An Investigation into Users' Role in the Credibility Assessment of Web-Based Information from the Point of View of IAU Faculty Members

[1]Mohammad Ali Karimian, [2]Abbas Horri, [1]Nadjla Hariri and [1]Nooshinfar Fateme

[1]Department of Library and Information Science,
Islamic Azad University, Science and Research Branch, Tehran, Iran
[2]Department of Library and Information Science, Tehran University, Tehran, Iran

Abstract: In different researches carried out on the credibility assessment of Web-based information, different factors and levels are taken into account that include websites, information sources, information, messages and the context within which credibility assessment is made. There are still other factors which do not depend on the source in question, but they are related to user searching the information and his or her haracteristics, attributes and behaviors. In the present study, first the role and position of users in credibility assessment is reviewed through investigating 7 credibility assessment models. Then the most important factors and criteria of the models are illustrated according to views of faculty members. The method of the study is survey and library-based. The population includes 1975 full-time faculty members of District 1 of Islamic Azad University (IAU). Based on Cochran formula, the sample of study includes 322 participants. To test the hypotheses, one-way variance and t-test were used. The data were processed in SPSS. The findings show that such criteria as user's purpose, user's competence (topic knowledge and the knowledge of information technology, the Internet and evaluation) and motivation are among the most important criteria for users' credibility assessment of information, from the faculty members' perspective. There is a significant relationship between the department of the faculty members belong to, the degree of their familiarity with the Internet and the criteria they use for evaluating Web-based information.

Key words: Credibility · Credibility Assessment · Information Sources · The Web · Credibility assessment Models · Users

INTRODUCTION

Credibility is derived from Latin, meaning "to believe" [1]. Although communication researchers have dealing with the notion of source credibility from 1950s, they have not yet come up with a clear definition of credibility [2]. Credibility is a complicated multi-dimensional concept [4, 3] closely and indispensably related to *believability* [5, 6, 3, 7], *trustfulness* [8, 5, 9], *reliability* [10, 11, 3], *accuracy* [12, 11, 3, 2], *authority* [13, 11, 3, 7], *quality* [11, 14, 3, 9], *fairness* [2], *objectivity* [7, 2] and *competence* [9]. From among these concepts, believability has been regarded as an equivalent for credibility. Just as a creditable person is considered to be believable, creditable information too is thought to be believable [2]; as a result, creditable information entails believable information [6]. credibility assessment researchers have specified different dimensions for credibility, but two critical elements of *trustworthiness* and *expertise* have been taken into account as the most important ones [8, 15, 5, 9, 7]. Trustworthiness is considered to be a key factor in credibility assessment; creditable persons, because of their integrity, choose the words they use carefully, trying not to deceive others [16]. On the other hand, Hilligoss and Rieh [2] point out that information is believable if it is reliable and impartial.

Another aspect of credibility is expertise. Fogg identifies the skill and knowledge hidden in the source with expertise, stating that when an individual considers a source to have expertise or views it as a specialized source, he or she tends to assume that it is believable [17]. There are a number of ways to discover the expertise of a

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Corresponding Author: Mohammad Ali Karimian, Department of Library and Information Science,
Islamic Azad University, Science and Research Branch, Tehran, Iran.

source. Among these ways are prior experience, the recommendations of credible persons about the source, reputation and credentials of the source in question [11]. Credibility is also related to quality and cognitive authority. In reality, quality is people's judgment and estimate about the appropriateness and usefulness of information or information sources [2]. For instance, based on Taylor's conceptual model of information quality, people tend to assign more value to some pieces of information more than others [18]. However, the important point is that different individuals may evaluate the information from different points of view. Rieh views information quality to be composed of 5 facets: usefulness, goodness, accuracy, currency and importance; these aspects may not be all present in an evaluation; for instance, the information may be accurate but not useful for the person, may be useful but not important, or may be important but not up-to-date [11]. Thus quality can be studied from different angles. So researchers should decide which aspect of information is more important to them and prioritize it. Taylor too enumerates 5 values of accuracy, comprehensiveness, currency, reliability and validity for quality [18]. The other concept is cognitive authority which is closely related to credibility because worthiness and reliability are among the components of both of the concepts. Wilson postulates that the individuals who try to influence others' thoughts possess cognitive authority. That is why others considers such individuals worthy [16]. Of course, Wilson does not restrict cognitive authority to people, as he maintains that books, tools, organizations and institutes can also be recognized as cognitive authorities.

