

# **Personal, medium and source-dependent trust and their influence on judgment**

Bachelor thesis by Chris Kramer

Supervisors: Teun Lucassen, MSc. & Prof. Dr. Jan Maarten Schraagen

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## **Abstract**

Due to the introduction of the World Wide Web as an information source, where editors and reviewers no longer determine what is published or not, the end user of the information must assess its credibility. Credibility indicators such as sponsorship and author are frequently missing on websites and people often have inadequate skills to determine credibility without these. As trust is a mediating factor between information quality and use, it is needed to explain information use and credibility evaluations. In this thesis a new model of interpersonal trust and its influence on credibility judgments was proposed. In this model, the trust bias is divided in three layers, propensity to trust, trust in the medium and trust in the source. An online experiment was used to validate this model, using Internet as medium and Wikipedia as source. In the experiment, participants were asked to evaluate two Wikipedia articles and were asked to rate several questions, to determine their levels of trust. Credibility judgments highly correlated with the layers of trust, trust alone explained 25% of the total variance. This experiment supports the proposed model, which can provide a framework for further research on the influence of trust on credibility.

# **1. Introduction**

Since the introduction of the World Wide Web it has been increasingly easy to acquire information. The Internet is full of information, which is spread over more than one hundred million sites. Therefore, it is not surprising that the two most popular search engines are among the top five most popular sites (“Alexa Top 500,” 2011). Whereas in the past the credibility evaluation was performed by professionals, like reviewers for journals, today when retrieving information from the Internet it can be difficult for a user to perform this task him/herself.

Articles in credible peer reviewed journals have transferred to the online environment. Students regard the sponsorship of a website as one of the strongest indications of credibility, even more important than the author (Liu, 2003). However, credibility indicators such as source, sponsorship, author and currency are frequently not indicated on websites (Warnick, 2004). On sites such as Wikipedia everyone can edit or add any information at will. Furthermore, anyone can build a website and provide information on it. As it is often impossible to determine who presented specific information on the Internet, it is difficult to judge its credibility.

In this thesis, it is first discussed that trust is applicable to information and the difference between trustworthiness and credibility. Second, a literature overview about credibility evaluations on the internet is given. Thirdly, a new model is proposed on the bias of trust on perceived credibility. This model predicts the effects of three different kinds of trust on the credibility judgment of people. Then the three proposed kinds of trust are discussed: propensity to trust, trust in the medium and trust in the source. This will be followed by the hypotheses, meant to verify the effect of the bias and with that validate the model. Finally, the method to test the hypotheses is introduced and the results are presented and discussed.

## **1.1 Trust, Trustworthiness and Credibility**

A model for trust in information was presented by Kelton, Fleischmann and Wallace (2008). They discussed how the model of trust could be altered for use in research into trust in information. Although some researchers claim that trust is a process between two parties, people often relate socially to computer technologies including the social relation of trust

(Kelton *et al.*, 2008). Moreover, the concept of trust is needed to explain information use, because trust is a mediating factor between information quality and use. Therefore, they suggest that the concept of trust is both useful and appropriate in the discussion on information.

The appropriate level of trust in information research is the interpersonal level. Interpersonal trust is a relation between a trustor and a trustee, information although not being the same as a trustee, acts as such in this relation. This relation is an expectation towards information (Kelton *et al.*, 2008). In their study they discuss (1) the preconditions for trust; uncertainty, vulnerability and dependence, (2) the trustworthiness features; competence, positive intentions, ethics and predictability, (3) internal and external influences and (4) how trust develops. They translated those into a model of trust in information (Figure 1).

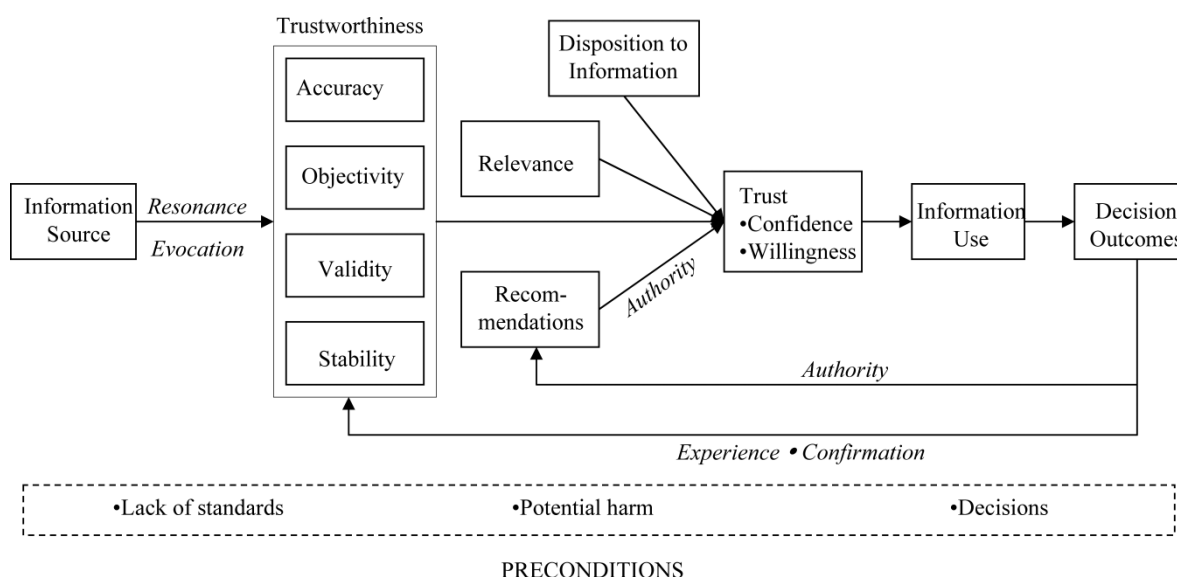


Figure 1 An integrated model of trust in information (Kelton *et al.*, 2008)

