DIMENSIONS OF CREDIBILITY OF WEBSITES - A LITERATURE REVIEW

Oana C. Ţugulea

University "Alexandru Ioan Cuza" - Iaşi

22nd Carol I Blvd., Iaşi, Romania

Abstract

The concept of credibility has been studied since Ancient Times. Nowadays, credibility receives a particular importance for researchers and practitioners as it influences the consumers' behaviour. The concept is analyzed mostly as a construct with various dimensions. This paper focuses on the Internet credibility's construct and its dimensions. The purpose of this research is to study the Internet credibility in general and websites' credibility in particular. The objectives of this paper are: (1) to identify past approaches on Internet credibility; (2) to identify dimensions of websites' credibility; (3) to identify the method that researchers use in order to separate the construct's dimensions. The research method is an exploratory documentary study on the construct of credibility.

Key words: *credibility, literature review, factor analysis, construct, multidimensionality*

INTRODUCTION

The long history of the credibility concept had begun within the psychological literature, in the context of general social influence phenomena, especially in the persuasion phenomena (Ceobanu, C. & Anton, O. 2008). As this concept migrated to the field of marketing and commercial messages persuasion (Ceobanu, C. & Anton, O. 2008), the new concept of „credible information" was first defined by de Fogg & Tseng (1999) as the information that can be trusted, that is the information is believed to be secure.

Information technology and credibility

Tseng & Fogg (1999) offer an inventory of situations of importance of credibility in human-computer interactions: (1) *computers operate as knowledge deposits* of static or dynamic information; (2) *computers train users*; (3) *computers report results*; (4) *computers report performances*; (5) *computers report on their own status*; (6) *computers function simultaneously*; (6) *computers create virtual environments*; credibility is important in developing useful environments.

The dramatic development of technologies is surprised by Fogg, B. J. (2003) in a representative figure that represents the major waves of the computer systems.

The functional triad explained by Fogg, B. J. (2003), reveals that technology can change attitudes and behaviours; credible instruments, credible media and credible social actors result into increasing the power of persuasion.

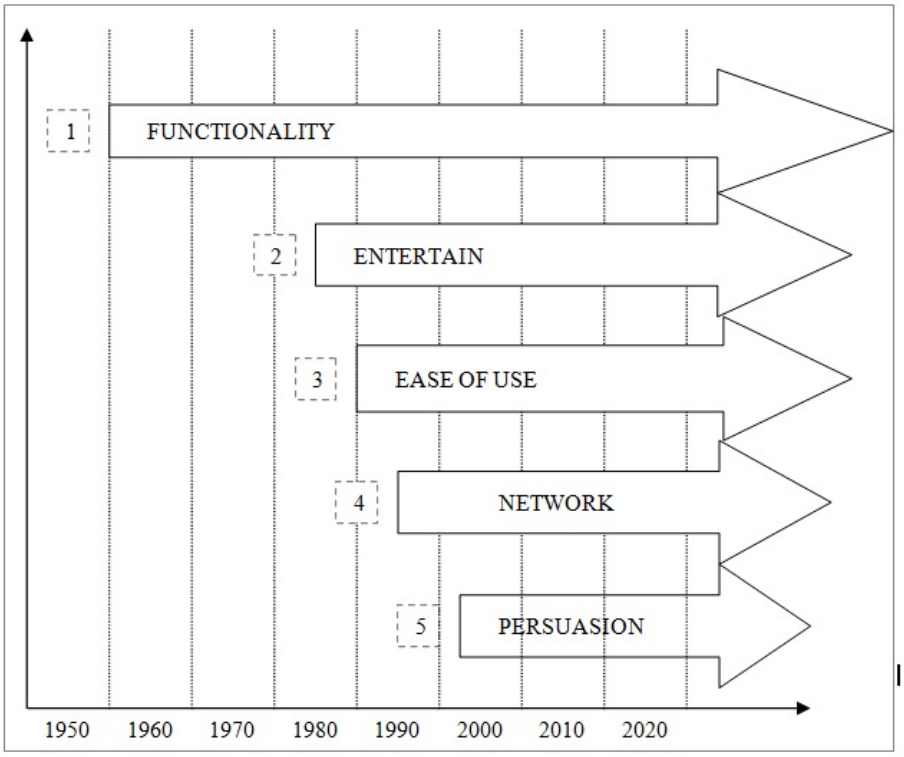


Figure 1: Major waves in computer systems

(Source: Fogg, B. J. 2003 'Motivating, Influencing, and Persuading Users' in Jacko, J.A., Sears, A. 2003, The Human – Computer Interaction Handbook, Lawrence Erlbaum Associated, New Jersey, p. 360)

