



**DEPARTMENT OF
APPLIED IT**

TRUST ONLINE:

Visual Cues for Trustworthy News

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Abstract

This study was born in the light of the Swedish Civil Contingencies Agency's (MSB) release of a handbook on how to counter information influence activities, along with a growing distrust placed upon media outlets by the public. The purpose of this experiment was to test knowledge from earlier research in the e-commerce domain on what makes a website perceived as trustworthy but applied and tested on images of news articles. Participants ($n = 53$) read eight manipulated images of articles from *theguardian.com* where the articles either had an associated image vs. no image, had comments vs. no comments and lastly, the domain suffix had its original .com vs. the fictitious .biz. The study was designed as an incomplete $2 \times 2 \times 2$ within-group experiment, the results showed no statistically significant interaction or main effects for any condition. This means that the hypothesis of the inclusion of images, comments, and .com would all have a combined and individual trust-inducing effect can't be confirmed and conclude that the features of trustworthiness in an e-commerce website might be different from a news article.

Keywords

Trustworthiness, news articles, domain suffix, associated images, comment.

TILLIT ONLINE:

Visuella markörer för trovärdiga nyheter

Sammanfattning

Denna studie skapades med bakgrund i att Myndigheten för Skydd och Beredskap (MSB) släppte en handbok i att möta informationspåverkan samt en ökad misstro riktad mot media från allmänheten. Syftet med denna studie var att testa kunskap från tidigare forskning inom e-handelsdomänen på vad som gör att en hemsida uppfattas som trovärdig, men testades i stället på bilder av nyhetsartiklar. Delta-garna ($n = 53$) läste åtta manipulerade bilder av artiklar från *theguardian.com* där varje artikel antingen hade en relaterad bild vs. ingen bild, hade kommentarer vs. inga kommentarer och slutligen hade artikeln sitt ursprungliga domänsuffix *.com* vs. den påhittade *.biz*. Studien var designad som ett inkomplett $2 \times 2 \times 2$ inom-gruppsexperiment, resultatet påvisade ingen statistiskt signifikant interaktionseffekt eller huvudeffekter för någon av betingelserna. Detta betyder att hypotesen att inkluderingen av bilder, kommentarer samt *.com* alla skulle ha en kombinerad samt individuell trovärdighetshöjande effekt inte kan bekräftas. Slutsatsen av detta är att de element som uppfattas trovärdiga hos en e-handels hemsida kanske skiljer från nyhetsartiklar.

Nyckelord

Trovärdighet, nyhetsartiklar, domänsuffix, associerade bilder, kommentarer.

Foreword

This bachelor thesis of 15 credits (HP) was written in the spring of 2022 as a part of the cognitive science bachelor program's final course at the department of applied information technology, at the University of Gothenburg.

Both authors of this thesis have had an equal distribution of responsibilities across all aspects of this work resulting in a well-functioning and fruitful cooperation.

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1 Introduction

1.1 Overview

In 2018 the Swedish Civil Contingencies Agency (MSB) released a handbook for communicators on how to counter information influence activities. The handbook was created in response to the worsening security situation in the world and highlights how important it is to safeguard the Swedish society from a foreign power and their deployment of influence campaigns (Myndigheten för samhällsskydd och beredskap [MSB], 2018). Perhaps this handbook hasn't made many Swedes less concerned about misinformation online because a recent report shows that more than 50% of Swedes are worried that disinformation will affect the outcome of the Swedish election in autumn 2022. The same report also shows that the most frequent way of encountering political information online is in the form of news articles (Internetstiftelsen, 2022).

It is quite troublesome when one of the pillars of a democratic society, the free press, is often mistrusted and perceived as not trustworthy. Newman & Fletchers (2017) paper expands on this when they say that a lot of Europeans and Americans perceive news outlets as being biased, increasing distrust and polarized views. An environment where the public has a low level of trust in the media is one where false and dangerous narratives thrive (Liu et al., 2022). So, what features make the public perceive a news outlet or in this case, an article, as trustworthy?

There is rich literature on how to convey trustworthiness in the context of e-commerce (e.g., Lee et al., 2005; Jarvenpaa et al., 2006; Wang & Emurian, 2005), however, there is not as much research on what makes news articles being perceived as trustworthy. Consequences of lack of trustworthiness in a retailer may entail monetary loss, however, the same displaced trust in media outlets may have negative consequences for our society and democracy (Liu et al. 2022), which is why this warrants further research in this domain.

To be critical of online information, the MSB handbook mentions things such as paying close attention to the website's URL and being skeptical of high engagement levels of e.g., an article. Even though a piece has been shared, liked, or commented on a lot does not mean the content itself is correct (MSB, 2018). Liu et al. (2022) did however show that the possibility of interacting through comments increased the perceived trust in news articles, and Wogalter and Mayhorn (2008) showed that the domain suffix (e.g., .com or .edu) affects the perceived trust of a website. Wang and Emurian (2005) did a meta-study on trustworthiness in e-commerce and found several cases of how high-quality photographs increase trust in the website.

