# The Impact of Website Design on Users' Trust Perceptions

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**Abstract.** With rapid digitalization, trust has become a critical issue in designing and maintaining e-commerce platforms – without trust, no transaction takes place. Companies that design for trust have a strategic advantage over competitors. Although trust is a crucial factor in e-commerce, designing a trustworthy website can be challenging for companies that make most or part of their profits online. The study builds on prior research to propose a comprehensive and up-do-date checklist. Trust components are divided into three dimensions of website design; their impact on users' trust perceptions is studied in an online experiment with two websites. The results present demonstrable evidence that website design has a powerful impact on users' trust perceptions. Professional design, primarily visual aspects, is responsible for creating a positive user first impression. Furthermore, additional trust is built through different dimensions of website design, increasing the likeliness of buying from the site.

**Keywords:** Website design · User trust · Trust components · Trust design · Visual design · Content design · Social-cue design · Trust assessment

## 1 Introduction

A good part of communication previously carried out between humans now relies on technology and human-computer interaction. With Internet technologies and infrastructures to support e-commerce mostly established – although always evolving –, focusing on the psychological factors that affect e-commerce acceptance by online users has been on the rise. One such factor, playing a significant role in the success of e-commerce, is trust [17].

For a company, a website is often the first point of contact for potential customers, responsible for first impressions and generating revenue. Companies that design for trust have a strategic advantage over competitors. Without trust, visitors leave the website immediately. The probability of leaving is higher during the first seconds. While most companies know they need to have trust components on a website, they are often overlooked because sometimes, it does not provide measurable value [3].

**Research problem and significance.** It has been shown that web browsing exhibits a significant "negative aging" phenomenon, meaning that some initial screening has to be passed before a page is examined in detail, giving rise to the browsing behavior called

"screen-and-glean" [12]. To gain only several minutes of users' attention, a website must clearly communicate its value proposition within 10 s [13]. A study by Bentley University Design and Usability Center demonstrates that when people first navigate to a website, businesses have about 6 s to create a positive impression with users [1]. This is an extremely small window of time to convince users that the website is one that they can trust making a purchase from.

Although trust is a crucial factor in e-commerce and the concept has been widely studied by several authors, a comprehensive, easy-to-follow checklist of components that companies could utilize when designing their website was either missing or outdated. Nevertheless, almost every company struggles with website credibility, as visitors are immediately skeptical [14].

**Goal of the research.** In line with the aforementioned shortcoming, the study aims to understand the components in website design needed to build a trustworthy website; and to propose an up-do-date design checklist. The following research questions were formulated to reach this goal.

**RQ1:** How important is visual design as an initiator of trust?
**RQ2:** How is trust influenced by different dimensions of website design?
**RQ3:** How important is trust-inducing design for the purchase decision?

## 2    Background

Trust is a common and essential concept in different domains, the term has been defined in different ways, and there is no widely-accepted definition [6, 15]. Trust and trust relationships in the offline world have been a topic of research in various disciplines, such as philosophy, sociology, psychology, management, marketing, etc.; and each of these disciplines has produced its own concepts, definitions, and findings [7].

As a social being, trust is incorporated into every aspect of human life. Trust is essential for all kinds of personal relationships, "the loom on which is woven the social fabric of society" [4]. Without trust, social life breaks down, no business transactions take place, new technology is not adopted, and even political legitimacy collapses [11]. Trust is the basis for decision making in many contexts, and the motivation for maintaining long-term relationships based on cooperation and collaboration [6].

As emphasized by several authors, trust is the key to the success of e-commerce [11, 16, 17], and a prerequisite for actions involving another agent in which one may suffer physical, financial, or psychological harm [2]. Lack of trust has been identified as one of the most formidable barriers for engaging in e-commerce, involving transactions in which financial and personal information is shared [8, 18, 19].

Establishing trust relationships in a digital environment involves more aspects than in the social world because communications in the computing network rely on not only relevant human beings and their relationships but also digital components [19].

The model of trust for e-commerce (MoTEC) by Egger provides a framework of six components, regrouped into three more significant categories: pre-interactional filters (pre-purchase knowledge), interface properties, and informational content [8]. To

render the design process more coherent, the model components have been redistributed into three qualitatively different types of requirements: appeal (graphic design), usability (structure and navigation design), and trustworthiness (content design). Cheskin Research focuses on website interface cues and presents a model of six primary components that play a major role in communicating trustworthiness [5]. The building blocks of trust are seals of approval, brand, technological sophistication, navigation, presentation, and fulfillment. These blocks, in turn, can be divided into a total of 28 components that can be used to communicate functional trustworthiness. Patel lists over 40 factors that influence website credibility [14], using the four types of credibility by Fogg and Tseng [9]. *Presumed credibility*: general assumptions in the perceiver's mind; *reputed credibility*: what third parties have reported; *surface credibility*: based on simple inspection; *earned (experienced) credibility*: first-hand experience, reputation built over time. According to Patel, "The goal with each of these credibility factors is to stack the deck in your favor" [14].