Although this model is a solid basis to predict the relation of trust on confidence in information and the use of it, many researchers do not agree with the terminology. In the model above (Figure 1) *trustworthiness* is defined by accuracy, objectivity, validity and stability. This concept that was described as *trustworthiness* by Kelton *et al.* (2008), is described by most researchers as *credibility*, of which *trustworthiness* is a component. *Credibility* is mostly defined by *trustworthiness* and expertise (accuracy), whereas *trustworthiness* is defined as well-intentioned, truthful and unbiased (e.g., Dutton & Sheppard, 2006; McKnight, Choudhury & Kacmar, 2002; Metzger & Flanagin, 2007; Tseng & Fogg, 1999). In the model *trustworthiness* has been replaced by *credibility*, and between the bias and trust another category has been added, namely *perceived credibility*. When someone reads an article, but is not going to use it, the precondition dependence or decision is

not met and therefore there is no need for trust. A person can make a *credibility* assessment, even if the preconditions are not met and therefore *perceived credibility* has been added.

## 1.2 Literature overview credibility evaluation

When people make an online credibility evaluation of an article one notices different credibility elements and interprets them. Elements that do not get noticed or not interpreted will not contribute to the credibility evaluation (Fogg, 2003). Unfortunately people seldom look for important credibility elements: (1) accuracy, (2) authority, (3) objectivity, (4) currency and (5) coverage (Metzger, 2007). Even when people specifically search for these attributes, it becomes clear that they are frequently absent from the websites. When this is the case, and the author and sponsor of the information cannot be determined, the quality of performance by the author is of importance for the evaluation of credibility (Warnick, 2004). Unfortunately people, in general, seem to be poor at evaluating the credibility of sites and their information. In a study by Grazioli and Jarvenpaa (2000), 82% of the participants did not recognise being on a fraudulent site and from that 82% three-quarter actually would buy a laptop from that site. Metzger (2007) suggests that people do not have adequate skills to evaluate information. She also believes that people have to be taught those skills in order to not judge the information purely with regard to the site it is presented on.

Models such as the 3S-model (Figure 2) by Lucassen and Schraagen (2011) try and explain how people rate the credibility of information. In their study they used Wikipedia as information source. They found that people evaluate the information in an article by looking at its semantic (e.g., completeness and neutrality) and surface (e.g., length and pictures) features. They also found that semantic and surface features are not the only determinants of trust; source experience is also a major determinant. If people have a good experience with a source of information, they will rate information from that source better than if they had no such experience. Other research corroborates that experience is a primary factor in the shaping of trust with regard to the Internet and to specific websites (Dutton & Sheppard, 2006; Fogg & Tseng, 1999; Pichard, Gannon-Leary & Coventry, 2010; Tseng & Fogg, 1999). Research indicates that although people with domain expertise use their knowledge while judging the credibility of an article, even those people use source experience in 25% of their comments regarding the credibility of the specific article (Lucassen & Schraagen, 2011). People with no domain expertise even resorted to source experience in 34% of their comments.