This study is testing how these three factors affect perceived trustworthiness in an incomplete 2 x 2 x 2 within-subjects experiment.

1.2 Purpose

The purpose of this experiment is to investigate how manipulation of an online newspaper's native domain suffix, exclusion, or inclusion of the article's associated image, and how the presence, or lack of, comments, affects the perceived trustworthiness of the news articles. We hope that this study can help further understand how certain visual elements can affect the perceived trustworthiness when consuming information online. Potential insight into this subject can highlight what visual elements affect us the most, or what we neglect when reading news online, this knowledge could perhaps help news consumers to be more source critical. We also aimed to fill a knowledge gap with this study, since no earlier research was found on the condition of perceived trustworthiness of comments vs. no comments in news articles.

1.3 Hypothesis

The perceived trustworthiness of a news article about an ongoing foreign conflict will be enhanced if the article has either an associated image, comments, a domain suffix of .com, or all of them combined.

2 Theory

2.1 Trust and trustworthiness

According to the Oxford dictionary (Oxford Learner's Dictionaries, 2022), trust is “the belief that somebody/something is good, sincere, honest, etc. and will not try to harm or trick you”. However, in the scientific community, it seems hard to define the concept of trust. Uslaner (2003) defines one broad aspect of trust as *moralic trust*, where “one treats other people as if they were trustworthy” based on the idea that most people share our fundamental moral values. This is not defined as a relationship between two people where “A trusts B to do X”, but rather a view of how people should behave.

Robbins (2016) on the other hand defines the more specific kind of trust as *relational trust*, where he explains this concept as a “tripartite concept restricted to a three-part relation”. This involves the truster (person A), the trustee (person B), and the matter at hand (X), where the matter at hand can be any resource, service, or behavioral capability of the trustee that is valued by the truster. He further claims that trustworthiness is the capability and commitment of a trustee to fulfill the goals and desires of the truster, meaning that “person B is trustworthy to the extent that he or she is capable and motivated to fulfill A's interests”. In an online news environment, this translates to the trustworthiness of an online news outlet (trustee) based on their capability and commitment to inform the reader (truster) of what is close to the objective truth of an event (X).

Trustworthiness is a bit different from trust. Toma (2010) explains the difference where trust is the act of the trustor, while trustworthiness is the characteristic of the trustee that indicates that he or she is worthy of trust. According to him, one can make judgments of the trustworthiness of a person or a system without real interaction by just observing the features of an individual or a system. This was tested by Willis and Todorov (2005) who did a study where participants made good judgment calls on specific traits of attractiveness, trustworthiness, and aggression after a 100 ms exposure to an unfamiliar face. One hypothesis of the study was that participants would find the highest correlation between facial appearance and attractiveness, considering they are properties of facial appearance. However, the correlations for trustworthiness were slightly higher. This might not come as a surprise considering some evolutionary psychologists claim that failing to detect cheaters and seeing who is trustworthy might jeopardize the survival of entire populations (Barkow et al., 1992).

A valid argument though is that there is a difference in judging the trustworthiness of a real person and a website. But Lindgaard et al. (2011) conducted experiments where participants

rated websites' visual appeal based on seven specific design dimensions. In one of their studies, a set of homepages was presented for 500 ms or 50 ms each, and the participants rated both stimuli fairly equally appealing. They concluded that a reliable decision on a website's visual appeal can be made in 50 ms. This relates to another study by Fogg et al. (2003) on the perceived credibility of websites. Earlier research on web credibility showed that participants highly valued things like a website having a privacy policy, but what they found was a mismatch between what people say they look for, and what they actually value. Because data showed that the average consumer paid most attention to superficial aspects like visual cues of the websites, compared to the content. Almost half of the participants assessed credibility based on the overall visual appeal of the website. Although, the visual appeal was less important for news websites.

3 Earlier research

3.1 Image

Plenty of research has been done in e-commerce on how to convey trustworthiness. Wang and Emurian (2005) did a meta-study on how users perceive trustworthiness online and based on this they created a framework of four dimensions of trust-inducing features within web interface design. The greater part of this information comes from the human-computer interactions field on how to create websites that are perceived as trustworthy based on visual elements rather than relying on technological features. Two of these dimensions are described below and were a major factor in choosing the condition of how an included or excluded image affects perceived trustworthiness.

Graphical design concerns the graphical elements of a website that gives the visitor a first impression. One factor that was found by several studies was that using real and professional-looking photographs implies a serious website (Wang & Emurian, 2005). This conclusion was also made by Basso et al. (2001), who state that “web retailers use eye-catching graphics not only to grab a user's attention but also to convey competence or professionalism”.

