

- *VeriSign security certificate (in lower right corner);*
- *the use of Secure Sockets Layer (use of https:// in the address bar and small lock symbol in the right corner of the bottom browser bar);*
- *privacy and terms information;*
- *company profile information;*
- *testimonials from other customers;*
- *professional looking website design;*
- *large ‘www.Books.net’ logo in the top left corner;*
- *statement on logo that www.Books.net is “the world’s largest .net bookstore”;*
- *high quality graphics;*
- *ample white space (everything is not crammed together);*

- *easy to find contact information*; and
- *contact information includes live person (phone) support, not just email.*

We received a total of 64 valid questionnaire responses: 45% of respondents were female and 55% male, with ages ranging from 18 to 65. Of the 64 respondents, 89% had previously made an online purchase.

3.1 Study 1 Results & Discussion

We stress that this and the subsequent studies reported in this paper were intended to represent an *initial* investigation into this area with the goal that we might make some initial *observations* which we can later follow up with more extensive, targeted research.

Figure 2 shows the percentage of respondents who rated each of the identified trust triggers as important at some level – i.e., awarded the trigger a score of 3 (‘somewhat important’), of 4 (‘important’) or 5 (‘very important’), or of anywhere between 3 and 5 inclusive.

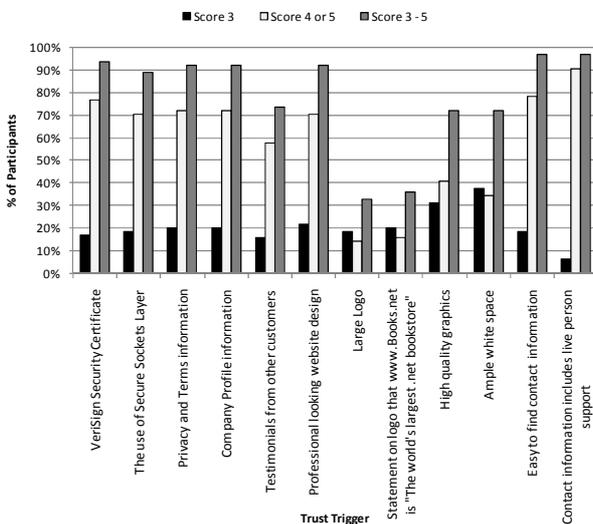


Figure 2. Percentage of participants who rated trigger as important at some level (note: Score 3-5 is the combination of the other two data series).

It is interesting to note that a larger proportion – typically, a substantially larger proportion – of participants rated the majority of triggers at 4 or 5 than rated the same triggers at 3 (a more neutral position). The exceptions to this are the large *logo*, *statement about the bookstore size*, sufficiency of *white space*, and the *quality of graphics* (although more participants did rate the latter at 4 or 5, the difference was not as large as for other triggers). The results regarding the sufficiency of white space are perhaps not that surprising; since a consumer is unlikely to give conscious consideration to the presence of white space (as opposed to a more conscious observance of the lack of white space – i.e., conscious observation of clutter), the even spread of ratings in this regard is perhaps to be expected. We anticipated that more participants would have rated the importance of the quality of the graphics at a 4 or 5. With hindsight, however, we think that the ratings observed reflect (a) the fact that the quality of the graphics *was* high and so, like white space, we were perhaps artificially expecting participants to notice this rather than to (perhaps more realistically) notice poor quality graphics, and (b) that participants are likely to *expect* high quality graphics and, as already noted, they would have perhaps been more likely to downgrade a website

presenting poor graphics than to rank highly a website that presented nothing less than they expected. The overall lack of importance attributed to the statement about the size of the bookstore is also perhaps unsurprising since, to an informed audience, it represents nothing more than marketing hype. Finally, the general lack of importance (in terms of numbers of respondents) attributed to the size and prominence of the logo deserves comment. Logos or branding are widely accepted as key to successful commerce [e.g., 3, 17, 45], so the fact that this was not considered of importance by the majority of participants was superficially surprising. We note *superficially* surprising because, by using a fictitious website to avoid brand ‘bias’, we removed respondents’ ability to include internalised brand recognition in attributing importance to this trust trigger – the logo we used encapsulated none of the relational trust (or distrust) that is encapsulated in a real known brand or logo. Furthermore, by using a fictitious company, we did not permit respondents to internally validate the statement about the company size (hence, the results discussed previously in this regard). Had we used a real, known bookstore brand, we would have avoided the artificiality of this situation and permitted respondents to draw on such aspects of relational and/or experiential trust; we were, however, interested in observing ‘grabbing’/initial trust which we could not have done without external influence if we had used a known brand – respondents would have come to the study with preconceived (be they high or low) levels of trust in the website, irrespective of the triggers it encompassed. To this end, we recognize this as both a limitation and liberating aspect of our study – as well as a clear indicator of an avenue for future investigation! It is worth noting, however, that Peterson and Merino [31] posit that e-Consumers are, over time, likely to focus less on brand information and more on attribute information during online transactions – perhaps this accounts for our observations here?