Another notable aspect of credibility is that, based on research, 6 types of credibility can be specified: presumed credibility, reputed credibility, surface credibility, experienced credibility, verifiable credibility, cost-effort credibility. The first four types were introduced by Tseng and Fogg [5] and the last two by Liu [14].

In most of the researches carried out about credibility, particularly web credibility, wherever we observe the term *credibility*, we may immediately come across the term *assessment* [2, 3, 7, 9, 14, 19-21]. Reviewing the procedures followed in the above studies, one can observe that their ultimate goal is to establish the creditability of information, which can vary depending on the type of the information source and researcher's purpose. Thus, credibility assessment may be of different types. Depending on the method and extent of credibility assessment, the type of information source and users' characteristics and situation, establishing the credibility of information may vary, while users and their role may be the key factors in credibility assessment.

Among the studies done on the credibility assessment of information, some have been proposed as frameworks and models attracting the attention of researchers. But the concern here is the criteria taken into account by each model and proposed as effective factors.

The Significance of the Study: Users, having different purposes and intentions, refer to information and information sources. This activity may range from mere entertainment to gaining information for doing the most complicated research projects. Because users refer to information sources for different purposes, studying their role and factors affecting them at the time of evaluating information is highly important. The present study is an attempt to investigate these factors. To do so, besides studying different models as information source credibility assessment models, taking into account the views of faculty members of universities and institutes, as a major group of Internet users, is highly important.

Research Objectives: The purpose of the present study is to determine the position and the key role of users in evaluating Web-based information sources. To do so, first 7 credibility assessment models[5] proposed by different researchers will be discussed, as far as their user-related factors are concerned. Next, the user-related criteria taken from the existing models will be judged by the sample of the study, to put the criteria to a test practically.

Literature Review: Different studies with various priorities have been carried out to develop a method for the credibility assessment of information particularly Web-based information. Some of these studies are reviewed in this section.

Rieh and Belkin [22] studied researchers' ways for evaluating information, recognizing 7 notable effective factors in determining the quality and cognitive authority; these factors, which interest users, are source, content, format, presentation, currency, accuracy and speed of loading. It was found that people find information systems other than Web authentic and credible.

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[5]Petty and Cacioppo [26]; Fritch and Cromwell [13]; Wathen and Burkell [25]; Fogg [17]; Metzger [7]; Rieh and Danielson [9]; Hilligoss and Rieh [2]

Fritch and Cromwell [13], in a research concerned with the credibility assessment of Internet resources, dealt with cognitive authority and its relationship with the Internet, giving their arguments for connecting cognitive authority to Internet information. Acknowledging that certain criteria are need for evaluating Internet sources, they presented the criteria for cognitive authority and counted the writer and his or her dependency as the most important factors for evaluating online information.

Herring [23] poses certain questions concerning the role of the Web in faculty members' activities. What Herring found shows that from among different criteria, faculty members are more interested in the two notions of accuracy and reliability of information.

In a study, Rieh [11] judges the quality of information and cognitive authority to determine the factors affecting people's judgment about the Web sources. The findings of Reih's study show that when people deal with online information and try to evaluate the quality and cognitive authority of the sources, they make two types of judgment: predictive judgment and evaluative judgment. Rieh [11] also comments on the factors affecting each of the judgment types including the characteristics of the information object, characteristics the resource, knowledge, the situation, the output information rank and the user's general postulates.

Metzeger, Flanagin, Zwarun [24], in a study with college students' reasoning about the credibility of information, compared students' and non-students' view about the web and its function. The findings show that from among different sources, the Internet is the students' primary source and that the students' most important strategy when dealing with information and information sources was taking into account the currency and following that generality and comprehensiveness of information, its authenticity, its validity against other sources, author's identity and intention, credentials, information for contact and author's affiliation.

Liu [14], in a research aimed at identifying the effective factors in students' estimate of web-based scientific information, while introducing the most important effective factors in students' understanding of information credibility, proposed two new types of credibility, namely, verifiable credibility and cost-effort credibility.