Content design is about informational components that may be included on the website as either textual or graphical (Wang & Emurian, 2005). An associated image to a news article can act as a graphical component and convey information on where and what has happened. A related experiment by Kostakos and Oakley (2009) examined how locative images affect the trustworthiness of a media outlet using an implicit association test. They concluded that participants have a strong preconscious association between the concepts of locatives and trust, and in our experiment, all the images are with varying degrees locative since they are from the place of the event.

3.2 Comments

The news media landscape has gone through a tremendous change in the past years. Not too long ago the majority of people consumed their news once or twice a day, getting them from established newsrooms via print, TV, or radio, compared to 2021 when eight in ten Americans get news from digital services (Shearer, 2021). Today is different though when anyone can produce, upload, and spread information without a publisher who acts as a gatekeeper. This can cause problems both for news consumers and for the public discourse since it can be hard to distinguish between real and fake information online. One very different thing is that the distance between the journalists and the readers has decreased since most news agencies allow readers to comment on articles directly. There is a fair amount of research on the topic

of how positive and negative comments affect how readers perceive the article's credibility (Kim, 2015; Naab et al., 2020), i.e., critical user comments decrease the perceived news article credibility. However, no research on how existing but not readable comments affect users was found, which is why this condition is scientifically interesting.

Although, one study by Omillion-Hodges and Rodriguez (2014) investigated the perceived trustworthiness, competence, and goodwill of a university's institutional webpage, Facebook account (with user comments and without user comments), and Twitter account (with followers or without followers). The results show that a Facebook account with comments claimed the most overall credibility but was only statistically significant for the goodwill dimension.

Liu et al. (2022) investigated different elements of trust within news articles and conducted focus group interviews to examine readers' "trust perceptions in news content and their opinions on the trust labeling mechanism". The outcome of this was a framework for digital labeling solutions to enhance readers' trust in the media. All of them were not relevant for this experiment, but one trust-inducing factor was "interactivity - the ability to provide feedback", and "interactivity with readers - the ability to interact with the author through the comments". They don't mention if there is any difference between news being posted on social media, where it might be more common to interact directly with the journalist, compared to news from an online magazine.

3.3 URL

Choosing to change the domain suffix (i.e., .com) came from the MSB handbook and was supported by a study by Wogalter and Mayhorn (2008) who looked at how trustworthy different domain suffixes (.com, .net, .org, .gov, and .edu) were, and if participants could discriminate between real and fictitious domains. What they found was that .com and .net were ranked the lowest but still had an intermediate level of trust and that the participants found it difficult to tell what was a real, or a fake domain.

When this report was written, .biz was used in 0.2% of all websites, compared to .com which was used by 53.3% of all websites (W3tech, 2022). Considering this, and *familiarity bias*, a cognitive bias, that was tested and explained by Fox and Levav (2000) as the perceived likelihood of an event taking place based on how familiar it is. What they found was that if the participant were unfamiliar with the event, they perceived it to be less likely to happen. We chose to either keep the original domain suffix of .com or change it to .biz, which is likely less familiar to the participants, hence, it might be considered less trustworthy.

The domain suffix .biz has also had a history of being used by scammers, who pose as a legitimate business, and Consumer Fraud Reporting (2022) lists .biz as one of the 15 most used domain extensions by scammers. Another website, Spamhouse, has an algorithm that calculates how many percent of the websites each domain suffix has that are considered bad, and gives them a score from zero (safe) to five (unsafe). The suffix .com has 4.2% bad domains

with a score of 0.52, whereas .biz has 11.2% bad websites with a score of 1.02. The most abused domain suffix is .surf where 51.5% of the websites are considered bad and have a score of 3.76 (Spamhouse, 2022)

3.4 Trustworthiness

The dependent variable, perceived trustworthiness, comes from a paper by Fogg and Tseng (1999) who defined computer credibility, and what makes i.e applications and websites credible. When looking into existing literature they found that credibility is used synonymously to believability, “Credible people are believable people, credible information is believable information”. They split the concept of credibility into two dimensions, trustworthiness, and expertise. The dimension of trustworthiness is based on the perceived goodness and morality of the source, expertise, on the other hand, is captured by the perceived knowledge and skill of the source.

For this study, we only focused on the perceived trustworthiness of the news articles. A reason for this is because of the keywords Fogg and Tseng (1999) use to describe trustworthiness, which is: Trustworthy, good, truthful, well-intentioned, unbiased, and honest. These all align quite well with the rules of publication set by the British National Union of Journalists Code of Conduct, i.e., i) ”Strives to ensure that information disseminated is honestly conveyed, accurate and fair.”, ii) “Differentiates between fact and opinion.”, and iii) “At all times upholds and defends the principle of media freedom, the right of freedom of expression and the right of the public to be informed.” (National Union of Journalism [NUJ], 2022). So, if the code of conduct for journalistic publication is fulfilled, then the articles should be perceived as trustworthy.