1. OBJECTIVE 1 – IDENTIFYING PAST APPROACHES IN INTERNET CREDIBILITY

A part of the researches that approach the concept of credibility of Internet sources use the direct interrogation of participants on the manner they perceive the Web as a source of credible information, while others focus on comparing users' perceptions on Web credibility information to information from other media sources (Ciobanu, O. 2011). For example, studies revealed that newspapers are mentioned as the first category of credible sources, while Internet, television, magazines and radio stations are perceived as less credible (Flanagin & Metzger 2000, Savolainen 2007). Newspapers, television and Internet are frequently used as sources of information orientation; the credibility of these types of media varies upon the subject to be discussed. In particular, the Internet has eroded the belief in establishing an authority, as it is the case of newspapers Savolainen, R. (2007).

For most information receptors it is difficult to evaluate the cognitive authority and media credibility, between different types of media; these evaluations are very sensitive to the analyzed situation (Savolainen 2007).

The "2-sided advertisement" (that supposes to include negative aspects of the promoted product among the positive aspects) helps to increase the degree of credibility of the overall information about the product, comparing to the "1-sided advertisement" (Bohner, G. et. al 2003). Communication a moderate quantity of negative information with positive information has an effect of increased credibility of the message (Pratt, C. B. 2004).

A small percentage of consumers consider blogs and forums to be trusted (Wasserman & Todd, 2006) as these types of information delivery eroded the belief in absolute cognitive authorities on specific domains. Most users consider that blogs are credible within five components: *trustworthiness, accuracy, objectivity, belief and completeness*; the blog information should be *complete and correct* (Chun Ho, K. L. 2006). Blogs are credible through their information. Concerning the credibility of e-

mail messages, five factors have been identified: *accuracy* (the dominant factor), *completeness, sociability, clarity, opportunity* and *technical complexity* (Garrison, B. 2003). From all the types of Websites, professional Websites of certain fields of activity are perceived to be the most credible (Metzger, M. J. & Hall, E., 2005).

According to Jain, S. P. & Posavac, S., S. (2001), the element „price" of the marketing mix appears to be relevant in credibility studies. If the credibility of a source is considered to be reduced, then the price is utilized in order to approximate the product's performances; if the source is considered to be credible, then product's attributes are considered in order to approximate the product's performances. The price is also especially important in the online environment because comparisons based on price between competitors can be easily done. Trifts, V. & Häubl, G. (2003) research results indicate that a manner to shape or grow consumers' trust is by facilitating the direct access to uncensored information on competitors' products and prices; this facilitation could have a powerful positive impact on long term preferences of the online store buyers. Results also indicate that the positive effect of this facilitation is mediated by the perceived honest seller.

The audience searches for nonverbal clues to support the verbal message in order to evaluate the credibility of a message. 10% of the importance of a message is derived from verbal communication. Non-verbal communication can replace words (Payne, J. 2001). The most important nonverbal communication elements are: posture and attitude, exterior aspect, body movement, gestures, visual contact, facial expressions, paralinguistic clues (Payne, J. 2001). The Internet nonverbal communication elements may be: Website pages design, animations, honesty of information delivered in time. Amado, G. & Guittet, A. (2007) have found five favourable factors of communication: (1) coherence – internal coherence of the message and nonverbal and verbal coherence of the entire message; (2) legitimacy – considers the status of the person that delivers the message; (3) credibility; (4) attractiveness; (4) admissibility.

Clark & Slotta (2000) made a research upon the influence of the manner that static images with written text included on the Web influence the manner that high school students interpret the source authority. As a result, boys tend to evaluate information as to be more important when this includes an image, while girls consider the text information to be more important.