Respondents attributed relatively uniform importance to the remaining trust triggers. Of particularly high importance to most participants was the availability of contact information and the ability to solicit support from a live person (rather than merely automated or electronic support). Interestingly, this clearly demonstrates that, for the majority of consumers, the availability of the ‘human touch’ and a source of more familiar trust cues is still of significant importance even with all the other trust triggers in place.

4. STUDY 2

To allow for rapid decision making when we meet a new person, our mind reduces the multifaceted personality of the individual to a small set of predictive descriptors [37]. Upon reflection on Study 1, and with this in mind, we questioned whether we would have elicited different results if we had structured the study to encourage respondents to react to the website in this manner, as opposed to asking them to assess each trigger in turn. We questioned whether the latter may have artificially caused respondents to attribute deeper, and more even, consideration of triggers than they would normally, or naturally, have done – hence Q1. Our second study, as reported here, was designed to probe this concern – that is, by explicitly asking participants to consider each trust trigger in turn, do we affect the importance that would otherwise be naturally attributed to each trigger?

Study 2 was administered in exactly the same way as Study 1 to allow for comparison of our findings. We used the same screen dump of the online bookstore (see Figure 1) but this time, rather than list the triggers and ask respondents to rate each on a

5 point Likert scale of importance, we simply asked respondents to circle the features of the webpage that they felt contributed to their assessment of trustworthiness. They were also given the opportunity to provide comments to explain their annotations.

We received a total of 40 valid questionnaire responses: 40% of respondents were female and 60% male, with ages ranging from 18 to 55 years. None of the respondents had previously participated in Study 1 and 90% of the respondents had previously made an online purchase. To allow us to make direct comparisons on the basis of balanced group sizes between the data collected in this study and the data from Study 1, we selected the responses from a random² 40 out of the 64 respondents from Study 1. For the purpose of the following discussion, we refer to the responses from Study 1 as the Guided Group, and to the responses from this study as the Unguided Group.

4.1 Study 2 Results & Discussion

Respondents in the unguided group were not given the option to assign an importance score to webpage features (i.e., trust triggers). For the purpose, therefore, of comparing the findings from Studies 1 and 2, we applied two filters to the data from Study 1: in the first instance, we included triggers that had been assigned importance at any level – i.e., rated 3 or higher (see Guided 3+ in Figure 3); in the second, we included triggers that had been classed as ‘important’ (4) or ‘very important’ (5) – see Guided 4+ in Figure 3.

Since, in the data from this study, it was not possible for us to distinguish between *easy to find contact information* and *contact information includes live person support* when participants simply circled the contact details section of the webpage, we combined these two triggers into a single feature, namely *contact information availability*. For the guided responses, if a participant assigned importance (according to each of the two filters) to either or both of the original triggers, then they were recorded as having considered *contact information availability* as important.

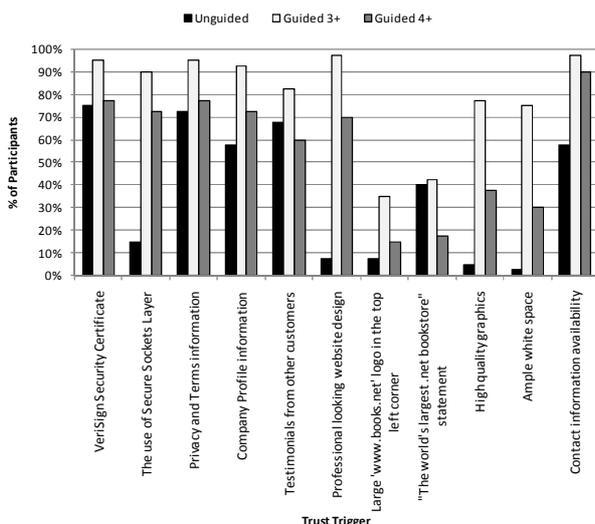


Figure 3. Percentage of participants who identified triggers as important according to study approach.

