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INFORMATION EVALUATION BEHAVIOR AMONG OPHTHALMOLOGISTS - A STUDY IN INDIA

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ABSTRACT:

Background:

The Information Millennium unfolds loads of information in a lightning speed and leads to a knowledge-based society. Managing loads of information and applying cognitive skills to choose information that best-fit the needs become a difficult task. This paper focuses on studying how the Ophthalmologists – Eye Doctors evaluate the information.

Methodology:

The study design is cross-sectional and convenience sampling method is adopted. A structured questionnaire was used to collect data. SPSS 18 PASW Statistical package was used for statistical analysis. Frequencies, percentages, Mann Whitney U test, Kruskal-Wallis test, Factor Analysis, Wilcoxon signed rank test were used in the study.

Findings:

Around 633 ophthalmologists working in 47 academic eye hospitals from 16 states of India were included in the study. The study results revealed that the majority of the ophthalmologists check how the information is relevant to research. The statistical test results showed up that the ophthalmologists' evaluation preference differs by age group, designation, and experience. The two major factors of ophthalmologists' information evaluation behavior were identified as accuracy and reasonability, credibility and support. The accuracy and reasonability evaluation factor was significantly higher than the credibility and support factor.

Conclusion:

Information evaluation is a significant part in the higher order thinking. So the ophthalmic librarians and ophthalmic institutions should provide information literacy programs for ophthalmologists to improve their information evaluation skills.

Keywords: Information Evaluation; Ophthalmologists; CARS checklist; Information literacy; information seeking behavior.

1. INTRODUCTION:

The Information Millennium unfolds loads of information in a lightning speed and leads to a knowledge-based society. Managing loads of information and applying cognitive skills to choose information that best-fit the needs become a difficult task. Intrinsic knowledge is not well enough to choose wealthy elite information. Traditional information evaluation methods have evolved alternate strategies to help the individuals in making a right pick to satisfy the information need.

CARS checklist is designed to make the information evaluation easy. It helps to filter the right information against the factors Credibility, Accuracy, Reasonableness, and Support.

Credibility - helps to find an authoritative good evident source

Accuracy - helps to identify updated information that meets the need

Reasonableness - helps to pick up a fair balanced resource without any bias

Support - helps to find out a corroborated resource

This paper focuses on studying how the Ophthalmologists – Eye Doctors evaluate the information. By keeping the CARS checklist as the primary guide, a survey method is used to obtain the ophthalmologists' opinion on the criteria they used to follow in information evaluation. This particular study is a part of the on-going study “Information Needs, Sources and Seeking Behaviour of Ophthalmologists in Academic Eye Hospitals in India”.

2. REVIEW OF LITERATURE:

Calkins, S., & Kelley, M. R. (2007) has conducted a study "Evaluating Internet and Scholarly Sources across the Disciplines". They discussed on each of the acronym in the CARS checklist with students. For each part of the acronym, the students were asked to generate a list of characteristics and questions that would indicate whether a source was credible, accurate, and so on. For instance, when assessing credibility, the students noted one should consider the author's credentials (e.g., level of education, experience, employer, position, and reputation).

Vanderbilt, K. L. (2002) has conducted a Review of Literature on Evaluating Internet Information Action Research Exchange and designed a Framework for the Information Literate Student. In the study, he discussed about Alexander and Tate model and Harris CARS checklist. He concluded that the internet publishing techniques result in challenges for effective evaluation of Web resources. He also suggested that new search strategies and evaluative techniques are needed to find the best resources among the vast amount of material available.

Julien, H., (2009) examined the high-school students seeking and evaluating scientific information behavior. The study results revealed that many students are unable to demonstrate sophisticated information searching and critical evaluation skills.

Korobili, S., investigated the factors that influence information-seeking behavior: The case of Greek graduate students. They were asked to share about the evaluation criteria they are using to decide the information is relevant or not. They mostly considered “the title of the source,” followed by “the title of the periodical,” the “descriptors,” the “abstract of the source.”

Malliari, A., (2011) conducted a study to explore the information seeking behavior of Greek graduate students. A total of 254 UoM students were participated in the study. The students were asked to share the evaluation criteria they used. The participants responded that

they decide based on the title of source, followed by objectivity of source, date of publication, the abstract, title of the periodical and the descriptor.