Fogg, B. J. (2003b) conducted an ample study on the Web credibility elements. As a result, the researcher identified a new theory: „*Prominence-Interpretation Theory*". According to this theory, when a user evaluates the online credibility, two phenomena take place: (1) the user observes something (prominence) and (2) the user interprets/makes judgement upon that something (interpretation). If one of these phenomena does not take place, credibility is not evaluated. Prominence is defined by the user as the probability that a certain element of a site to be remarked or perceived and it is influenced by at least five factors: (1) user's involvement; (2) type of information; (3) user's task; (4) user's expertise; (5) individual differences. Interpretation is defined as the opinion that a person has about an observed element and it is influenced by three factors: (1) user's assumption; (2)user's skills, knowledge; (3) the context.

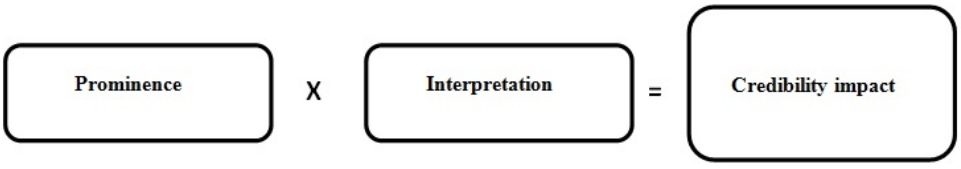


Figure 2: Core componens in Prominence-Interpretation Theory

(Source: Fogg, B. J. 2003b, ‚Prominence-Interpretation Theory: Explaining How People Assess Credibility Online', CHI, Ft. Lauderdale Florida, USA, ACM 1-58113-630-7/03/0004, p. 723)

An important part of the message is the introduction, especially when the message sender is not well known by the audience; the introduction drags the audience attention towards the message if it is properly built (Ceobanu, C. & Anton, O. 2008).

In most studies on credibility, researchers revealed the multidimensional face of this construct. The specific aspect is that they found various dimensions within various types of researches. There have been identified dimensions such as: *trust, expertise, dynamism, competence* or *goodwill* (Rieh, S. Y. & Danielson, D. R., 2007).

2. OBJECTIVE 2 – IDENTIFYING DIMENSIONS OF WEBSITES' CREDIBILITY

The connection between credibility and persuasion in the online environment is very important. Earning credibility for a Website is about creating the possibility to change attitudes and behaviours the manner they are intended to be modified. An environment that is not perceived as credible has no ability to persuade, influence or motivate users.

Researchers developed various manners to evaluate and measure the credibility of online services. For example, in Bressolles, G. & Nantel, J. (2003) study, three scales are tested, scales that are considered to be important in the academic world.

According to Hong (2006), the credibility of a Website, considered as message and structure, consists of five dimensions: *expertise, good will, trustworthiness, profoundness* and *honesty.*

The research of Fogg, B.J. (2001) revealed seven factors of credibility: (1) *creating the real world feel* – including elements that underline the physical nature of the presented organisation such as a physical address, photos with the employees; (2) *ease of use of the site* – arranging the site's elements so that it can be easy to follow, navigate in it; (3) *including expertise elements* – by including quotes and references, for example; (4) *including elements of trust* – using links to other materials or sources and distributing real, honest information in time through the site; (5) *personalising the content to the user's experience* – this element is not as important as those already mentioned but it can make a difference; (6) *avoiding to overload with commercial elements on the Website* – users penalize the sites with aggressive commercial content; (7) *avoiding the amateurs traps* – small errors can significantly decrease credibility. Among the seven factors identified by Fogg, B. J. (2001), five have a positive influence on the perception of credibility (*real world feel, ease of use, expertise, trustworthiness* and *tailoring*) while the other two have a negative influence (*commercial implication, amateurism*). These seven dimensions have grouped items of the credibility scale presented in Fogg, B. J. (2001) study. The credibility scale consists of 47 grouped items and 4 items that were not included in any of the dimensions described above.