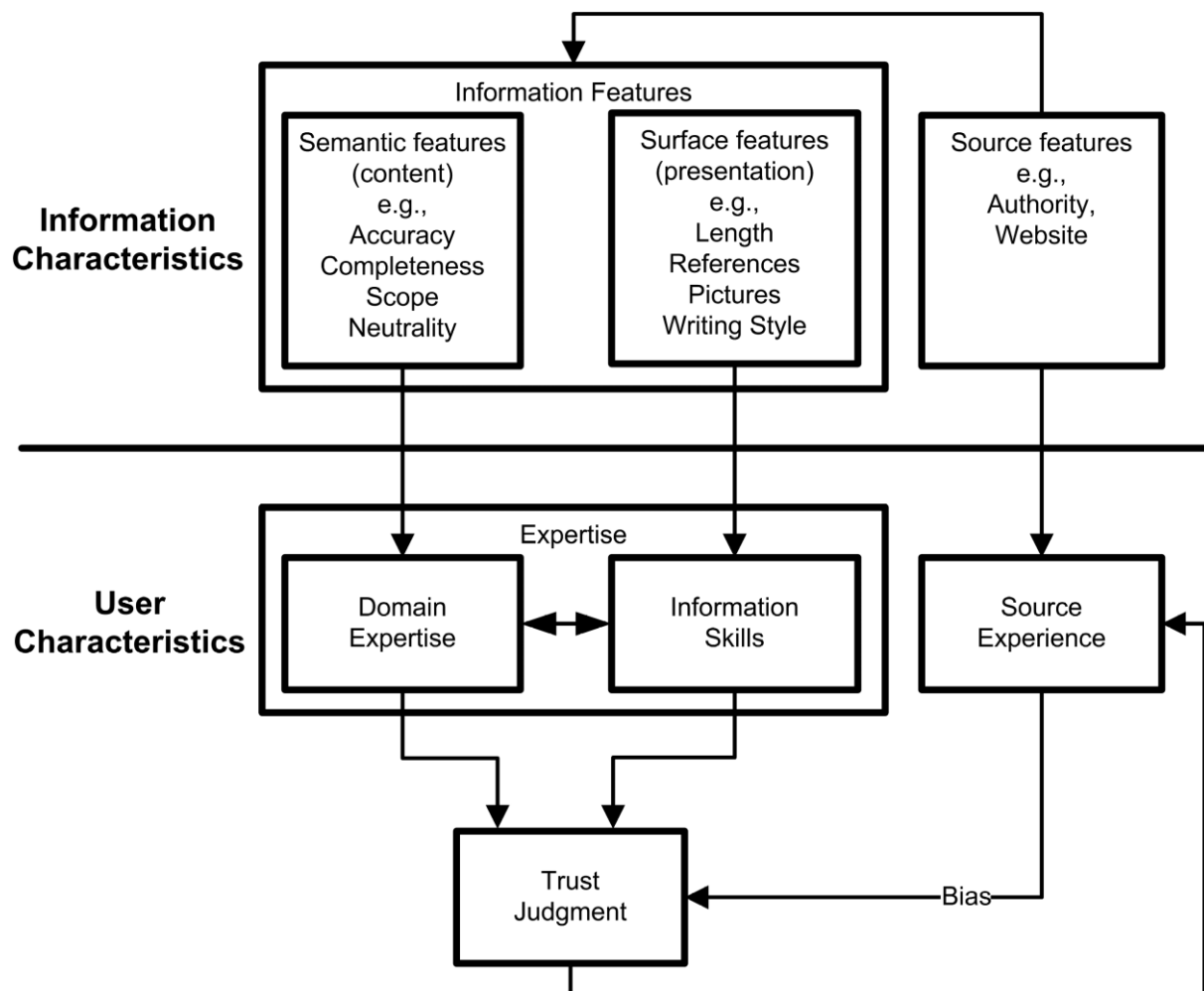


Figure 2 3S-model of information trust (Lucassen & Schraagen, 2011)

Sources such as news sites get the highest credibility rating, while personal websites are rated lowest in terms of credibility (Metzger & Flanagin, 2007). Corroboration of this idea can be found in a study in which the same article was presented on three different websites; Encyclopedia Britannica, Wikipedia and Encyclopedia of Earth (Kubiszewski, Noordewier & Constanza, 2011). The results of this study showed that the same article was rated differently depending on which site it was hosted on. For web shops trust in the vendor strongly determines the perceived credibility of his site (Gefen, 2000; McKnight, Choudhury & Kacmar, 2002; Gefen, Karahanna & Straub, 2003; Jarvenpaa, Tractinsky & Vitale, 2000). This finding is strengthened by the fact that people do not often verify information by accessing other sites. Instead people often rate credibility without checking whether the presented information is correct (Metzger & Flanagin, 2007). When people are unfamiliar with the source of a site, the strongest factor contributing to the corresponding credibility evaluation is the design of the site (Fogg, Soohoo, Danielson, Marable, Stanford & Tauber, 2003; Stanford, Tauber, Fogg & Marable, 2002).

### 1.3 Proposed Model

The proposed model (Figure 3) incorporates the source-dependent and personal trust and their influence on credibility judgment. It is based on the same bias as presented in the model of Kelton *et al.* (2008). The bias is divided in three categories: (1) propensity to trust (disposition to information), (2) trust in the medium (experience, confirmation, recommendations and relevance) and (3) trust in the source (experience, confirmation, recommendations and relevance).

In the proposed model the article is central, surrounded with different layers of bias. The first layer is the propensity to trust, the second the medium and the third is the source of information. The layers closer to the centre will partly override the more outer layers. When someone has a strong opinion about the source, his/her propensity to trust and his/her trust in the medium, even when equally strong and opposite, will influence the final judgment to a lesser extent.