Figure 3 shows the percentage of participants, according to study group, who rated each of the triggers as important. At first glance, it would appear that when we consider those guided group respondents who rated triggers as 3 (‘somewhat important’) or higher (i.e., Guided 3+) there is evidence that, by guiding them to consider listed triggers rather than respond more instinctively to the website, we did lead respondents to assign importance to triggers that they might not otherwise have considered important. That said, if we further filter out the neutral responses (i.e., consider only ratings of 4 or 5 – see Guided 4+), the data sets for the two studies begin to show more parallels. We believe that this is a truer reflection of participants’ natural or subconscious response to the triggers – that is, they rated the triggers as ‘important’ or ‘very important’ rather than return an uncommitted neutral response. To this end, in the remaining discussion, we focus on comparing the Unguided and Guided 4+ data sets.

In only two instances – *company size statement* and *customer testimonials* – did more members of the unguided group than the guided group indicate that a trigger was important; the between-group differences are only statistically significant for the *company size statement* ($F_{1,78}=5.14$, $p=0.026$). These findings suggest that, when establishing ‘grabbing’/initial trust with respect to an e-vendor, consumers attribute more importance to these trust triggers in the absence of being explicitly made aware of other embedded trust triggers. Despite the *company size statement* being marketing hype and/or non-verifiable due to the fictitious nature of the e-vendor – and, to all intents and purposes, dismissed as such during Study 1 – it would appear to play a bigger role in consumers’ trust decision-making when their attention is not explicitly drawn to other more concrete trust indicators. In essence, it would seem that in Study 1 we actually guided participants to dismiss a trigger that they might otherwise have given more credence to.

The differences between a further 4 triggers were not statistically significant across the two groups. These trust triggers were the *VeriSign security certificate*, the *privacy and terms information*, the *company profile information*, and the large ‘*www.books.net*’ logo. This suggests that these triggers are similarly important to users (albeit the levels of participant acknowledgement of each differs according to trigger type) irrespective of whether or not they are led to consider them; in other words, consumers *naturally* consider these specific triggers, and so we can conclude that we did not artificially lead participants to consider these triggers in Study 1.

For the 5 remaining trust triggers, group had a significant impact on the ratings returned. The use of *Secure Sockets Layer* technology was rated important significantly more often ($F_{1,78}=39.45$, $p<0.001$) when guided (72.5%) than when unguided (15%). A similar pattern is evident for the following: *contact information availability* ($F_{1,78}=12.32$, $p=0.001$), where again more guided respondents (90%) rated it important than unguided respondents (57.5%); *professional looking website design* ($F_{1,78}=54.53$, $p<0.001$), where 10 times more guided respondents than unguided respondents rated it important; *high quality graphics* ($F_{1,78}=14.61$, $p<0.001$), where 37.5% of guided compared to 5% of unguided respondents rated it important; and *ample white space* ($F_{1,78}=12.58$, $p=0.001$), which was rated important by 30% of guided respondents but only 2.5% of unguided respondents. These 5 triggers fall into two groups: concrete triggers – the *Secure Sockets Layer* and *contact information availability* – which have an obvious physical presence on the webpage and can be easily identified (by circling); and conceptual or abstract triggers – the

² We wrote a small program to generate 40 random numbers between 1 and 64 (with no repeats) and used these numbers to impartially select 40 of the 64 respondents from Study 1.

professional website design, high quality graphics, and ample white space – which are recognisable, but perhaps at a less immediately conscious level (and cannot be easily circled on a webpage mock-up). On this basis, therefore, it is perhaps unsurprising that the conceptual triggers were rated important significantly more often when guided than when unguided: in the previous study, we asked participants to directly reflect on these more intrinsic features – whereas, in this study we had to rely on participants' explanatory comments to identify their consideration of these triggers since they had nothing concrete to circle, and as such may not have thought to mention their opinion of these aspects. That said, as discussed previously with respect to the findings of Study 1, the number of participants who rated these specific triggers as important was considerably lower than for other triggers and this is likely to be the result of a requirement to observe the presence of something expected rather than its absence. The results from Study 2 actually reinforce the fact that we should perhaps consider examining the importance of these types of triggers in an inverse capacity – i.e., include poor design, poor quality graphics, and present a cluttered interface to observe consumers' reaction to the lack of aspects they have grown to expect in today's society.