In Stanford J. (2002) research, site's credibility was measured for two specific domains: finance and health. Subjects were asked to select one or more credible sites and make comments on their selection. The instrument consisted of 30 items. The study offers five general directions to improve credibility: (1) *identity* – the site has to clearly state the physical location of the company, contact information, purpose, mission, etc.; (2) *advertisement and sponsorship* – the site has to make clear distinction between advertisement material and the content itself and to reveal the bought content, sponsors and relevant business connections; (3) *customer support* – the sites involved in electronic transactions should clearly reveal financial relations to other companies, all the fees they collect and the exchange and order cancelation policies of the products before a transaction takes place; (4) *corrections* – the sites should correct all the false information; (5) *privacy policy* – a site should clearly inform the user on the manner personal data, cookies files and other information collecting mechanisms would be used.

The research question of Morrison, P. J. (2005) study was: If more sites supply the same information content, does the presentation manner of information and sources attributing affect the perception of the user's credibility? In this case the elements of online source credibility are: (1) *sufficiency;* (2) *decision;* (3) *trust*; (4) *complete*: (5) *confident*; (6) *liked*; (7) *accurate*; (8) *bias*. Morrison, P. J., (2005)

also identified a negative correlation between the users' Internet expertise and the credibility of the online information.

The dimensions of credibility that were identified for the first time in the scientific literature were *competence* and *trustworthiness* (Hovland 1953; Hovland & Weiss 1951). Ulterior studies using factorial models identified a multitude of dimensions of source credibility such as *expertise, competence* and *trustworthiness* (Eisend, M. 2006). Dimensions that are identified in most studies are highlighted in the table below.

Dimension	
Accuracy	Extroversion
Affiliation w. t. community	Familiarity
Articulation	Good dimension
Attraction	Hostility
Attractiveness	Immediacy – intimacy
Authoritativeness	'Informationsqualität'
Availability	**Interpersonal attractiveness**
Believability	Intimacy
Believability/Onesty	**Knowledge ability**
Bias	Likeability/attractiveness
Character	Objectivity
Charisma	**Personal integrity**
Clarity	**Presentation**
Competence	Prestige
Competitiveness	**Qualification**
Composure	Reliable/logical factor
Co-orientation	**Role model dimension**
Credibility	Safety
Dynamism	**Smart dimension**
Dynamism/Expertness	Sociability
Emotional stability	Stability
Esteem	Taste/progressive/fulfilling
Ethik	**Trustworthiness**
Expertise	**Trustworthiness/authenticity**
Expertness	

Table 1: Source credibility dimensions in past researches

(Source: Eisend, M. 2006, 'Source Credibility Dimensions in Marketing Communication – A Generalized Solution', Journal of Empirical Generalisations in Marketing, p. 5)

3. OBJECTIVE 3 - IDENTIFYING THE METHOD THAT RESEARCHERS USE IN ORDER TO SEPARATE THE CONSTRUCT'S DIMENSIONS

Factor analysis has been studied by mathematicians, statisticians and researchers in social sciences in order to examine relations between variable. Factor analysis is similar to the group analysis, as it is used with the purpose of data reduction; the difference between these two procedures is that group analysis reduces cases while factor analysis reduces variables that are correlated or redundant (Raven 1994; Munteanu, C., Ceobanu, Anton, O. 2009).

The motivation to use the factor analysis is most of the times to obtain data reduction and factorial scales that can be used in future different studies (Kim, J.O. & Mueller, C.W. 1978). Computers and statistical software packages gave an opportunity for most researchers to use this complex analysis with no mathematical background education (Kim, Jae-on. & Mueller, C. W. 1984).

Exploratory factor analysis does not dictate specific rules concerning the sample size. Usually researchers work with convenience samples (Fabrigar 1999). Exploratory factor analysis does not depend greatly on the sample size if communalities have great values (Harrington, D. 2009).

Confirmatory and exploratory analyses are opposed manner of the factor procedure as the confirmatory analysis starts with research hypothesis anticipating the dimensions the researcher is expecting to find and the manners items are grouped within dimensions.

An exploratory factor analysis supposes decisions about selecting a model to be used, the number of factors to be extracted and the rotation method. Most of the times, the reason an exploratory factor analysis is conducted is to reduce data instead of understanding a latent construct (Conway & Huffcutt 2003). An exploratory analysis is conducted in early times in a specific research domain in order to better define or explain hypotheses; confirmatory analyses is conducted when there are important steps already made in the specific domain and the analyses starts with specific hypotheses (Tucker, L. & MacCallum, R.C. 1997). In an exploratory analysis, researchers do not make any kind of specifications about grouping results, this aspect resulting from the statistical and mathematical procedures conducted by the statistical package; confirmatory analysis uses a grouping diagram to test if it matches the registered data (Sudman & Blair 1998).