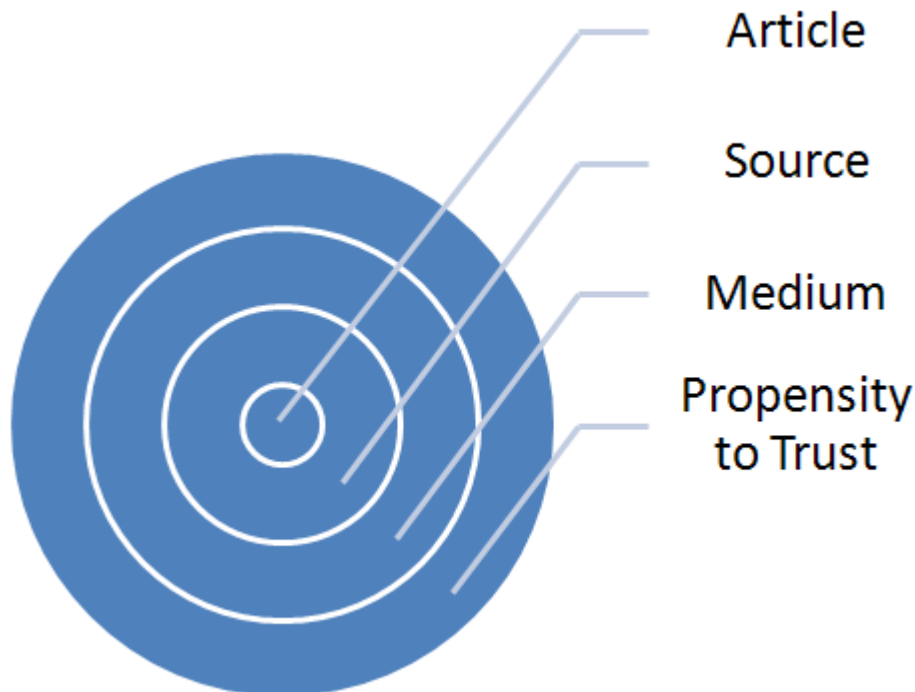


Figure 3 Proposed model of information judgment, based on bias

## **1.4 Propensity to trust**

The initial influence on the judgment of any information is the disposition of that specific person regarding that information. This influence is especially important when one has little or no experience with the source of the article, and limited knowledge about its subject. (Kelton *et al.*, 2008) Studies from McKnight and Kacmar (2006), Ba and Pavlou (2002) and Pavlou and Gefen (2004) showed that the first impression and the personal disposition strongly determines perceived credibility. In the study from McKnight and Kacmar (2006) no influence was found from propensity to trust on credibility evaluations, but this might be because legal information was used, which is associated more with suspicion than with trust. It is important to note that McKnight and Kacmar (2006) measured propensity to trust as faith in humanity in their study; these different names refer to the same construct.

## **1.5 Trust in the medium and trust in the source**

The second and third influences on the judgment of information are trust one has in the medium, such as the Internet, and in the source of the information, such as Wikipedia. Both trust in the medium and trust in the source come from (1) personal experience, (2) confirmation, (3) recommendations and (4) relevance. The first two are based on previous use of the medium and the source. The recommendations are based on the evaluations of others regarding the information. Relevance is important as you only have trust in a certain context, such as “I expect Wikipedia to provide me with good information” (Kelton *et al.*, 2008).

Previous use of the Internet (medium) is a good predictor of trust in its experience (Fogg & Tseng, 1999; Dutton & Shepherd, 2006). That recommendations of reputed others lead to a higher credibility evaluation, has already been proven in a study about consumer trust in Internet stores (Jarvenpaa & Tractinsky, 1999). Metzger, Flanagin and Medders, (2010) stress that users do not individually determine credibility of information, but that they determine credibility in a social environment with the recommendations of others.

## **1.6 Hypotheses**

The hypotheses aim to validate the three proposed biases and with that the proposed model. In this study participants were asked to rate the credibility of two Wikipedia articles; this rating describes the article credibility judgment. They were also asked several questions



about their trust in Wikipedia (source), the Internet (medium) and their propensity to trust. According to the proposed model the first three hypotheses are:

**H1:** The propensity to trust positively influences the judgment of Wikipedia articles.

**H2:** Trust in and experience with the Internet positively influences the judgment of Wikipedia articles.

**H3:** Trust in and experience with Wikipedia positively influences the judgment of Wikipedia articles.

The inner layers will have a stronger influence on credibility judgments than the outer layers. Trust in Wikipedia is more specific and relevant to the judgment of Wikipedia articles, than the propensity to trust and is therefore expected to have a higher influence.

**H4:** The strongest predictor will be the most inner circle, trust in Wikipedia, followed by the second circle, trust in the Internet, and the weakest predictor will be the outer circle, propensity to trust.

As discussed, the influence of trust is stronger when one has little or no knowledge about the subject. When an expert reviews an article, he/se can more easily determine the accuracy of the article and is expected to resort less to his bias based on trust. It is important to note that familiarity is only expected to reduce the effects of the bias, not remove it. This leads to the fourth hypothesis:

**H5:** Familiarity negatively effects the influence of the proposed biases.

The last hypothesis is based on the strength of the bias. When even weak trust can cause a positive effect, it might be possible that when all three kinds of trust are strong and in the same direction, one does no longer look at the article. It might be possible when someone has a lot of trust on all three levels; he/she no longer feels the need to do a credibility assessment.

**H6:** When all three biases rate extremely high or low, one will not take semantic and surface features into consideration when judging an article.

## 2. Method

### 2.1 Participants

All 152 participants were recruited using the Internet; recruitment took place through invitation at several gaming forums, general forums, Facebook and through an email sent to university psychology students. From the initial 152 participants 3 were excluded due to answering all the questions the same. The average age of the participants was 25,72 (SD=10,12) and they lived in various countries around the world (Table 1). All participants were proficient in English. The questionnaire was protected by both IP-address registration and by placing a cookie on the participant's computer, to ensure that every participant could only fill in the questionnaire once.