4 Method

4.1 Participants

The study included 82 participants recruited from the social media platform Facebook, after sorting out incomplete replies and two outliers, 53 participants remained. The outliers were discarded due to scores of perceived trustworthiness being zero in several conditions. The sample consisted of 29 females and 24 males. All participants were between 21 and 71 years old ($M = 34$, $SD = 13.21$).

4.2 Material

A survey was created in the software Psytoolkit (Stoet, 2010, 2017). All articles that were used were screenshotted from the British news website theguardian.com to enable us to manipulate the images. For the manipulation, the image-editing softwares Gimp (version 2.10 for Windows) and Photopea were used. For statistical analysis, IBM SPSS Statistics for Windows, Version 28.0, was used.

To gather articles for the experiment we had to choose a news outlet. We wanted all articles to come from the same news outlet to decrease the risk of potential confoundings related to differences in colors, brands, layouts, and such between different news outlets. The British online newspaper *The Guardian* was picked since it provided a broad variety of articles free of charge and since we predicted that Swedish-speaking participants were less likely to be regular consumers of their news compared to using a Swedish news site. To search for articles in a somewhat predetermined and systematic manner we decided upon some criteria that each article had to fulfill:

- it had to be an ongoing conflict, which was checked at *Global Conflict Tracker* (2022)
- the article was posted between April 2021 and April 2022
- it needed to mention casualties
- it needed to have an image
- it needed to be of somewhat equal length
- only one article per conflict/country.

Based on these criteria eight articles were chosen. To avoid confoundings concerning that respondents had pre-existing biases toward a certain conflict, we counterbalanced the experiment, so each article appeared in every condition. i.e., one respondent could see the article about a conflict in Pakistan with .com, image, and without comments, while another respondent saw the same text of the article but without the associated image, with comments, and the domain suffix of .biz.

In preparation for our survey, a pilot survey was made, and feedback was collected, which resulted in some changes and clarifications. Feedback from some participants indicated that the survey contained cues to our purpose with this study and to mitigate issues related to demand characteristics two deceptive questions were added.

Eight groups were created in a survey in Psytoolkit (Stoet, 2010, 2017) where each group contained all eight conditions but with varied manipulation of the articles, leaving a total of 64 different images of news articles. All participants were recruited via Facebook and were randomly assigned to a group. At first, the respondents were presented with the structure of the study and agreed to participate with the knowledge that their answers were anonymous and would only be used for this study. Next, they filled out their gender and age whereupon the experiment started. The conditions were presented in a random order for each participant, and there was no limit to how long each condition could be studied. When the participant decided that they were finished reading the article, they moved on to the following three questions about the distance to Sweden, how trustworthy they perceived the article to be, and how badly affected they were by the event. There was no time limit for answering the questions either. The condition followed by questions were repeated until they had seen all eight conditions, upon which they were debriefed about the real purpose of the study, that the only answer taken into consideration was how trustworthy they had perceived each article. The survey was available for respondents for 10 days.

4.3 Design and procedures

This study was designed as a 2 (news article with or without an image) x 2 (with or without comments) x 2 (with the domain extension of either .com or .biz) incomplete repeated measures design. A total of eight conditions were created and each condition was followed by three questions in Swedish, *How many Swedish miles is it from where the event happened to Sweden?*, *How trustworthy did you find the article?*, and *Were you badly affected by the article?*. All questions were answered with a sliding scale, the one regarding the distance had a range from 0 - 1000, while the two latter questions ranged from 0 - *Not too much*, to 7 - *Very much*. The dependent variable was the answer to “How trustworthy did you find this article”, while the two other questions were there for deception purposes and to decrease the risk that the participants would decipher the purpose of this study.

When the images were manipulated in the photo editor Photopea, the original authors of every article were changed to the more anonymous *Associated Press*, and all links to related articles, as well as all brand promoting logos was removed. The reason for this is to avoid other trust-inducing features that are mentioned in Liu et al. (2022) i.e., the author's name, or by Wang and Emurian (2005) i.e., a prominent slogan. Next, the text of all articles was cut to be of similar length, keeping only the headline, preamble, and two or three paragraphs to decrease the risk of participants leaving it unfinished, or just clicking through because the effort is too high. Copies were made of every article where the domain suffix was edited (.com vs. .biz),

the associated image was kept or removed, and comments were removed or added (amounts of comments ranging from 36 to 55). Lastly, the images were scaled in the photo editing program Gimp to approximately 600x700p, to better fit smaller devices such as a smartphone.