Liu and Haung [3], in a study entitled *Evaluating the credibility of scholarly information on the Web: A cross-cultural study*, investigated the priorities taken for granted by Chinese students. The findings show that under-graduate students tend to consider such criteria as author's name, reputation, affiliation and website, whereas post-graduate students tend to take into account the quality and accuracy of the information.

Metzger [7], studying Internet users skills (e.g. critical thinking) for online information credibility assessment, deals with the notion of educating Internet users to evaluate, views credibility assessment models from this perspective and finally proposes his dual processing model.

Research Questions:

- Which one of the Web-based information credibility assessment models is more sensitive to the role of users?
- From the point of view of all of the faculty members in the study (engineering, the humanities, basic sciences, medical science, art and architecture, foreign languages and agriculture and natural resources), what are the most important criteria for evaluating Web information?
- From the point of view of all of the faculty members in the study (engineering, the humanities, basic sciences, medical science, art and architecture, foreign languages and agriculture and natural resources), which credibility assessment models out of the 7 models under study take into account the role of users?

Method and Data Collection Procedures: The method used in this study is library-based and survey. The data were gathered and measured the data through questionnaires.

Population, Sampling Method and Data Analysis Procedures: The population of the study involved all of the faculty members of the District 1 of Islamic Azad University who hold an M.A. and ranked *Instructor*. The total number of the members was 1975, according to the education calendar of 2011 issued by the Secretariat of District 1 of Islamic Azad University. To calculate the sample for the study, Cochran formula was used, as a result of which the sample was found to include 322 members:

$$n = \frac{NZ^2 pq}{Nd^2 + Z^2 pq} = 322$$

To perform analysis on the data, Microsoft Office Excel 2003 was used. To analyze and test the research hypotheses, SPSS was used.

Establishing the Validity of the Tools and Reliability: To make sure of the validity of the questions, a number of sample questionnaires were prepared and given to some experts whose opinions were taken into account in formulating the final version of the questionnaires. To establish the reliability of the questionnaire, Cronbach's Alpha was used. The reliability coefficient was found 0.697 for 12 departments, which shows the internal consistency and their probable recurrence under similar circumstances.

The Findings of the Research: Based on the information observed from the questionnaires answered by the faculty members under study, 75 members (27.7%) were women and 196 members (72.3%) were men. The distribution of the faculty members under study based on the department they belong to is as follows: the humanities (64 persons), engineering (59 persons), basic sciences, (52 persons), agriculture and natural resources (33 persons), foreign languages (28 persons), medical science (24 persons) and art and architecture (11 persons). The data about the faculty members' *degree of familiarity with Internet* were divided into five groups: high: 48.8%, average: 30.3%, excellent:16.2%, low: 2.2%, too low: 1.5%.

Research Questions
First Question: Which one of the Web-based information credibility assessment models is more sensitive to the role of users?

Table 1 shows the answer to this question. As Table 1 illustrates, the user-related criteria used in the models are diverse, with each model covering users from

a especial perspective. Of course, the frequency of the criteria shows that users' motivation, topic knowledge, Internet and technology knowledge and evaluation knowledge are among the most important factors and criteria in evaluating information sources. Following these factors two other ones occur: the situation or context in which users find themselves including occupational, organizational, social contexts, as well as users' purpose of searching information. Such issues as limitations and environmental restrictions, beliefs, subjectivity and stereotypes and personal differences are among the other factors related to the credibility assessment of Web resources.

As can be seen in Table 1, as far as user-related criteria are concerned in the seven models, totally 37 factors were proposed: Fogg: 9, Rieh and Danielson: 9, Wathen and Burkell: 7, Metzger: 5, Hilligoss and Rieh: 3, Petty and Cacioppo: 2.

Second Question: From the point of view of all of the faculty members in the study (engineering, the humanities, basic sciences, medical science, art and architecture, foreign languages and agriculture and natural resources), what are the most important criteria for evaluating Web information?

To answer this question, we should refer to the information collected from the questionnaires which are analyzed as a survey. The findings show that the faculty members under study considered the 12 user-related criteria slightly different from the frequencies of the seven original models. Table 2 illustrates the results.