From the perspective of the current study, grouping trust components within website design dimensions seems to be the most fitting framework. Elaborating on the framework by Wang [17], that allocates trust components in three design dimensions (visual, content, and social-cue design), and considering the components of a trustworthy website suggested by other cited authors, the author of the current study proposes a refined checklist of trust-inducing design components (shown in Appendix). The last dimension, the social-cue design, is amended to incorporate both social presence and social proof components.

## 3   The Study

To answer the research questions and test the checklist of trust components proposed, an experiment was carried out online, focusing on the quantitative results collected from two different websites of Estonian furniture manufacturers. The A/B test featured a between-subjects study design. The questionnaire guided participants through four separate parts: first impression, design assessment, trust assessment, and final comments. A 7-point Likert scale was used for all questions. To evaluate participants' trust perception, the trust assessment model by Gulati et al. [10] was put into practice. Lookback.io, an online user experience and screen recording platform, was used to gain additional insight into users' browsing behavior.

A pilot study was carried out on a small group of participants to evaluate the time and statistical effect to predict the appropriate sample size, plus test the experiment protocol. The sampling technique used was convenience sampling, which is often used in business studies to gain initial primary data regarding specific issues like the perception of an image of a particular brand or opinions of a new design.

A total of 50 participants were recruited for the study. Participants were randomly assigned into two groups, 25 in each. In Group A, there were 17 female and 8 male participants. The majority of them fell in two age groups, 25–35 (13 participants) and 35–44 (11 participants); 1 participant was older, aged 55–64. In Group B, the gender was slightly more equal; there were 14 female and 11 male participants. The majority of them fell in the same two age groups, 25–35 (9 participants) and 35–44 (15

participants); again, 1 participant was older, aged 55–64. Most of the participants in Group A and B were Estonians, with 2 and 1 Russian respectively. In both groups, 23 out of 25 participants had higher (tertiary) education, 2 had secondary education. A majority of participants shopped online regularly.

## 4   Results and Discussion

The results of the study present demonstrable evidence that website design has a powerful impact on users' trust perceptions. The data revealed that the website with an attractive and contemporary design (the perceived average quality of design in Website A was 5.71; first impression 5.67) implicated considerably higher trust than the website with a dull and outdated design (the perceived average quality of design in Website B was 3.54; first impression 3.16) (Fig. 1).
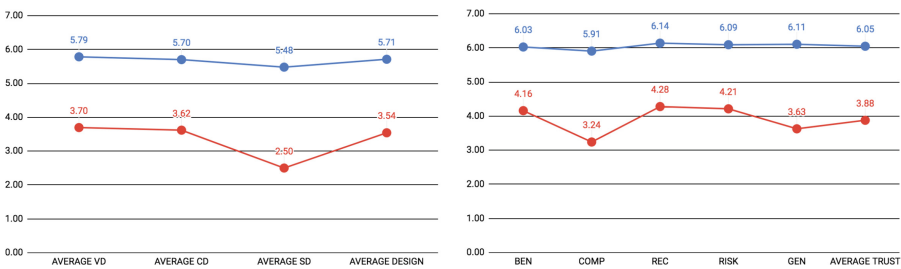


**Fig. 1.** Perceived quality of website design *(left)* and perceived trust *(right)* in Website A *(blue)* and Website B *(red)*. The three design dimensions are visual design (VD), content design (CD), and social-cue design (SD). Altogether 21 trust-inducing design components were evaluated.

In order to measure users' trust perceptions, participants were asked about benevolence (BEN), competency (COMP), reciprocity (REC), risk (RISK), and general trust (GEN) -- the constructs coined by Gulati et al. [10]. The overall trust level of Website A was 6.05 (86.41%), while the overall trust level of Website B was 3.88 (55.39%). Based on the trust model, scores between 80–90% are considered as a high trust level, while scores between 50–60% are considered as a very low trust level.

To find answers to the research questions, correlation analysis was done (see Table 1).

**RQ1 → strong positive correlation.** Participants' browsing behavior confirmed that when visitors first come to a website, they develop their first impression in a matter of seconds. The average time spent on Website A was 1 min 16 s, during which, on average, 7.81 clicks were made by 87.5% of participants. In contrast, the average time spent on Website B was only 32 s, during which, on average, 2.17 clicks were made by 25% of participants.

Professional design, primarily visual aspects, is responsible for creating a positive first impression, which, in turn, is strongly correlated with trust, leading us to believe that visual design is a vital initiator of trust.

**RQ2 → strong or moderate positive correlation (with some exceptions).** The influence on users' trust perceptions is active within all three design dimensions (visual, content, and social-cue design), indicating the importance of them all when creating or redesigning a website. There was no significant correlation between some of the design components and trust. This, however, does not mean that website visitors think of these components as unimportant. It tells us that trust perceptions are not based on one component only but rather on a collection of them. Lacking in quality of some components does not significantly decrease the overall trust level, as having a few key components does not increase users' trust to a sufficient level.