4.4 Ethical considerations

The four ethical considerations for humanistic-societal science (Patel & Davidson, 2011) were fulfilled during this study. The participants received no compensation for their involvement and were informed about the purpose of the study. The respondents agreed to voluntarily partake with the option to quit whenever they wanted and were informed that all personal information was anonymous (see Appendix 1). No excess information was collected in this study, and it was only used for this particular research. When the experiment was over, the respondents were debriefed about what we were testing.

5 Results

Out of the sample ($n = 53$), the mean score on trustworthiness for the conditions was: Article with .com, image, and comments were 5.04 ($SD=1.27$), with .com, image, no comments it was 4.94 ($SD=1.22$), with .com, no image, with comments was 4.89 ($SD=1.30$), with .com and no image or comments was 4.77 ($SD=1.49$). For the articles with .biz, image and comments were 4.94 ($SD=1.17$), with .biz, image, no comments were 4.94 ($SD=1.15$), with .biz, no image, with comments was 4.96 ($SD=1.26$), and with .biz, no image or comments was 4.83 ($SD=1.42$). All mean scores on trustworthiness and standard deviations for all conditions are also summarized in Table 1.

Table 1

Mean Score and Standard Deviation of Every Condition

Condition	Mean	Standard deviation
.Com, image, comments	5.04	1.27
.Com, image, no comments	4.94	1.22
.Com, no image, comments	4.89	1.30
.Com, no image, no comments	4.77	1.49
.Biz, image, comments	4.94	1.17
.Biz, image, no comments	4.94	1.15
.Biz, no image, comments	4.96	1.26
.Biz, no image, no comments	4.83	1.24

A three-way repeated measures ANOVA was conducted to determine the effects of the domain suffix, the presence or lack of image, and comments on the perceived trustworthiness of news articles. A boxplot was made, and there were three outliers assessed as a value of the perceived trustworthiness greater than 1.5 box lengths from the edge of the box, two of these were removed due to answering a score of zero for several conditions. The score of perceived trustworthiness was not normally distributed for any condition as assessed by Shapiro-Wilk's

test of normality ($p < .05$), however, since ANOVA has shown to be quite robust to this violation of assumed normality (Glass et al. 1972; Lix et al. 1996), it was used anyways.

There was no significant three-way interaction between domain suffix, image, and comments $F(1, 52) = 0.133, p = 0.717$, partial $\eta^2 = 0.003$. Neither were there any statistically significant two-way interaction between domain suffix*image $F(1, 52) = 1.110, p = 0.297, \eta^2 = 0.021$, domain suffix*comments $F(1, 52) = 0.062, p = 0.805, \eta^2 = 0.001$, or image*comments $F(1, 52) = 0.270, p = 0.606, \eta^2 = 0.005$.

There was also no significant main effect for either domain suffix $F(1, 52) = 0.011, p = 0.917$, partial $\eta^2 = .000$, image $F(1, 52) = 1.444, p = 0.235$, partial $\eta^2 = 0.027$, or comments $F(1, 52) = 1.893, p = 0.175$, partial $\eta^2 = 0.035$.

In conclusion, no significant interaction effect was found between domain suffixes, the presence or lack of image, or comments. There was also no significant two-way interaction effect for either comments and image, comments and domain suffix, or image and domain suffix, and no main effect was statistically significant for either condition.

6 Discussion

6.1 Results

One reason for not getting statistically significant results for either interaction effects or main effects might be the number of participants. If more participants would have been recruited, some sort of effect might have been found. Another aspect that might have influenced the results is the variance of the device used by the participants. The images of the articles were best experienced on a computer or a tablet because the image was scaled to fit the screen, but if a participant used a smartphone to do the experiment, depending on the size of the phone, they might have needed to scroll to see if there were any comments or not. This does not differ from visiting the real website but adding a question about what device the participants were using could have shown if there was a difference between being exposed to the entire image or having to scroll.

Since all respondents participated whenever they wanted to, we had no influence on the situational context when they answered the questions. It might be better to physically overlook the participation to make sure it is done correctly, however, it adds some external validity to the fact that the participants part-took on their own devices under their own conditions since that is most similar to how most people consume news today (Shearer, 2021). It is worth considering the fact that there is a difference between knowingly doing an experiment to casually reading the news.

When the data had been cleaned, a total of 31 respondents were removed, leaving 53 participants. The relatively high drop-off rate (36%) might have skewed the results of this study, combined with the fact that some participants finished the experiment in less than four minutes ($M = 8.58$, $SD = 4.89$) indicated to some extent a low respondent engagement. It is hard to tell what effect this had on the result because one side claims that humans are fast when making judgments on trustworthiness (Willis & Todorov, 2005) and how visually appealing a website is (Lindgaard et al., 2011). But, on the other side, if the participants barely read the text, it might be difficult to make a judgment on if the information in it is true. This also concerns the fact that the news articles were in English, and no measurement was taken to make sure that participants were sufficient in this language. However, in this connected world of today, it is easy to be exposed to foreign news articles, no matter your English-speaking level, and it is likely that the unconscious mind makes fairly good judgments about them anyway (Ham & van den Bos, 2011).