Garoufallou, E., (2016) investigated how university students in health care look for information. A total of 130 students participated in the survey. The authors investigated the issue of organizing the results and choosing more relevant information. Almost a third of the respondents indicated that they were not aware of any evaluation techniques.

Information age rewarded information overload also to society. The brighter side of the information overload favored the society with a wide variety of information resources and the darker side of information overload disclosed that reliable information is power. Information evaluation is a significant part in the higher order thinking. Information literacy programs should provide mandatory information evaluation skills. Very few empirical studies exist related to information evaluation which leads to this study. The main aim of the study is to get more insights about how the ophthalmologists evaluate information. Based on the ease and popularity CARS checklist is used a guideline for the study.

3. OBJECTIVES:

- ✚ To identify how the ophthalmologist evaluate the information
- ✚ To examine whether the information evaluation behavior is same among male and female
- ✚ To find out whether the information evaluation behavior is same among ophthalmologists in different age groups
- ✚ To find out whether the information evaluation behavior is same among ophthalmologists in different designations
- ✚ To find out whether the information evaluation behavior is same among ophthalmologists with different working experience
- ✚ To find out whether the information evaluation behavior is same among ophthalmologists working in different institution types

4. HYPOTHESES:

1. The information evaluation behavior among male and ophthalmologists is same
2. The information evaluation behavior among ophthalmologists in different age groups is same
3. The information evaluation behavior among ophthalmologists with different designation is same
4. The information evaluation behavior among ophthalmologists with working experience is same
5. The information evaluation behavior among ophthalmologists working in different institution types is same

5. METHODOLOGY:

This study focuses on studying how the Ophthalmologists – Eye Doctors evaluate the information. The research design adopted for this study was cross-sectional. Convenience sampling method was found appropriate to enroll the wide-spread ophthalmologist population and the same was followed in the study. A structured questionnaire was used as a data collection tool to record the ophthalmologists' responses. A list of 12 statements is chosen after a thorough literature review that depicts the SBCC (2017) enhanced CARS factors were used for examining the ophthalmologists' information evaluation behavior. A total of 633 ophthalmologists from 47

academic eye hospitals in 16 states of India were included in the study. The collected data were entered into data-entry software, purposefully developed for the study. The software was developed in Microsoft Visual Basic 6.0 with backend SQL Server 2000. For further analysis, the data stored in SQL Server 2000 was extracted into Ms-Excel 2007 spreadsheets. MS-Excel 2017 was used to organize and tabulate the data. SPSS 18 PASW Statistical package was used for statistical analysis. Frequency counts and Ranks were used to find out the most common preference of ophthalmologists. The Mann Whitney U test was used to examine ophthalmologists' preferences with gender. The Kruskal-Wallis test was used to examine the ophthalmologists' preferences with age, designation, experience, and institution type. Factor Analysis, Wilcoxon signed rank test were used to determine the evaluation behavior of ophthalmologists.

6. ANALYSIS:

Information Evaluation preference among Ophthalmologists had been ascertained based on twelve variables with a five point scale such as "1-Never", "2-Rarely", "3-Seldom", "4-Often" and "5-Most Often". The internal consistency of the variables was measured by Cronbach's alpha (Alpha >0.70 is considered as acceptable). The alpha coefficient for the variables is 0.8879 which indicates that the variables have relatively high internal consistency. Number of responses, percentage, mean, standard deviation, median, and rank were shown in Table 1. Ranks were assigned based on the mean and standard deviation.