Table 1 Countries of the participants

Country	Number	Percent
The Netherlands	45	30,2%
The United States of America	32	21,5%
United Kingdom	18	12,1%
Germany	8	5.4%
Canada	6	4.0%
France	5	3.4%
Australia	4	2.7%
Norway	4	2.7%
Portugal	4	2.7%
Denmark	3	2.0%
Finland	2	1.3%
Sweden	2	1.3%
Argentina	1	0.7%
Belgium	1	0.7%
Brazil	1	0.7%
China	1	0.7%
Colombia	1	0.7%
Croatia	1	0.7%
Czech Republic	1	0.7%
Estonia	1	0.7%
Italy	1	0.7%
Japan	1	0.7%
Latvia	1	0.7%
Poland	1	0.7%
Romania	1	0.7%
Russia	1	0.7%
Spain	1	0.7%
Vietnam	1	0.7%

## **2.2 Task and Procedure**

The experiment was conducted through an online questionnaire. On the first page of the questionnaire the participants were informed that they would have to evaluate two Wikipedia articles and answer several questions about trust and Internet use. The Wikipedia articles were off-line versions from the real English Wikipedia and looked exactly the same as the online Wikipedia pages, except that any cues of quality had been removed (such as dead links, bronze stars and info boxes) and that links were inactive (as every article was a full-page screenshot of the actual article). Due to the nature of an online questionnaire participants could visit other websites, including the original articles on Wikipedia. Only very few participants indicated that they looked up the real Wikipedia articles, but this and checking the references of the articles is a possible strategy to evaluate their credibility. After the instructions on the first page, participants were asked to provide demographic information, such as gender, age and country.

After the demographic information was completed, the participants were presented with the two Wikipedia articles separately and were asked to rate their credibility and their familiarity with the subject. They were also asked to elaborate on their credibility rating. Participants were notified that they would not be able to go back, so they could not view both articles at the same time or change their answers at a later stage in the questionnaire.

After reading and rating the articles participants were asked to rate, (1) their use and experience with Wikipedia and the Internet, (2) their propensity to trust and (3) trust in Wikipedia and the Internet. The order of these questions was chosen to minimise biasing effects. As questions later in the questionnaire tend to be answered faster (Galesic & Bosnjak, 2009), questions that require more thought were placed at the beginning of the questionnaire. For questions about trust the first thought is often best. Therefore, questions about trust were placed towards the end of the questionnaire.

## **2.3 Independent variables**

### *2.3.1 Article quality*

The article quality used was based on the ratings of the Wikipedia Editorial Team. From their seven different quality classes, the highest (featured article) quality class and the second lowest (start article) quality class were chosen. It was decided not to use the lowest

class (stub) as that class contains mainly single sentence articles, which would not have been of any use to this study. For this study it was not necessary *per se* to use the highest and lowest possible quality articles on Wikipedia; it was merely important that there was an observable difference in quality between the two articles presented. The choice of article to be used in this study was mainly based on length. Many of the start-articles contain just a few sentences and many of the featured-articles are so long it would take over half an hour for the participants to read them. Articles of decent size were chosen (word count below 2000 for high quality articles and above 300 for low quality articles) in order to prevent the length of the article becoming the main factor in the credibility evaluation. As length is a surface features participants could use, it was not entirely eliminated.

Each participant received two articles about a random topic: food (Andouillette and Thomcord), historical persons (Princess Amelia of Great Britain and Wihtred of Kent) or animals (the Bobbit worm and the Australian Green Tree Frog). The former of every two articles is classified by the Wikipedia Editorial Team as being of higher quality than the latter. The order in which the articles were presented was randomized, which led to six different questionnaires.

### *2.3.2 Propensity to trust*

Propensity to trust was measured by using the eight questions from the NEO-PI-R test on trust (Costa & McCrea, 1992)(Appendix 1). Although the test was not meant to measure the propensity to trust alone, the other questions bear no relevance to this study and were excluded for that reason (e.g. neuroticism, assertiveness, modesty). Apart from that an online questionnaire needs to be as short as possible; the longer the questionnaire, the fewer people will start and complete it (Galesic & Bosnjak, 2009).

### *2.3.3 Trust in Internet*

Trust in Internet or perceived credibility was assessed by questions about Internet usage, Net confidence and perceived Net risk using a 7-points Likert scale (Appendix 1). Trust in Internet can be predicted by use and experience (Fogg & Tseng, 1999; Dutton & Shepherd, 2006) as trust plays a mediating role between information quality and usage (Pichard, Gannon-Leary & Coventry, 2010). Trust in Internet can also be predicted by Net

confidence and perceived Net risk and those questions were validated by Dutton and Shepherd (2006).

#### *2.3.4 Trust in Wikipedia*

As for trust in Internet, trust in Wikipedia was assessed by questions about Wikipedia usage, confidence in Wikipedia and perceived risk in Wikipedia using a 7-point Likert scale (Appendix 1). Although there is no research indicating the predictive value of those questions on Wikipedia trust, the same questions as for Internet-trust were used. Additional information about the trust of participants in Wikipedia can be gained from their explanations for their credibility ratings (Lucassen & Schraagen, 2011).

#### *2.3.5 Familiarity*

To check familiarity, the participants were asked to rate their familiarity with the topic using a 7-point Likert scale after reading each article (Appendix 1).