Table 1: The User-Related Criteria of the Seven Models

Criteria	Seven Models[6]							Total Criteria
	1	2	3	4	5	6	7	
Motivation	*		*	*	*	*		5
Topic Knowledge			*	*	*	*	*	5
Internet and technology knowledge		*	*	*	*	*		5
Evaluation knowledge	*			*	*	*	*	5
Situation or context (occupational, organizational, social)			*	*		*	*	4
Purpose			*	*		*		3
Limitations and environmental restrictions		*			*			2
Beliefs				*		*		2
Subjectivity and stereotypes			*	*				2
Personal differences				*		*		2
Accepted norms				*				1
Attitude toward Web						*		1
Total number of criteria	2	2	7	9	5	9	3	37

[6]Petty and Cacioppo [26]; Fritch and Cromwell [13]; Wathen and Burkell [25]; Fogg [17]; Metzger [7]; Rieh and Danielson [9]; Hilligoss and Rieh [2]

Table 2: The Results of Friedman Test for the Most Important User-Related Criteria for the Credibility assessment of Web Information Sources from the Faculty Members' Point of View

Factor or criterion	Mean of rate
Purpose	8.76
Topic Knowledge	8.60
Evaluation knowledge	8.35
Motivation	7.42
Internet and technology knowledge	7.27
Beliefs	6.18
Personal differences	6.07
Accepted norms	5.96
Subjectivity and stereotypes	5.74
Situation or context	5.08
(occupational, organizational, social)	
Attitude toward Web	4.45
Limitations and environmental restrictions	4.13

Asymp.Sig.	Chi-Square	df	N
0.000	693.9	11	271

Table 3: Rank-Based Rating of the Criteria in Each Model

Factor or criterion	Criterion rate	Models
Purpose	12	3.4.7
Topic Knowledge	11	3.4.5.6.7
Evaluation knowledge	10	1.4.5.6.7
Motivation	9	1.3.4.5.6.7
Internet and technology knowledge	8	2.3.4.5.6
Beliefs	7	3.6
Personal differences	6	4.6
Accepted norms	5	4
Subjectivity and stereotypes	4	3.4
Situation or context	3	3.4.6.7
(occupational, organizational, social)		
Attitude toward Web	2	6
Limitations and environmental restrictions	1	2.5

Table 4: The Most Important User-Related Role Models of Web Information Credibility assessment Form the Faculty Members Point of View

Model	Total points
Fogg (2003)	65
Rieh and Danielson (2007)	57
Wathen and Burkell (2002)	56
Hilligoss and Rieh (2008)	46
Metzger (2007)	39
Petty and Cacioppo (1986)	19
Fritch and Cromwell (2001)	9

As Table 2 illustrates, based on Friedman test, the most important user-related criterion for the credibility assessment of Web information sources from the faculty members' point of view is *purpose* ranked 1 with 8.76 mean, whereas in the models' frequency table, this factor was ranked 6. This criterion was taken into account only in Wathen and Burkell [25], Fogg [17], Hilligoss and Rieh [2]. The next criteria are respectively user's topic

knowledge (8.60), Evaluation knowledge (8.35), motivation (7.42) and Internet and technology knowledge (7.27). Attitude toward Web (4.45) and limitations and environmental restrictions (4.13) are respectively the least important user-related criteria for the credibility assessment of Web-based information resources chosen by the faculty members under study.

Third Question: From the point of view of all of the faculty members in the study (engineering, the humanities, basic sciences, medical science, art and architecture, foreign languages and agriculture and natural resources), which credibility assessment models out of the 7 models under study take into account the role of users?

Table 3 illustrates the answer to this question by showing the position of the 12 criteria across the 7 models as well as the rank-based rate assigned to each of the criteria.

As can be seen in Table 3, the 12 criteria under investigation were assigned a number (1-12) in descending order of importance; then the rates assigned to each model based on the criteria and the position of each criterion according to the decision of the faculty members were added. Table 4 shows the results.

The results in Table 4 indicate that models of Fogg, Rieh and Danielson and Wathen and Burkell, from the point of view of the faculty members, are important enough to respectively cover 1-3 ranks, because they proposed the most important user-related criteria for Web-based information credibility assessment. Hilligoss and Rieh [2], Metzger [7] and Petty and Cacioppo [26] respectively follow the above models. It should be noted that *purpose* as the most important user-related criterion for evaluating Web sources was taken into account only by the first three models, which further marks their importance.