6.2 Methodological limitations

Regarding the methodology of this study, there are a few things worthy of taking into consideration when looking at the result. First, since the recruitment of participants was via Facebook, the majority of the part-takers were either directly or indirectly known to the authors which limits the external validity. Another issue is the generalizability; a majority of the participants are presumed to have a similar background (white, middle-class, Swedish, etc.). It's not unique to this study since most behavioral studies are conducted on western, educated, industrialized, rich, and democratic societies (also known as *WEIRD*) and their inhabitants. The consequence of this is that it's hard to generalize about human nature when the data is drawn from a relatively small slice of humanity, especially when the same slice happens to be a frequent outlier (Henrich et al., 2010). However, we have no reason to believe that our sample is an outlier compared to other similar *WEIRD* heavy populations and therefore has generalizability for this group.

Another issue concerns the source of the material. Even though The Guardian might not be of daily consumption to the participants, it's a well-established news house, and it's not unlikely that several participants were familiar with it before this experiment. We did, however, remove all the links to related articles as well as any branding associated with the magazine except for the signature "*signed in as Guardian User*" on the comment section, to keep the origin of the article from being too obvious. But still, The Guardian has thought through the web design, and based on frameworks for trust-inducing by Wang and Emurian (2005), and Liu et al. (2022), there are several cues of professionalism and trustworthiness, such as dates, the actual text, and font. This makes for a somewhat high threshold of trustworthiness to begin with, but considering that most people can create professional-looking websites today for free, an appealing website is really not a good measure of how reliable the contained information is. This makes it interesting to see how certain visual cues affect readers instead of how the general visual appeal of a website affects the perceived trustworthiness.

6.3 Usage

The knowledge of what makes a trustworthy website is a two-edged sword because the same tools that give a reliable impression, might just as well be used for the opposite reasons, to give credibility to false information. The results from this study can be used as increased knowledge regarding how visual cues affect people when they are reading the news. Considering that no information was found on how comments vs. no comments affect the perceived trustworthiness of a news article, the results might be new information. Earlier research shows that negative comments affect readers to be more skeptical about the information (Kim, 2015; Naab et al., 2020), but since no research was found on this condition, the lack of a main effect implies that perhaps the perceived trustworthiness is not affected by the mere presence or lack of comments if they are not visible to the reader.

Since the knowledge on how to present trustworthiness comes from e-commerce and was tested in a news article context, the lack of effects conveys that there might be different aspects of what makes a news article perceived as trustworthy compared to an online store. This might not be so surprising since the consequence of giving away credit card information can be higher for the individual compared to being misinformed.

6.4 Future research

To further investigate these topics, it could be interesting to see if participants would take be more aware of differences in the URL if they saw it in a more natural context i.e., pressing the actual link to be directed to the website. In the context of this study, it is easy to not pay much attention to the URL considering it's not an actual website this study was tested for, but a lot of people are exposed regularly to spam mails (Scamwatch, 2022) and would possibly be more vary of an unusual link in a real setting.

There is also the fact that the participants of this study might not have been so knowledgeable of some of the conflicts, meaning it's hard to tell if it seems true if you know nothing about it. Looking into how visual cues about events closer to home affect the perceived trustworthiness can be of scientific interest.

7 Conclusion

This study aimed to test how existing frameworks on how to create perceived trustworthiness in e-commerce works in a news article context. Also, how two features from the MSB handbook on how to counter misinformation (being critical of a website's URL and when something is shared or commented on a lot) affect the perceived trustworthiness of news articles. Existing literature shows that different domain suffixes have a difference in associated trust, that having a high-quality photograph associated with the product, and that high levels of engagement are all perceived as increasing the level of perceived trustworthiness. Based on this, the participants were expected to perceive the news articles as more trustworthy if they had an associated image, comments, or had the original domain suffix of .com, and that there would be an interaction effect when the conditions were combined.

The hypothesis had to be rejected since the results ($p > .05$) did not show statistically significant interaction effects or any main effects. A factor for this result could be that not enough participants were recruited or completed the experiment and that they only saw a static image of a website, and not a real one. This does not conclude that the guidelines from the MSB handbook on misinformation are wrong but might indicate that people do not pay as much attention to the URL as expected, which may be caused by the fact that the participants only saw a static image of a website, and not a real one. The handbook also tells us to vary the fact that even though some information has a lot of interaction does not make it true. In contrast to that, Liu et al. (2022) conclude that interactivity through comments may enhance the perceived trustworthiness of news. The results from this study could fill a knowledge gap since no research was found on this particular condition, perceived trustworthiness of comments vs. no comments. Since no main effect was found and until more research has been done, the conclusion is that the presence or lack of comments does not affect the perceived trustworthiness of a news article. Because there are a lot of studies on how an associated image increases the perceived trustworthiness within e-commerce, yet no main effect was found when trying it in another context, it implies that there might be a difference in what features people perceive as trustworthy in news articles and online stores.