### **2.4 Dependent variables**

#### *2.4.1 Credibility ratings*

The participants were asked to rate the credibility of an article using a 7-point Likert scale after reading (Appendix 1). By comparing ratings of high-quality versus low-quality articles, it could be determined to what extent the participants used the same methods of rating as the Wikipedia Editorial Team, and how much their biases had influenced their given ratings.

#### *2.4.2 Motivations for the credibility ratings*

The coding scheme used by Lucassen and Schraagen (2010) was applied to analyse the motivations. The rationale for this was that open questions often reveal the most useful information in a questionnaire (Appendix 1).

## **2.5 Data analyses**

In this study, Likert-scales were used, which is an ordinal level of measurement, but without equal intervals. Therefore non-parametric analyses should be used (Jamieson, 2004). In this study the Mann–Whitney U-test, and regression analyses were used.

### 3. Results

#### 3.1 Credibility ratings

The participants that scored higher on the propensity to trust scale, had significantly more trust in the Wikipedia articles (median = 10) than those who did not (median = 9), mean rank high trust = 81.08, low trust = 69.47,  $U = 2337.50$ ,  $Z = -1.659$ ,  $p = 0.049$  (1-tailed), supporting H1. For Trust in Internet, the high trust group had a median of 10 and low trust had a median of 9, mean rank high trust = 87.65, low trust = 62.85,  $U = 1850.50$ ,  $Z = -3.546$ ,  $p = 0.000$ , supporting H2. For trust in Wikipedia the high trust group had a median of 10 and low trust had a median of 8, mean rank high trust = 93.35, low trust = 54.29,  $U = 1315.00$ ,  $Z = -5.577$ ,  $p = 0.000$ , supporting H3.

When looking at the separate correlation of all three layers of trust (Table 2), Trust in Wikipedia has the highest correlation with trust in the articles,  $r = 0.447$ ,  $p = 0.000$ . This is followed by trust in the Internet, which also correlates significant with trust in the articles,  $r = 0.368$ ,  $p = 0.000$ . As last the propensity to trust, which did not correlate significantly with trust in the articles,  $r = 0.157$ ,  $p = 0.056$ , this increasingly weaker correlation throughout the layers is supporting H4. All three levels of trust together explain 23.7% of the total variance of the credibility ratings,  $p = 0.000$ . Separate correlations were used as all three layers of trust correlate with each other (Table 3).

Table 2 Regression analyse

	B	$\beta$	t	Significance
Propensity to trust	0.578	0.157	1.924	0.056
Trust in Wikipedia	1.196	0.368	4.797	0.000
Trust in the internet	1.000	0.447	6.064	0.000

Tabel 3 Correlation among the layers of trust

	Propensity to trust	Trust in Wikipedia
Trust in Wikipedia	$r = 0.348$ , $p = 0.000$	
Trust in the internet	$r = 0.207$ , $p = 0.011$	$r = 0.438$ , $p = 0.000$

When using only the participants with the highest and lowest trust ratings, the difference between high and low quality articles was still significant, as established by a Wilcoxon Signed Ranks Test,  $Z = -2.765$ ,  $p = 0.003$ , not supporting H6. There was no influence on the order of the articles,  $t = 0.038$ ,  $p = 0.970$ , and the participants were able to recognise the difference between the high and low quality articles, as established by a Wilcoxon Signed Ranks Test,  $Z = -6.441$ ,  $p = 0.000$ .

No effect of familiarity was found on the influence of the three layers of trust. High familiarity did however significantly lower the trust in the articles, median high familiarity = 8, median low familiarity = 10, mean rank high familiarity = 57.23, low familiarity = 79.48,  $U = 1252.00$ ,  $Z = -2.552$ ,  $p = 0.011$ .

### 3.2 Motivations for the credibility ratings

Of the 149 participants, 131 (88%) filled in the motivation for the credibility rating. As there were three places to leave comments and some participants filled in all three, this resulted in 252 comments. These comments were categorised in, (1) Semantic features (*It appears to reflect the history at the time. The name of Amelia was common in the house of Orange, after Amalia van Solms, the wife of Stadtholder Frederik Hendrik of Orange-Nassau*), (2) Surface features (*Solid amounts of material on the subject, proper references both to literature and individual factual statements made about the subject*), (3) Source features (*I don't really trust Wikipedia because someone from the public can make changes to the topic or article*), (4) Verifying on other sites (*good intel are those which you can check / trust in different database*) and (5) Other features (everything not included in the above, e.g., *There's no need to lie in such a article*) (Lucassen & Schraagen, 2011). Two experimenters rated the comments; one rated all comments and the other rated only the first comment made by the participants. Cohen's  $\kappa$  was calculated for the 124 comments made on the first article, a  $\kappa$  of 0,906 indicates a high agreement between the raters.

Table 4 and Figure 4 give an overview of the features used in the credibility evaluation. As is seen in Figure 4, high familiarity varies from the other three groups. Participants that were familiar with the topics used three times as many semantic features and only 75% of the amount of surface features used by the other groups. This result does not come as a surprise, as experts use their knowledge about the subject more to evaluate credibility, compared to novices. Novices who are less capable of evaluating semantic features will resort to surface features to a larger extent than do experts (Lucassen & Schraagen, 2011).