Table 1: INFORMATION EVALUATION PREFERENCES – SUMMARY

S.no	Description	Never (%)	Rarely (%)	Seldom (%)	Often (%)	Most Often (%)	Mean (SD)	Median	Rank
1	Publisher organization of the information	10 (1.6%)	33 (5.2%)	173 (27.3%)	353 (55.8%)	64 (10.1%)	3.68 (0.79)	Often	10
2	Author's credentials	5 (0.8%)	37 (5.8%)	169 (26.7%)	350 (55.3%)	72 (11.4%)	3.71 (0.77)	Often	9
3	Does the information has author's contact information	15 (2.4%)	70 (11.1%)	276 (43.6%)	224 (35.4%)	48 (7.6%)	3.35 (0.86)	Seldom	12
4	How is the information relevant to your research needs?	2 (0.3%)	6 (0.9%)	107 (16.9%)	412 (65.1%)	106 (16.7%)	3.97 (0.63)	Often	2
5	Is the information presented have citations properly	4 (0.6%)	19 (3%)	171 (27%)	352 (55.6%)	87 (13.7%)	3.79 (0.74)	Often	7
6	Is the page layout / presentation style visually pleasing?	9 (1.4%)	50 (7.9%)	197 (31.1%)	304 (48%)	73 (11.5%)	3.6 (0.85)	Often	11
7	How do the images enhance the message?	2 (0.3%)	21 (3.3%)	141 (22.3%)	362 (57.2%)	107 (16.9%)	3.87 (0.73)	Often	5
8	Is the author an expert in the field	2 (0.3%)	24 (3.8%)	115 (18.2%)	357 (56.4%)	135 (21.3%)	3.95 (0.76)	Often	3
9	Does the information agree with other sources	2 (0.3%)	24 (3.8%)	128 (20.2%)	379 (59.9%)	100 (15.8%)	3.87 (0.72)	Often	4
10	How is the information relevant to your research?	2 (0.3%)	7 (1.1%)	84 (13.3%)	400 (63.2%)	140 (22.1%)	4.06 (0.65)	Often	1

11	What bias the author appear to have in the information	4 (0.6%)	30 (4.7%)	184 (29.1%)	329 (52%)	86 (13.6%)	3.73 (0.78)	Often	8
12	In what way the information is balanced?	4 (0.6%)	16 (2.5%)	150 (23.7%)	375 (59.2%)	88 (13.9%)	3.83 (0.71)	Often	6

It can be seen from the table 1 that “How is the information relevant to your research” was the first preference of ophthalmologists. It is followed by "How is the information relevant to your research needs?" and "Is the author an expert in the field?" which were their second and third preferences. The least preference was "Does the information has author’s contact information ". The mean value of the responses ranges between 3.35 and 4.06. The standard deviation of the responses ranges between 0.63 and 0.86.

The information evaluation preferences of both female and male ophthalmologists were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Mann Whitney U test results were shown in Table 2

TABLE 2: INFORMATION EVALUATION PREFERENCESVs GENDER

S.no	Description	Female		Male	
		Mean (SD)	Rank	Mean (SD)	Rank
1	Publisher organization of the information	3.7 (0.8)	10	3.65 (0.77)	10
2	Author’s credentials	3.72 (0.79)	9	3.69 (0.76)	9
3	Does the information has author’s contact information	3.34 (0.9)	12	3.35 (0.83)	12
4	How is the information relevant to your research needs?	4.04 (0.61)	2	3.91 (0.65)	3
5	Is the information presented have citations properly	3.85 (0.74)	7	3.73 (0.73)	7
6	Is the page layout / presentation style visually pleasing?	3.61 (0.87)	11	3.6 (0.83)	11
7	How do the images enhance the message?	3.88 (0.72)	6	3.86 (0.74)	4
8	Is the author an expert in the field	3.95 (0.75)	3	3.94 (0.77)	2
9	Does the information agree with other sources	3.94 (0.71)	4	3.81 (0.73)	5
10	How is the information relevant to your research?	4.09 (0.65)	1	4.03 (0.65)	1
11	What bias the author appear to have in the information	3.76 (0.78)	8	3.71 (0.77)	8

12	In what way the information is balanced?	3.89 (0.7)	5	3.78 (0.72)	6
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Rank is derived for each gender group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that both the female and male ophthalmologists prefer "How is the information relevant to your research?".

A Mann Whitney U test was conducted to determine whether there is any difference between ophthalmologists' preferences on information evaluation and gender. The mean rank for male ophthalmologists was 316.24. The mean rank for female ophthalmologists was 317.88. The test showed that there doesn't exist a significant difference between ophthalmologists preference and gender (P-value=0.910)

The information evaluation preferences of ophthalmologists in different age groups were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table 3