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9 Appendices

9.1 Appendix 1: Consent form

Landing page before starting the survey.

About this survey

Hej! Tack för att du deltar i vår studie för vårt examensarbete.

Du kommer få se åtta korta tidningsartiklar och svara på frågor kring dessa. Det går inte ändra svaren, och det tar 10-15 minuter att genomföra.

Dina svar är anonyma och kommer endast användas i forskningssyfte, du kan när som helst avbryta studien ifall du inte längre vill delta.

Contact information

Information about this study:

Studieledare: Marco Helin & Tim Zetterquist

Institutionen för tillämpad IT, Göteborgs Universitet

Contact email: guszetti@student.gu.se

Important technical requirements for your computer

You seem to use the following browser (version number in brackets): Chrome (102)
Your browser supports the requirements of this survey.

Confirm you want to do this survey

Vänligen bekräfta att du vill delta i studien.

I understand the conditions of this study

Click this button to start survey

Important data protection information

When you start, this survey will store your answers and browser information on the [PsyToolkit server](#). The responsibility for this survey rests entirely with the researcher(s) listed above. [Click here if you do not want to participate now.](#)

9.2 Appendix 2: Conditions in group 1

Condition with .com, image, and comments

[s://www.theguardian.com/global-development/2022/apr/06/tigray-has-been-the-scene-of-ethnic-cl](https://www.theguardian.com/global-development/2022/apr/06/tigray-has-been-the-scene-of-ethnic-cl)

Global development

Tigray has been the scene of 'ethnic cleansing', say human rights groups

Human Rights Watch-Amnesty report accuses Ethiopian paramilitaries of war crimes and crimes against humanity



Displaced women at a camp in Sekota. The report says hundreds of thousands of people were forced from their homes in a campaign of ethnic cleansing. Photograph: J Countess/Getty

Ethiopian paramilitaries have carried out a campaign of ethnic cleansing in Tigray, forcing hundreds of thousands of people from their homes using threats, killings and sexual violence, according to a joint report by Human Rights Watch and [Amnesty International](#).

The rights groups accuse officials and paramilitaries from the neighbouring [Amhara region](#) of war crimes and crimes against humanity in western Tigray, in northern Ethiopia.

"Since November 2020, Amhara officials and security forces have engaged in a relentless campaign of ethnic cleansing to force Tigrayans in western Tigray from their homes," said Kenneth Roth, director of HRW.

comments (55)



Join the discussion

Post your comment

Associated Press

Wed 6 Apr 2022 06:15 BST



55

Condition with .com, comments, and no image

s://www.theguardian.com/world/2022/apr/02/israel-security-forces-kill-three-palestinians-in-west-

Israel

Israel security forces kill three Palestinians in West Bank

Israeli police say the men were armed and were 'killed in a shootout' after tensions rise in the past week

Israeli security forces have killed three Palestinian gunmen in the occupied West Bank, Israeli police said.

There was no immediate comment from Palestinian officials. The Israeli police said the men were armed and were "killed in a shootout," in the pre-dawn incident on Saturday.

"This is a terrorist cell that has been involved in terrorist activity against security forces recently, and was apparently on its way to another attack," the police statement said.

comments (55)



signed in as
Guardian User

Post your comment

Associated Press

Sat 2 Apr 2022 01.28 BST



55

Condition with .com, image, and no comments.

s://www.theguardian.com/world/2022/apr/05/russian-mercenaries-and-mali-army-accused-of-killing

Mali

Russian mercenaries and Mali army accused of killing 300 civilians

Human Rights Watch says deaths during anti-jihadist operation in Moura 'the worst atrocity in Mali in a decade'

Associated Press

Tue 5 Apr 2022 13:38 BST



A file photograph of a Malian soldier on patrol in eastern Mali. The army has long been accused of rights abuses during counter-insurgency operations. Photograph: Joerg Boethling/Alamy

Suspected Russian mercenaries participated in an operation with Mali's army in March in which about 300 civilian men were allegedly killed over five days, Human Rights Watch (HRW) says.