The findings for the two noted concrete triggers suggest that for these two specific triggers (*SSL* and *contact information availability*), we did lead participants to artificially consider their importance. That being said, the fact that respondents are not more naturally drawn to look for evidence of secure sockets layer technology is surprising. Anecdotally, consumers seem to rely on the presence of the padlock symbol to assure them of the safety of their payment details yet, when unguided, they did not rate its importance highly in our study. Perhaps this is because they were not required to enter payment information so were not actively engaged in an activity during which they would normally look for this facet of reassurance to mitigate personal risk. Perhaps the same can be said for the need to be able to contact someone within the vendor organisation.

In comparing the results from Study 1 and Study 2, we can see evidence of trust triggers for which the manner in which the question was posed (guided v. unguided) made no difference to the attributed importance. We can also see evidence of triggers for which the guided approach clearly led participants to attribute less or more importance than would otherwise have been the case. Of the latter group, we observed a sub-class of triggers – those that are conceptual or that require a person to notice the absence of something expected rather than explicitly recognize its presence – which need to be given very careful thought in terms of the way in which their importance is evaluated (irrespective of whether the approach is guided or unguided).

5. STUDY 3

Online sales estimates suggest that the electronic market serves certain product categories better than others [42], and studies have shown that consumers' intentions to shop online differ by product [42]. Books rate as one of the best-selling products online [12, 42] and the success of this market is purported to be a result of a good match between the characteristics of books and those of the electronic channel [42]. On this basis, and precedent set by other researchers [e.g., 18], we chose to focus our baseline study (Study 1) around the purchase of a book. Gefen [10], however, noted that there may be some characteristics *unique* to the online bookstore market: the online purchase of a book requires a relatively small investment of time and credit, and books themselves are not a 'risky'

merchandise. Upon reflection, we felt that perhaps our product choice was too 'safe' and that, had we selected something with a higher monetary value and/or more potential for variance in quality, we might have observed different attitudinal patterns – hence Q2. Our third study, as reported here, was designed to probe this concern – that is, to what extent does the product type/value influence the participants' perception of the importance of individual trust triggers?

Several product classification schemes have been proposed in the context of B2C e-Commerce. One scheme classifies *search* or *experience* products [11, 13, 29, 30]. *Search* products lend themselves to indirect assessment by consumers – full product information can be known prior to purchase. In contrast, *experience* products typically require direct, personal contact to facilitate assessment (e.g., taste, fit, etc.); their quality is typically hard to determine prior to purchase and use. Klein [21] goes further to suggest that there are actually two types of experience products: *experience-1* products, where it is not possible to obtain full information on dominant attributes prior to purchase; and *experience-2* products, for which it is more costly or difficult to obtain necessary information about dominant attributes prior to purchase than it is to directly experience the product [11, 21]. Girard *et al.* [11] discovered that consumers are more willing to shop for *search* products than experience products, and that they are more willing to shop online for *experience-1* products than *experience-2* products. They also identified (empirically) the most representative products according to each category, namely: *search* – books; *experience-1* – clothing; and *experience-2* – televisions.

Paterson *et al.* [30] suggest a classification scheme based on three dimensions: cost (inexpensive v. expensive); value proposition (tangible v. intangible); and degree of differentiation (branded v. generic products). Studies show that intangible products/services dominate B2C e-Commerce (they typically garner higher levels of consumer trust largely due to the immediacy of receipt following purchase [12]) and that, for tangible products, standardized products (such as books) have an advantage over differentiated products [42].

Another classification considers products according to the sensory dimensions used by consumers to evaluate products [12]: *geometric* products can be evaluated visually (e.g., books); *material* products require sense of touch for assessment (e.g., clothing); and *mechanical* products are normally evaluated by means of interaction (e.g., electronic equipment).

Consumers, in the pre-purchase phase, evaluate the merits of a given product via a process that is partially dependent on the type of product [13]. It has been suggested that products can be classified on a spectrum based on consumers' ability to gauge a product prior to purchase; the continuum is anchored at one end by products whose quality can be communicated clearly (e.g., search products) and is anchored at the other end by variable quality, look-and-feel goods whose quality can be hard to assess indirectly (e.g., experience products) [42].