Testing the Research Hypotheses
First Hypothesis: There is a direct relationship between the faculty members under study (engineering, the humanities, basic sciences, medical science, art and architecture, foreign languages and agriculture and natural resources) and the criteria they used for evaluating user-related information resources.

Considering the fact that *department* is a ordinal variable with 6 ranks and that *user* is a qualitative (interval) variable, one-way variance can be used for testing the above hypothesis. Table 5 shows the results.

Table 5: Users' Descriptive Statistics Based on Their Respective Departments

Department	Number	Mean	SD	Standard Error
Engineering	59	3.67	0.250	0.033
The humanities	64	3.63	0.416	0.052
Basic Sciences	52	3.54	0.343	0.047
Medicine	24	3.68	0.270	0.055
Art and architecture	11	3.76	0.227	0.068
Foreign languages	28	3.78	0.301	0.057
Agriculture and natural resources	33	3.81	0.452	0.078
Total	271	3.67	0.355	0.022

Table 6: One-Way ANOVA of Users' Level

User	Sum of squares	Degree of freedom	Mean square	F-statistics	Significance level
Cross-department	1.803	4	0.451	3.712	0.006
Intera-department	32.29	266	0.121		
Total	34.1	270			

Table 7: The Results of Post-Hoc Paired Comparison; Dependent Variable: Users

Department (I)	Department (J)	Mean difference (I-J)	Standard error	Confidence interval 95%	
				Lower bound	Upper bound
Technical engineering	The humanities	0.0367	0.062	-0.1520	0.226
	Basic sciences	0.1250	0.058	-0.0530	0.304
	Medical science	-0.0100	0.064	-0.2160	0.194
	Art and architecture	-0.0940	0.076	-0.3630	0.173
	Foreign languages	-0.1080	0.066	-0.3170	0.099
	Agriculture and natural resources	-0.1450	0.085	-0.4130	0.122
The humanities	Technical engineering	0.0360	0.062	-0.2260	0.152
	Basic sciences	0.0880	0.070	-.0127	0.304
	Medical science	-0.0470	0.075	-0.2850	0.190
	Art and architecture	-0.1310	0.086	-0.4250	0.161
	Foreign languages	-0.1450	0.077	-0.3860	0.095
	Agriculture and natural resources	-0.1820	0.094	-0.4760	0.111
Basic sciences	Technical engineering	-0.1250	0.058	0.3040	-0.053
	The humanities	-0.0880	0.070	-0.3040	0.127
	Medical science	-0.1350	0.072	-0.3660	0.094
	Art and architecture	-0.2200	0.083	-0.5070	0.067
	Foreign languages	-0.2340	0.074	-0.4660	-0.001
	Agriculture and natural resources	-0.2700	0.092	-0.5580	0.016
Medical science	Technical engineering	0.0100	0.064	-0.1940	0.216
	The humanities	0.0470	0.075	-0.1900	0.285
	Basic sciences	0.1350	0.072	-0.0940	0.366
	Art and architecture	-0.0840	0.087	-0.3890	0.220
	Foreign languages	-0.0980	0.079	-0.3520	0.155
	Agriculture and natural resources	-0.1340	0.096	-0.4390	0.170
Art and architecture	Technical engineering	0.0940	0.076	-0.1730	0.363
	The humanities	0.1310	0.086	-0.1610	0.425
	Basic sciences	0.2200	0.083	-0.0670	0.507
	Medical science	0.0840	0.087	-0.2200	0.389
	Foreign languages	-0.0130	0.089	-0.3200	0.292
	Agriculture and natural resources	-0.0500	0.104	-0.4000	0.299