There are situations when researchers use the exploratory factor analysis in connection with the confirmatory factor analysis. The exploratory analysis can be conducted as an initial study that represents the base of the specific model tested in an ulterior study using the confirmatory analysis. A confirmatory analysis is based on the common factors method. For this reason, a confirmatory analysis is not suited if the initial model was developed with the principal components method (Harrington, D. 2009).

In previous credibility studies applied in various contexts, researchers studied this construct with the use of exploratory factor analysis (Eisend, M. 2006).

CONCLUSIONS

Past research conducted in order to determine the Websites' credibility dimensions identified similar factors and unique, different factors in various studies. These are normal differences as the credibility concept is based on the user's perception of the utility of information. Perception is subjective and credibility's dimensions of Websites is a function of various factors such as the types of the Websites evaluated, the sample type, the instrument that was used to gather data (Ciobanu, O. 2011).

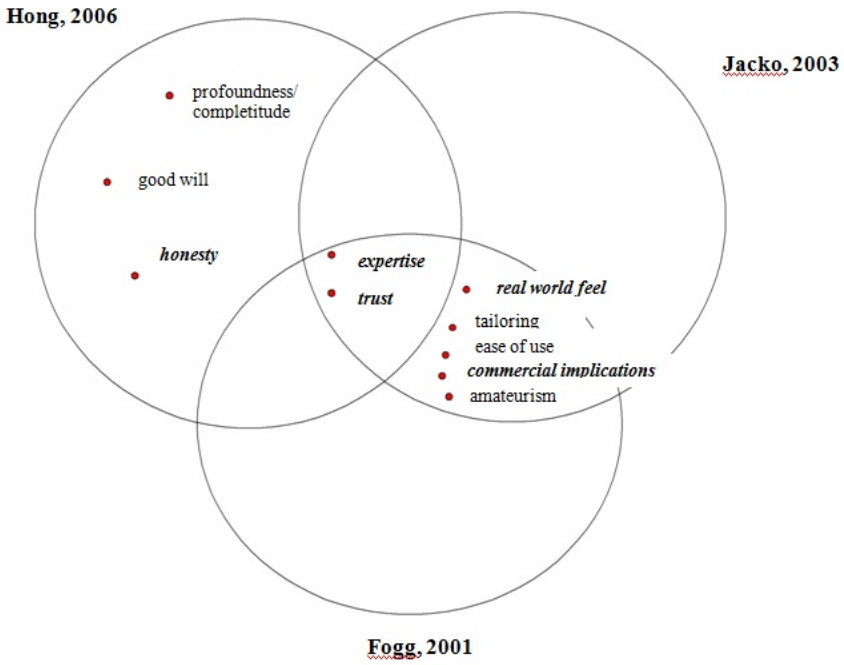


Figure 3: Highlighting the credibility's dimensions from various studies

(Source: Ciobanu, O. 2011, Aspecte ale evaluarii credibilitatii site-urilor comerciale, Tehnopress, Iasi).

Dimensions of *expertise, trust/trustworthiness, real world feel* and *commercial implications* are identified by the majority of credibility studies conducted on Web sites. *Expertise* and *trust* represent the two dimensions underlined in 1953 in the first credibility's dimensions study of Hovland, Janis & Kelley (1953). *Honesty* is frequently identified as a distinct dimension of the credibility construct, in studies conducted for other types of source credibility than the Internet. *Real world feel* and *commercial implications* are dimensions identified especially in Web sites' credibility researches, for all types of investigated population, types of Websites or approached research method (Ciobanu, O. 2011).

ACKNOWLEDGEMENTS

This work was supported by the European Social Fund through Sectoral Operational Programme Human Resources Development 2007 – 2013, project number POSDRU/159/1.5/S/134197, project title "Performance and Excellence in Doctoral and Postdoctoral Research in Economic Sciences Domain in Romania.

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