As previously noted, intangible products are currently benefiting more from the online marketing medium than tangible products; the latter, therefore, present a bigger challenge in terms of garnering consumer trust, and so we (like [44]) decided to continue to focus on *tangible* products for this phase of our research. Within the spectrum of tangible products, we see low and high cost items, search and experience items, as well as geometric, material, and mechanical products. In Study 1, we focused on a low cost, geometric, search item (a book) since it represents one of the most successful products in

terms of online sales. For this study, we decided to focus on high(er) cost, experience items. These are variable quality items about which a judgement is harder to make indirectly. On the basis of Girard *et al's* study [11], we chose a high cost clothing purchase (representing a high cost, experience-1, material product) and a high cost electronics purchase (representing a high cost, experience-2, mechanical purchase).

Fictitious online vendors are often used in e-Commerce studies of trust to mitigate against potential bias arising from previous branding or experience [13]. Although, as discussed in Section 3.1, this can be both limiting and/or liberating, we decided to continue to use fictitious online vendors for this follow-on study such that we could make more direct comparisons between the results from both studies.



Figure 4. Online electronics store webpage mock-up.



Figure 5. Online clothing store webpage mock-up.

This study was administered in exactly the same way as Study 1. Using the same underlying webpage design (see Figure 1), we created a webpage mock-up for an electronic purchase (see Figure 4) and one for a clothing purchase (Figure 5). We created two versions of the questionnaire: in one we replaced the online bookstore webpage screen dump with the online electronics store webpage screen dump, and in the other we replaced the online bookstore screen dump with the online clothing store webpage screen dump.

We received a total of 40 valid questionnaire responses (20 per product type): 45% of respondents were female and 55% male, with ages ranging from 18 to 55 years. Of the 40 respondents, 90% had previously made an online purchase. None of the respondents had previously participated in either Study 1 or

Study 2. To allow us to make direct comparisons on the basis of balanced group sizes between the data collected in this study and the data from Study 1, we selected the responses from a random³ 20 (this being the group size per product) out of the 64 respondents from Study 1.

5.1 Study 3 Results & Discussion

Figure 6 shows the percentage of participants who rated the importance of the triggers as 4 or 5 (lines in Figure 6) and, specifically, as very important (bars in Figure 6) according to product type.

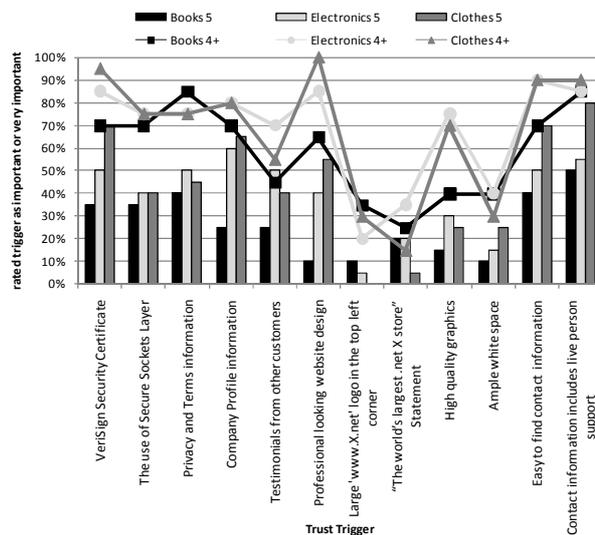


Figure 6. Percentage of participants who identified triggers as important according to product type.

Consider first, the number of participants who rated the triggers as 'important' or 'very important' (i.e., 4+). Whilst the absolute percentages differed across groups according to product type, the pattern of importance across triggers is similar for all products. For the majority of triggers, fewer respondents considering a book purchase considered the triggers as 'important' or 'very important' than participants considering the purchase of either clothes or electronics. The exceptions to this pattern lie with *logo*, *statement about company size*, *privacy and terms information*, and *ample white space*. Interestingly, during our discussion of Studies 1 and 2, we noted that the first of these are subject to anomaly due to the artificiality of the fictitious companies used in the websites. The last, the conceptual or abstract notion of *ample white space*, we have already discussed as being problematic for evaluation. We are not entirely sure as to why the availability of privacy and terms information appears to be important to more consumers when considering the purchase of a book; at best, we suggest that other triggers dominated the trust decision-making process for the electronics and clothes consumers to the point that the availability of privacy and terms information was ranked comparatively less important. Across all 12 triggers, the only group-affected difference that was statistically significant, however, was for *professional looking website design* ($F_{2,57}=4.95$, $p=0.01$); for this trigger, significantly ($p=0.0075$) more respondents considering the purchase of clothes (100%) rated it as 'important' or 'very important' than for books (65%) – the difference between