Table 7: The Results of Post-Hoc Paired Comparison; Dependent Variable: Users

Foreign languages	Technical engineering	0.108	0.066	-0.099	0.317
	The humanities	0.145	0.077	-0.095	0.386
	Basic sciences	0.234	0.074	0.001	0.466
	Medical science	0.098	0.079	-0.155	0.352
	Art and architecture	0.013	0.089	-0.292	0.320
	Agriculture and natural resources	-0.036	0.097	-0.343	0.270
Agriculture and natural resources	Technical engineering	0.145	0.085	-0.122	0.413
	The humanities	0.182	0.094	-0.111	0.476
	Basic sciences	0.270	0.092	-0.016	0.588
	Medical science	0.134	0.096	-0.170	0.439
	Art and architecture	0.050	0.104	-0.299	0.400
	Foreign languages	0.036	0.097	-0.270	0.343

Table 8: User Level Descriptive Statistics in Terms of Degree of Familiarity with the Internet

Degree of familiarity with Internet	Number	Mean	Standard deviation	Standard error
Too low	4	3.09	0.071	0.035
Low	6	3.58	0.406	0.165
Average	82	3.72	0.393	0.043
High	135	3.68	0.333	0.028
Excellent	44	3.60	0.305	0.046
Total	271	3.67	0.355	0.021

Table 9: User Level One-Way ANOVA

User level	Sum of squares	Degree of freedom	Mean square	F-statistics	Significance level
Cross-department	1.803	4	0.451	3.712	0.006
Intra-department	32.29	266	0.121		
Total	34.10	270			

Table 10: Results of Paired Comparison through LSD Post-Hoc Test

Internet familiarity degree (I)	Internet familiarity degree (J)	Mean difference (I-J)	Mean standard error	Significance Level
Too low	Low	-0.484	0.224	0.032
	Average	-0.629	0.178	0.000
	High	-0.589	0.176	0.001
	Excellent	-0.514	0.181	0.005
Low	Too low	0.484	0.224	0.032
	Average	-0.144	0.147	0.328
	High	-0.105	0.145	0.470
	Excellent	-00.290	0.151	0.847
Average	Too low	*0.629	0.178	0.000
	Low	0.144	0.147	0.328
	High	0.039	0.048	0.423
	Excellent	0.115	0.065	0.078
High	Too low	*0.589	0.176	0.001
	Low	0.105	0.145	0.470
	Average	-0.039	0.048	0.423
	Excellent	0.075	0.060	0.210
Excellent	Too low	*.514	0.181	0.005
	Low	0.029	0.151	0.847
	Average	-0.115	0.065	0.078
	High	-0.075	0.060	0.210

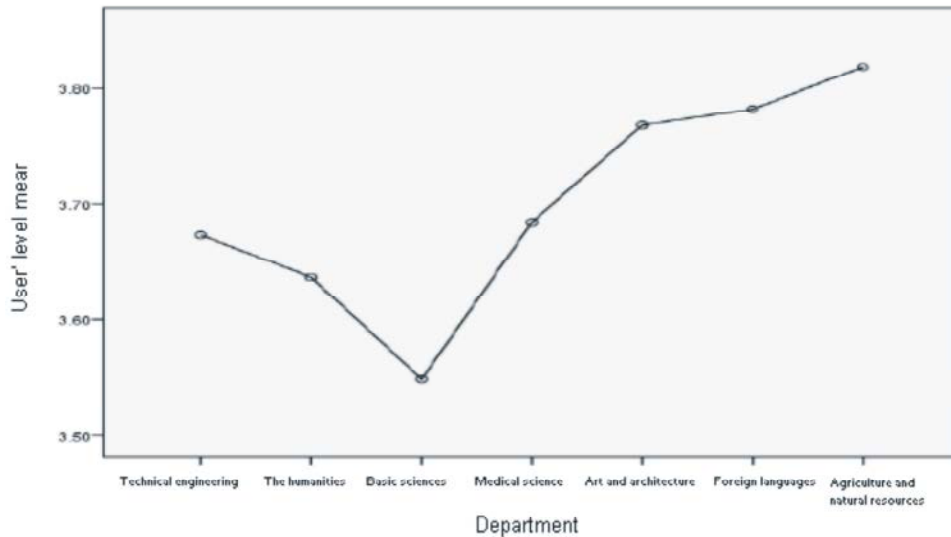*. The mean difference is significant at 0.05 level

Fig. 1: The difference in the means of the criteria used for evaluating information for each of the faculties of different departments