Table 4 Features used in credibility judgments

	Low Familiarity	High Familiarity	Low Trust	High Trust
Semantic features	7,4% (n=15)	29,2% (n=14)	12,2% (n=15)	10,9% (n=14)
Source features	13,7% (n=28)	14,6% (n=7)	13,8% (n=17)	14,0% (n=18)
Surface features	63,2% (n=129)	45,8% (n=22)	61,0% (n=75)	58,9% (n=76)
Verify other sites	2,9% (n=6)	2,1% (n=1)	4,1% (n=5)	1,6% (n=2)
Other features	12,7% (n=26)	8,3% (n=4)	8,9% (n=11)	14,7% (n=19)
Total	100% (n=204)	100% (n=48)	100% (n=123)	100% (n=129)

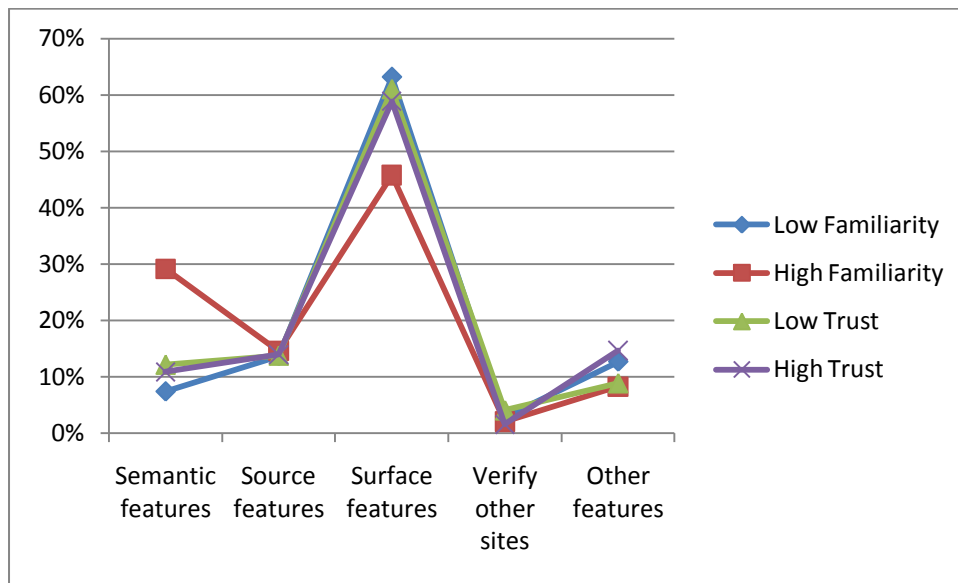


Figure 4 Percentages of feature categories used by participants

## 4. Discussion

The correlation between the participants' credibility judgment and their personal and source related trust supports the bias predicted by the trust-model. All three predicted trust biases positively influences the credibility evaluation, both alone and all three together.; all three together explained almost as much as 25% of the total variance.

The first explanation for this is that assumptions and stereotypes, such as "*I don't really trust it, because someone from the public can make changes to the article*", create a bias when forming a first impression of an article (Tseng & Fogg, 1999). A first impression is often persistent, as people try to conform their experiences with their current attitude towards it (McKnight & Kacmar, 2006). All three biases have a direct influence on the first impression, although the effect of the propensity to trust diminishes with strength of the inner layers of trust (trust in the source and Internet).

A second explanation is that people lack the correct skills and motivation to make a thorough evaluation (Metzger, 2007). They often use methods that are easily accessible to them, such as their own trust in the source "*I don't trust everything on the internet, I also know nothing about the article/subject itself*". The familiarity of the chosen topics, with a mean of 1.6 out of a 7-point scale, is remarkably low. When people have no knowledge about the topic they have to fully rely on source and surface features (Lucassen & Schraagen, 2011).

While interpreting these results it should be noted that participants were already aware that they would have to make a credibility evaluation after reading the articles before they read them. Therefore, they were actively making such an evaluation. People are not always actively busy judging the credibility of information they read. As a consequence the bias created by this study may have negatively influenced the observed bias.

As expected by the model, the source layer has the highest predictive value. This was shown both by the variance and the higher correlation this layer had compared to the others. This can be explained by the fact that the layers become more specific towards the centre. Whilst propensity to trust has a very broad focus, trust in Wikipedia focuses just on Wikipedia. It is therefore not surprising that biases that are more specific are more relevant and therefore have a higher impact. Although the strength of the layers is also of importance. When someone has hardly any experience with Wikipedia, it may be assumed, that the more general layers of trust are more important when evaluating a Wikipedia article.

In this study only 20% of all participants rated their trust in the Internet below 4 on a 7-point scale. And nobody had a strong distrust of the Internet. Perhaps not surprisingly, as all participants were recruited online and are therefore expected to have some degree of trust in the Internet through usage alone. Non-users are generally more distrustful of the internet (Dalton & Sheppard, 2006). This model should be used with caution when looking at novel sources and mediums, even though there is no reason to expect that low levels of trust will work differently as predicted by this model.

In this study familiarity did not have a significant influence on the effect of the bias. Only a trend was seen at the lower quality articles. The mean difference in perceived credibility between high and low trust of participants was halved in the high compared to the low familiarity. The familiarity did however significantly lower the trust in articles across all groups. Which is the opposite finding of what was found by Lucassen and Schraagen (2011), in their study experts rated the Wikipedia articles as more credible.