³ We wrote a small program to generate 20 random numbers between 1 and 64 (with no repeats) and used these numbers to impartially select 20 of the 64 respondents from Study 1.

clothes and electronics was not statistically significant, nor was the difference between books and electronics. Given the aesthetic nature of clothes, together with the reduced ability for a consumer to assess the product quality online, one might suggest that greater emphasis is being placed on the aesthetic quality of the website design by these consumers – almost as a proxy for evaluating the likely quality of the product (professional websites are perceived as representing greater resources and investment, just as in the real-world context, trust is influenced by a seller's investment in physical facilities – hence the perceived likelihood of greater product quality [44]); little product variance exists for books.

Consider now, the number of participants who rated the triggers as 'very important' – i.e., assigned a score of 5 to a trigger – according to purchase type (see bars in Figure 6). As with the previous view of the data, the pattern of importance across triggers remains similar for all products but we start to observe some key triggers on which clothes consumers place heightened importance – namely, the *VeriSign certificate*, *professional website design*, the aspects related to *contact information availability and type*, and, to a lesser absolute extent, the availability of a *company profile*. Whilst these are universally the triggers considered most important (as already discussed in this section and, in part, in previous sections of this paper), the difference is statistically significant only for the *company profile* ($F_{2,57}=4.13$, $p=0.021$) and perception of *professional website design* ($F_{2,57}=5.18$, $p=0.009$) when viewed according to product type. In both cases, significantly more clothes consumers rated these triggers as 'very important' than did book consumers ($p=0.029$ and $p=0.007$, respectively); there were no other differences according to group in this regard. Interestingly, but perhaps not surprisingly, respondents asked to consider the purchase of an electronic artefact seemed to place greater emphasis on *customer testimonials* and the use of *high quality graphics* than our other consumers; this seems commensurate with the nature of the product.

Triggers generally seem to be considered very important by more respondents when considering a clothes (*experience-1*) purchase, and by fewest respondents when considering a book (*search*) purchase. We observed little difference between the reliance on triggers for respondents considering clothes and electronics (*experience-2*) purchases. Our observations further demonstrate (in terms of consumer reliance on trust triggers to be reassured when making a purchase) the manner in which e-Commerce better lends itself to *search* products (such as books) where indirect product assessment is possible than to *experience* products where product quality is either very hard/impossible or more costly to determine prior to purchase (e.g., electronics and especially clothes). In the case of *experience* products we appear to have witnessed consumers' greater need to rely on alternative triggers to assist during 'grabbing'/initial trust formation – especially in the case of clothing, where standardization is not typically seen across products from different manufacturers. We have also witnessed evidence of e-Commerce's better fit for *geometric* products (such as books) which can be easily evaluated visually. In general, our respondents relied less on triggers to develop trust when considering a book purchase than for clothes (where a sense of touch is generally required to assess quality) and for electronics (which typically require interaction to determine quality). In the case of clothes, and to a lesser extent electronics, we saw evidence of quality assessment being transposed to selected trust triggers – e.g., quality of graphics, professional website design, and availability of customer testimonials in the case of the latter, and quality of graphics and

professional website design (highly aesthetic components) in the case of clothes. Across the board, we observed that the *VeriSign security certificate*, *company profile information*, and *contact information-related* triggers are the most universally rated as very important.

6. CONCLUSIONS & FUTURE WORK

The aim of our research thus far has been to *initially* investigate or observe the extent to which the nature in which the research question is posed influences the answer when evaluating the perceived importance of trust triggers for 'grabbing'/initial trust. Our intention with these studies was to provide some initial insight into how evaluation strategy or setting/context might influence outcomes, but also to determine precisely *what* to focus on in future, larger scale studies in this domain, and *how best* to structure more detailed studies.