Given the observed level of significance (sig=0.006) and F-statistics (F=3.712), we can see in the ANOVA table above that because the level of significance is less than 0.05, the null-hypothesis is rejected. In other words, it can be claimed with 95% confidence that the above research hypothesis is statistically significant at 0.05 level, meaning that there is a difference between users' degree of familiarity with the Internet and the criteria used for evaluation at users' level. In more accurate words, the lowest mean of the criteria used for evaluation is significantly different in the users' level of one of the ranks. Yet, based on the present data, we cannot make any further judgment. As a result, we need to perform a post-hoc test and because the result of Levene's test (sig=0.006) is less than 0.05, the variances are not homogeneous. So Dunnett's test (a comparative method that does not require equal variances) should be used to determine the different mean.

Table 7 shows the results of Dunnett's test (or post-test). Dunnett's test involves paired comparisons; that is, the means of the groups are compare one by one to reveal the means of which two groups are significantly different from ach other. As can be seen in Table 7, the faculty members of basic sciences and foreign languages are significantly different from each other in using the user-relate criteria for evaluating information.

The difference in the means of the criteria used for evaluating information for each of the departments can be plotted as follows:

Second Hypothesis: There is a direct relationship between the present faculty members' degree of familiarity with the Internet and the types of the criteria they used for evaluating Web-based information resources.

Given that the "degree of familiarity with the Internet" is an ordinal variable with 5 ranks and "user's level" is a quantitative (interval) variable, one-way variance can be used to test the hypothesis.

Given the observed significance level (sig=0.006) and the F-statistics (F=3.712) in Table 9, we learn that because the significance level is lower that 0.05, the null-hypothesis is rejected. In other words, with 95% confidence, one can claim that the above research hypothesis is statistically significant at 0.05 level. That is, there is a difference between the degree of familiarity with the Internet and the criteria used for evaluating information. To put in more accurately, the lowest mean of one of the levels is significantly different from the others. No further judgment can be made based on the present data, so a post-hoc test should be used. Given that the significance level as a result of Levene's test (sig=0.564) was found to be more than 0.05, the variances are homogeneous and LSD test should be used to discover the group with a different mean.

Table 10 shows the results of LSD (which could be called a post-test). LSD involves a paired comparison between the means to discover the two groups with significantly different means. As can be seen in Table 10, there is a significant difference between the *user level* of the members who are not much familiar with the Internet
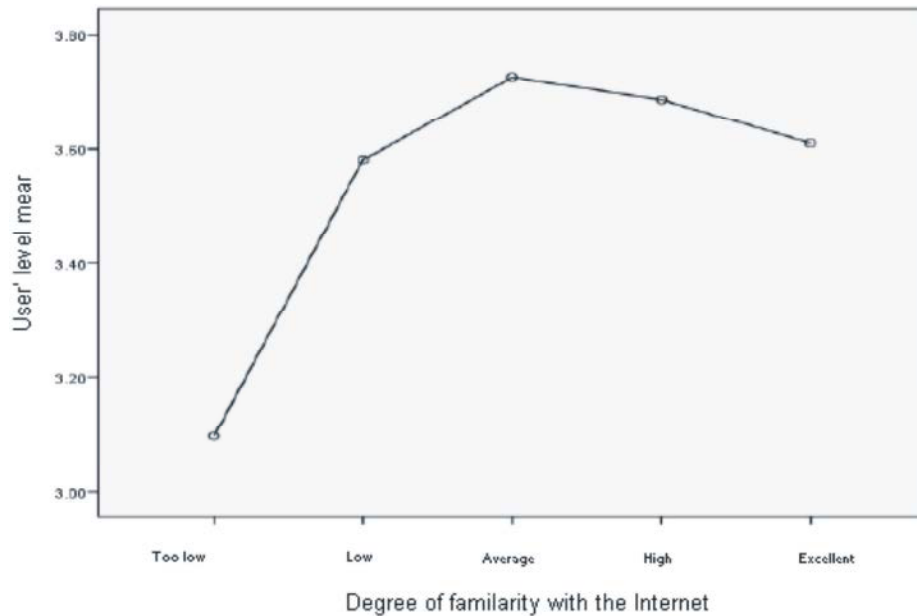
Fig. 2: The difference in the means of user level criteria for evaluating information used by the faculty members based on their degree of familiarity with the Internet

(too low) and those who have low (sig=0,032), average (sig=0.000), high (sig=0.001), or excellent (0.005) familiarity with the Internet.