Witnesses and local community leaders said hundreds of men were rounded up and killed in small groups during the anti-jihadist operation on 23 March in the central town of Moura. The rural town of about 10,000 inhabitants is in the Mopti region, a hotspot of jihadist activity that has intensified and spread to neighbouring countries in the Sahel region.

comments (0)



signed in as
Guardian User

Join the discussion

Post your comment

Condition with .com, without image, and no comments.

s://www.theguardian.com/world/2022/mar/21/us-to-declare-myanmar-army-committed-genocide

Rohingya

US declares Myanmar army committed genocide against Rohingya

The US has declared Myanmar's mass killing of the Rohingya Muslim population to be a "genocide".

The secretary of state, Antony Blinken, made the announcement at the Holocaust Memorial Museum.

"The United States has concluded that genocide has been committed seven times. Today marks the eighth. I have determined that members of the Burmese military committed genocide and crimes against humanity," Blinken said. The US government uses the country's pre-1989 name, Burma.

Associated Press

Mon 21 Mar 2022 15.06 GMT



comments (0)



signed in as
Guardian User

Join the discussion

Post your comment

Condition with .biz, image, and comments.

www.theguardian.biz/world/2022/mar/04/dozens-of-worshippers-killed-in-pakistan-suicide-bomb-a

Pakistan

Dozens of worshippers killed in Pakistan suicide bomb attack

At least 56 people die in attack on Shia Muslim mosque in Peshawar during Friday prayers

Associated Press

Fri 4 Mar 2022 16.21 GMT



52



People survey the damage after a bomb blast inside a mosque during Friday prayers in Peshawar. Photograph: Fayaz Aziz/Reuters

A suicide bomber has struck inside a Shia Muslim mosque in Pakistan's north-western city of Peshawar during Friday prayers, killing at least 56 worshippers and wounding 194 people.

The Islamic State group claimed the attack and threatened more violence against Pakistan's Shia minority. Both IS and the Pakistani Taliban - a militant group separate from the Taliban in Afghanistan - have carried out similar attacks in the past in the area, located near the border with neighbouring Afghanistan.

comments (52)



signed in as
Guardian User

Post your comment

Condition with .biz, comments, but no image.

www.theguardian.biz/world/2022/apr/06/us-and-allies-to-hit-russia-with-new-sanctions-as-outrage

Ukraine

US and allies to hit Russia with new sanctions as outrage over civilian killings grows

US, G7 and EU to target Moscow with new measures as Ukraine says 4,400 incidents of alleged 'war crimes' being investigated

● [Russia-Ukraine war: latest updates](#)

The United States and its allies are preparing to impose new sanctions on Moscow over civilian killings in Ukraine as the west makes a fresh attempt to cripple Vladimir Putin's economy and war effort.

President Volodymyr Zelenskiy described the atrocities in his country as "war crimes" while Ukraine authorities said close to [more than 4,400 incidents were being investigated](#).

Associated Press

Wed 6 Apr 2022 05:37 BST



36

comments (36)



signed in as
Guardian User

Join the discussion

Post your comment

Condition with .biz, image, and no comments.

www.theguardian.biz/world/2022/mar/28/venezuelan-troops-colombia-rebels-joint-operations-hum

Colombia

Venezuelan troops operated alongside Colombian rebels, report claims

Human Rights Watch says Venezuelan soldiers conducted joint operations with ELN in violence-plagued Apure state

Associated Press

Mon 28 Mar 2022 16:57 BST



Members of the Bolivarian Armed Forces of Venezuela take part in military exercises on the Colombian border in 2019. Photograph: Johnny Parra/EPA

Venezuelan soldiers conducted joint operations with Colombian rebels in the state of Apure earlier this year, as violence increased along a remote and often lawless stretch of the Colombia-Venezuela border, according to a new report by Human Rights Watch.

The report published on Monday said that in January a truce ended between the National Liberation Army, or ELN, and another rebel organization known as the Joint Eastern Command, leading to clashes, abductions and murders of civilians that forced more than 3,300 people to flee their homes in the Venezuelan state of Apure. In the Colombian province of Arauca, more than 3,800 people were displaced.

comments (0)



signed in as
Guardian User

Join the discussion

Post your comment

Condition with .biz, no image, and no comments.

www.theguardian.biz/world/2021/aug/29/missile-drone-attack-south-yemen

Yemen

Missile and drone attack kills at least 30 in south Yemen

At least three explosions took place at al-Anad airbase, officials said

A missile and drone attack on a key military base in south Yemen has killed at least 30 troops, a Yemeni military spokesman said. It was one of the deadliest attacks in the country's civil war in recent years.

Mohammed al-Naqib, the spokesman for Yemen's southern forces, said the attack on Sunday on al-Anad airbase in the province of Lahj wounded at least 65. He said the casualty toll could rise since rescue teams were still clearing the site.

comments (0)



signed in as
Guardian User

Join the discussion

Post your comment

Associated Press

Sun 29 Aug 2021 18:49 BST