With the caveat that our studies were based on fictitious e-vendors, we have seen evidence that not all triggers are created equal – that is, that different proportions of consumers place different levels of importance on the various immediate trust triggers that are typically embedded within e-Commerce websites. We have also observed that for some – but certainly not all – trust triggers, the manner in which the importance is queried (guided v. unguided) makes no difference to the attributed importance – the majority of triggers are naturally considered by consumers. Conversely, a guided approach clearly influences the importance attributed to some triggers (and, as such, artificially skews the results). We also highlighted a sub-group of triggers that are conceptual or that require a person to notice the absence of something that is expected rather than explicitly recognize its presence; we suggest that such triggers need to be given very careful thought in terms of the way in which their importance is evaluated (irrespective of whether the approach is guided or unguided). We have also seen evidence – albeit somewhat limited – that the nature of the product influences which triggers are considered important by consumers. In general, consumers appear to look more to certain triggers when considering a purchase of a product whose quality cannot or cannot easily be determined from visual inspection online. That said, although careful consideration should most definitely be given to product type when evaluating trigger importance, the results may only be substantially different for a small number of triggers; we witnessed many similarities in data patterns across our three product types.

We recognize a number of limitations to our research, but stress that we present this work as the tip of the proverbial iceberg – that is, as an initial insight into where we need to dig further in this aspect of human-computer interaction evaluation. In many instances, our limitations are actually direct indicators of the next phase of research. For instance, we only considered tangible products (because they are generally considered to be benefitting less from the online medium than intangible products) and so it would be useful to compare our results with those obtained focusing on intangible products. Similarly, we relied on fictitious websites to mitigate against vendor bias; it would be very interesting to run a similar study using highly visible real-life brands/websites and compare the results to our existing data which is based on fictitious branding.

We focused on *immediate* trust triggers. Future study is needed to determine how the more *interaction-based* triggers are ranked in importance and, after interaction, whether the importance of the immediate triggers is altered. Similarly, we suggest that it would be interesting to see how (a) the

importance rating of the immediate triggers alters over time as someone 'learns' the general reliability of various triggers and/or gains experiential trust with a vendor, and (b) the extent to which the ranked importance of triggers correlates with actual behaviour. We did not comprehensively evaluate the extent to which our participants were 'enlightened' e-consumers (beyond determining that 90% of respondents had previously made online purchases); future study could look to determining a mapping between e-consumer enlightenment and their reliance on specific triggers. Our study simply took a 'random' snapshot of participants' reactions to triggers.

Our study focussed on agreed trust triggers with long-standing; there are, however, increasing efforts to provide users of the web with additional site authentication information, for example, in efforts to better facilitate trust-based decision-making. Future studies could incorporate these new-wave facets to determine their comparative importance. Additionally, research is needed to determine the inter-relationships between various trust triggers and their perceived importance.

A criticism often levied at studies such as ours is the artificiality brought about by the fact that participants are not actually required to engage in a purchase and place their money or identity at risk. We suggest that a longitudinal field study would be required to truly assess consumers' immediate, and thereafter changing, reactions to trust triggers when there is an element of risk (perceived or otherwise) associated with engaging in a real-life transaction; we also feel that there remains a need to consider how best to bring that element of personalized risk into lab-based studies of trust. That is, we need to engage in studies that capture and compare the richness of data concerning real use of real-world e-Commerce websites.

Finally, our research has, to date, focused on trust triggers on websites accessed from desktop systems. We plan on developing a research program that will consider trust trigger importance on mobile technologies to determine whether mobile devices, usage contexts, or a combination of both impact differently on trigger-based trust assessment.

The research discussed here is presented merely as some *initial* information to help drive forward ongoing research into appropriate and informed methods for evaluation of perceived trust trigger importance. Although there have been many studies published that consider a plethora of aspects related to online consumer behaviour [e.g., 22, 31] and factors that contribute to the success [e.g., 23] and quality [e.g., 44] of e-Commerce endeavours (including the associated websites), there is a paucity of studies comparing associated evaluation methods and their inherent impacts. Our research represents a first step towards addressing this scarcity – specifically, with respect to implications for the evaluation of perceived trust trigger importance during 'grabbing'/initial trust formation. It also represents some food for thought in terms of how best to make use of concrete triggers based on product type – an appreciation such as this is invaluable to "web site designers who are faced with the difficult question of how to design pages to make them not only popular but also effective at increasing sales" [22, pg. 421].

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