**RQ3 → strong positive correlation.** Similarly, the study affirmed the importance of trust-inducing website design for the visitor's purchase decision, i.e., whether the website succeeds in converting a visitor into a customer. The process chain here is the following: strong design fosters higher trust; higher trust makes it more likely that a visitor engages in a purchase decision. However, as with the first impression and interest, visitors' purchase decisions also depend on other factors, like their actual need for the product or service, and whether they can afford it.

**Table 1.** Correlation analysis.

| Correlations (Pearson) | | | | | |
| --- | --- | --- | --- | --- | --- |
| | Visual design | Trust | | Design | Likeliness of buying |
| First impression | .846** | .782** | Trust | .898** | .760** |
| Visual design | 1 | .845** | Design | 1 | .763** |

| Correlations (Pearson) | | | |
| --- | --- | --- | --- |
| | Trust | | Trust |
| VD1 [Design] | .815** | CD1 [Brand information] | .727** |
| VD2 [Color] | .840** | CD2 [Company information] | .238 |
| VD3 [Font] | .811** | CD3 [Contact information] | .415** |
| VD4 [Images] | .803** | CD4 [Content] | .718** |
| VD5 [Search] | .405** | CD5 [Blog/news page] | .822** |
| VD6 [Navigation] | .725** | CD6 [Grammar] | .731** |
| VD7 [Links, buttons, forms] | .619** | CD7 [Product information] | .653** |
| VD8 [Technical functioning] | .231 | CD8 [Price information] | .481** |
| | Trust | CD9 [Policies] | .775** |
| SD1 [Customer service] | .631** | CD10 [Guarantees/warranties] | .748** |
| SD2 [Social presence] | .753** | | .541** |
| | | CD11 [Important questions] | |

** Correlation is significant at the 0.01 level (2-tailed). N = 50.
VD = visual design, CD = content design, SD = social-cue design.

The independent samples t-test was used to determine whether there was statistical evidence that the means of two groups were significantly different. All results (first impression, design, trust, likeliness of buying) came back as significantly different.

The trust assessment model by Gulati et al. [10] proved to be a reliable tool for measuring trust in a website, with the Cronbach's alpha coefficient of 0.969.

## 5   Limitations and Further Research

The main limitation was the stimuli. The two websites used in the study differed in terms of product design and style. The product itself can influence the first impression, trust, and the likeliness of buying. Although the results of Website A were significantly different from those of Website B, ideally, we should have an identical product that is unknown to all participants, with the only difference being the website design, if we wanted to measure solely the impact of website design on users' trust.

While the setup of this study was able to list the trust-inducing components and provide quantitative results to confirm the relationship between design and trust, further research is required to investigate the importance of these components in different situations (their effects based on users' gender and age, for example, or a company's field of business), and how to strategically place them into the website.

A more detailed discussion and suggestions can be found in the author's full thesis.

## Appendix: The Design Checklist

| Dimensions | Explanations | Trust-inducing design components |
|---|---|---|
| Visual design | Defines the graphical design aspect and the structural organization of displayed information on the website | ✓ Professional design<br>✓ Color scheme to suit the product/service<br>✓ Nice and legible fonts<br>✓ High-quality (and authentic) images and visuals<br>✓ Good on-site search<br>✓ Easy-to-use navigation<br>✓ Clear anchor text and microcopy<br>✓ No technical problems (broken links, missing pictures or pages) |
| Content design | Refers to the informational components that can be included in the website, be they textual, graphical, etc. | ✓ Brand-promoting information (logo, slogan)<br>✓ Company information ("About" page, facts & figures)<br>✓ Contact information<br>✓ Physical address<br>✓ Useful (expert-level) content<br>✓ Good grammar, minimized jargon |

<div align="center">(<em>continued</em>)</div>

| Dimensions | Explanations | Trust-inducing design components |
|---|---|---|
|  |  | ✓ External links (sources)<br>✓ Up-to-date blog/news page<br>✓ Clients (client logos)<br>✓ Client case studies<br>✓ Product information<br>✓ Price information<br>✓ Order information (transaction reports)<br>✓ Clear policies (privacy, return)<br>✓ Guarantees and warranties<br>✓ Helpful FAQs<br>✓ Trust seals<br>✓ Awards |
| Social-cue design | Relates to embedding social and interpersonal cues, such as social proof, social presence and face-to-face interaction, into the website via different (communication) media | ✓ Staff photos and bios<br>✓ Easy access to customer service (e.g., contact form)<br>✓ Instant messaging/chat option<br>✓ Social presence (social media)<br>✓ Testimonials<br>✓ Reviews<br>✓ Reviews from influencers and notable customers<br>✓ Professional product reviews (from review sites, bloggers, customers)<br>✓ Press articles (media logos) |

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