Figure 2 clearly illustrates the mean difference of the criteria used for evaluating information at user level in terms of the members' degree of familiarity with the Internet.

CONCLUSION

Users, as an effective factor, play a crucial role in the credibility assessment of Web-based information. An investigation into different models for the credibility assessment of Web-based resources as well as the views of faculty members shows that models of Fogg [17] and Rieh and Danielson [9] rank 1, as far as taking user's role into account is concerned. The next models are Wathen and Burkell [25], Metzger [7] and Hilligoss and Rieh [2]. The models proposed by Petty and Cacioppo [26] and Fritch and Cromwell [13] are less sensitive to the role of users. The results pertaining to the views of the faculty members under study about the importance of the models under investigation reveals that models of Fogg [17], Rieh and Danielson [9] and Wathen and Burkell [25] are respectively ranked 1,2,3, which shows the importance given to user's role in the models.

The results also indicate that *users' purpose* is the most important tool for evaluating Web-based

information, from the faculty members' point of view. Following that, *topic knowledge*, *evaluation knowledge*, *motivation* and *technology and Internet knowledge* are the most important factors. The findings also show the effect of users' degree of familiarity with the Internet on how users verify information resources. Users with *too low* familiarity are significantly different from others.

Considering the results of the study on faculty members, the same research can be carried out on other groups of users. Considering the results of the present and similar studies, we suggest high education policy-makers to take into consideration the notion of teaching Web-based information credibility assessment to faculty members and university students, with a focus of the role of users in evaluating information.

Finally, given the investigations made in different models and the faculty members' views about users' role in evaluating Web-based information, user-related factors can be divided into 2 groups. Each of these factors can be effective in users' credibility assessment of Web-based resources:

Internal Factor: Factors or criteria related to the user. They may include knowledge, topic knowledge, knowledge of resource evaluation, knowledge of the Internet and communication technologies, basic factors, beliefs, subjectivity and prior experience.
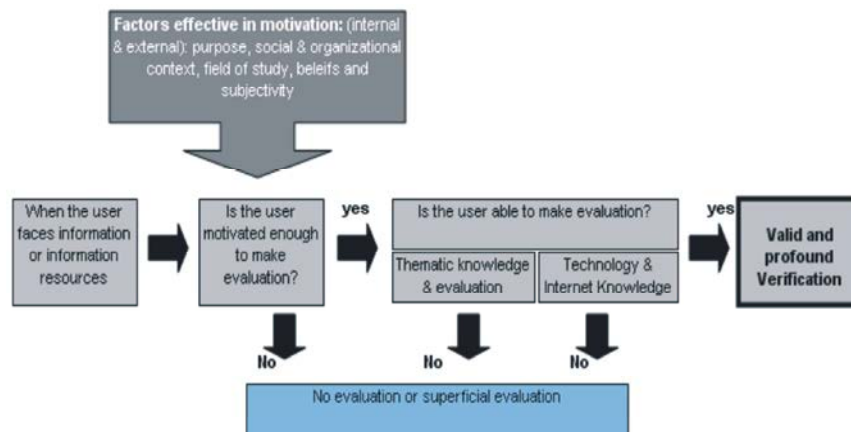
Fig. 3: A hypothetical user-centered model for the credibility assessment of Web-based information resources based on the 7 models under investigation

External Factor: These factors or criteria are not related to the user but the external effective factors in credibility assessment; for example, users' field of study, organizational and social contexts, limitations and environmental restrictions.

Considering the factors studied in the models, we can propose a hypothetical user-centered credibility assessment model illustrated in Figure 3.

As can be seen in the model, the user, facing with information and information resources, may be motivated enough to verify the information, or may not be motivated to deal with different internal or external factors. If the users' answer is negative, he or she will not evaluate the information, or his or her evaluation may be superficial. However, if the answer is positive and the user is motivated, he or she will need necessary knowledge including topic or Internet knowledge and so on. If the user fails to have such knowledge, his or her superficial may be superficial and negatively influenced; otherwise, the user will make a profound evaluation following which he or she will enter the credibility assessment phase.

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