The hypothesised influence of familiarity was not seen in this study. This may have been caused due to the fact that most people were unfamiliar with the subjects. Only 20% of all participants rated familiarity above 2.5 (mean of both articles) on a 7 point-scale. Therefore, those participants who were classified as having a high familiarity were still quite unfamiliar with the subject.

The effect predicted by the sixth hypothesis, was not found in this study. The highest and lowest trusting participants still rated the articles the same as everyone else. This might have been caused due to actually asking people to perform a credibility evaluation, while it was hypothesised that people would not make such an evaluation when trust was really high or low. Due to this fact participants were forced to think about the article, which may have triggered a cognitive reaction resulting in identical judgments people without as much trust. It is plausible that people might have the hypothesised "fast" judgment under normal circumstances.

#### **4.1 Limitations**

In this study an online questionnaire was used. Although this method is very useful to get a high number of participants from all over the world, the accountability is low. There is no control as to when the questionnaire is filled in nor to whether the participants gave the questionnaire their full attention (participants may have been doing other things at the same time) Also, there was no way to prevent participants to look up the articles at Wikipedia and

acquire the quality rating made by the Wikipedia editorial team. If participants have used such a strategy to make their credibility evaluation, it should be considered as a good thing, as it shows motivation to verify the given information.

As noted in the discussion, the familiarity with the information was really low. This was very useful for this study as familiarity is hypothesised to reduce the influence of the bias. However, this is not very realistic. When people search for information, they often have some prior knowledge about it. It has little value to look for information you know nothing about, because you would not understand it, nor would you look for information you already know. In most situations people will look for information that has connections to their current knowledge.

For the validation of the proposed model, Wikipedia was used. Wikipedia is a very well-known source of information and was therefore an excellent option to validate the model. On the other hand, Wikipedia is not a very representative information source, due to its open editing and encyclopaedic nature. Other sources of information should be tested, both online and offline, to validate the proposed model.

## **4.2 Future research**

More research to validate the proposed model is needed, especially in a broader context, as it is possible that other sources of information will provide a different view on credibility judgment. The open editing nature of Wikipedia might encourage people to verify the information more than equally trusted newspapers would.

Also, familiarity should be controlled, for instance by asking participants to rate information they actually searched for themselves. (as this would better resemble real information searching). Participants would be asked to rate the credibility of information they searched for earlier. By not presenting it again while asking them to rate it, they can only use credibility elements they used during the search. This will prevent an increased focus on such elements when reading the article. If someone performed actions to verify the found information, he/she will remember this even when asked after a few days. While somebody will not be able to say anything useful about the references when he/she did not check them at the time the information was retrieved.

### **4.3 Conclusion**

This study has explored the influence of trust on credibility evaluation of information online. A new model has been proposed to explain the influence of three different levels of trust and their effect on each other and the credibility evaluation of information. In this study there was a focus on the source related trust, using a well-known source. More research will be needed to validate this model in a broader context. The model provides a framework to understand how people evaluate information and it may help to predict how and where to provide information. The model also provides a framework for further research on the influence of trust on credibility.

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## Appendix:

### Appendix 1, Questionnaire:

- **Demographics**

*What is your gender?*

*What is your age?*

*In which country do you live?*

- **Article 1**

*How much trust do you have in this article? (1 = Very little, 7 = Very much)*

*Can you explain your judgment?*

*How much did you already know about the topic of this article? (1 = Very little, 7 = Very much)*

- **Article 2**

*How much trust do you have in this article? (1 = Very little, 7 = Very much)*

*Can you explain your judgment?*

*How much did you already know about the topic of this article? (1 = Very little, 7 = Very much)*

- **Answer these questions truthfully and without thinking about them for too long. (1 = Never, 7 = Frequently)**

*How often would you say you use online banking opposed to going into the bank?*

*How often do you engage in online shopping?*

*When you are looking for information, how often would you use the internet as opposed to offline sources?*

*When you are looking for information, how often would you use Wikipedia as opposed to other sources?*

- **Answer these questions truthfully and without thinking about them for too long. (1 = Fully disagree, 5 = Fully agree)**

*Regarding the intentions of others I am rather cynical and skeptical.*

*I believe that you will be used by most people, if you allow them to.*

*I believe that most people inherently have good intentions.*

*I believe that most people, with whom I have dealings with, are honest and trustworthy.*

*I become distrustful when someone does me a favor.*

*My first reaction is to trust people.*

*I tend to assume the best of others.*

*I have a good deal of trust in human nature*

- **Answer these questions truthfully and without thinking about them for too long. (1 = Very little, 7 = Very much)**

*What do you think is the credibility of information on the Internet?*

*What do you think is the credibility of information on Wikipedia?*

*How much do you trust the institutes and people “running the Internet”?*

*How much do you trust the institutes and people “running Wikipedia”?*

*How much confidence do you have in the people with whom you interact through the Internet?*

*How much confidence do you have in the people who add information to Wikipedia?*

*If you are in need of information, how confident are you that you can find it on the internet?*

*If you are in need of information, how confident are you that you can find it on Wikipedia?*

*How well do you think your privacy is protected on the internet?*

*How large do you think the risk of getting inaccurate information on Wikipedia is?*

- **If you have any remarks on this questionnaire, please leave them here.**