TABLE 3: INFORMATION EVALUATION PREFERENCEVs AGE GROUP

S.no	Description	Less than or equal to 30		31 to 40		41 to 50		51 to 60		61 and above	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	Publisher organization of the information	3.63 (0.82)	9	3.7 (0.78)	10	3.71 (0.73)	10	3.71 (1.01)	10	3.63 (0.52)	7
2	Author's credentials	3.54 (0.84)	11	3.74 (0.73)	9	3.91 (0.75)	6	4.05 (0.59)	6	3.63 (0.52)	7
3	Does the information has author's contact information	3.18 (0.91)	12	3.39 (0.81)	12	3.53 (0.85)	12	3.67 (0.91)	11	3.25 (0.71)	12
4	How is the information relevant to your research needs?	3.9 (0.64)	2	3.96 (0.63)	3	4.13 (0.59)	1	4.19 (0.68)	1	3.75 (0.71)	4
5	Is the information presented have citations properly	3.72 (0.74)	7	3.76 (0.74)	8	3.97 (0.65)	4	4.14 (0.79)	2	3.88 (0.83)	1
6	Is the page	3.56	10	3.67	11	3.54	11	3.33	12	3.63	7

	layout / presentation style visually pleasing?	(0.86)		(0.77)		(0.95)		(1.2)		(0.74)	
7	How do the images enhance the message?	3.84 (0.77)	3	3.88 (0.69)	5	3.89 (0.79)	7	3.95 (0.67)	9	3.88 (0.83)	1
8	Is the author an expert in the field	3.76 (0.82)	6	4.07 (0.64)	1	3.99 (0.85)	3	4.1 (0.94)	5	3.75 (0.71)	4
9	Does the information agree with other sources	3.76 (0.75)	5	3.92 (0.69)	4	3.94 (0.77)	5	4.14 (0.57)	4	3.38 (0.52)	11
10	How is the information relevant to your research?	4.04 (0.6)	1	4.06 (0.66)	2	4.09 (0.73)	2	4.14 (0.73)	2	3.88 (0.64)	1
11	What bias the author appear to have in the information	3.64 (0.82)	8	3.77 (0.71)	7	3.79 (0.89)	9	3.95 (0.74)	8	3.63 (0.52)	7
12	In what way the information is balanced?	3.78 (0.75)	4	3.86 (0.67)	6	3.85 (0.76)	8	4 (0.71)	7	3.75 (0.71)	4

Rank is derived for each age group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in the age groups "Less than or equal to 30", "61 and above" prefer "How is the information relevant to your research". The ophthalmologists in the age group "61 and above" also prefer "Is the information presented have citations properly". The ophthalmologists in the age group "31 to 40" prefer "Is the author an expert in the field". The ophthalmologists in the age group "41 to 50", "51 to 60" prefer "How is the information relevant to your research needs".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with age groups. The mean ranks for the age groups were Less than or equal to 30 (277.62), 31 to 40 (331.69), 41 to 50 (351.60), 51 to 60 (378.62), 61 and above (291.13) respectively. The test showed that there exist a significant difference between ophthalmologists preference and age groups ($\chi^2(2) = 17.857$, P-value=0.001).

The information evaluation preferences of ophthalmologists in different designation groups were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table 4

TABLE 4: INFORMATION EVALUATION PREFERENCESVs DESIGNATION

S.no	Description	Medical Officer		Fellows		Senior Resident	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	Publisher organization of the information	3.63 (0.82)	9	3.7 (0.78)	10	3.71 (0.73)	10
2	Author's credentials	3.54 (0.84)	11	3.74 (0.73)	9	3.91 (0.75)	6
3	Does the information has author's contact information	3.18 (0.91)	12	3.39 (0.81)	12	3.53 (0.85)	12
4	How is the information relevant to your research needs?	3.9 (0.64)	2	3.96 (0.63)	3	4.13 (0.59)	1
5	Is the information presented have citations properly	3.72 (0.74)	7	3.76 (0.74)	8	3.97 (0.65)	4
6	Is the page layout / presentation style visually pleasing?	3.56 (0.86)	10	3.67 (0.77)	11	3.54 (0.95)	11
7	How do the images enhance the message?	3.84 (0.77)	3	3.88 (0.69)	5	3.89 (0.79)	7
8	Is the author an expert in the field	3.76 (0.82)	6	4.07 (0.64)	1	3.99 (0.85)	3
9	Does the information agree with other sources	3.76 (0.75)	5	3.92 (0.69)	4	3.94 (0.77)	5
10	How is the information relevant to your research?	4.04 (0.6)	1	4.06 (0.66)	2	4.09 (0.73)	2
11	What bias the author appear to have in the information	3.64 (0.82)	8	3.77 (0.71)	7	3.79 (0.89)	9
12	In what way the information is balanced?	3.78 (0.75)	4	3.86 (0.67)	6	3.85 (0.76)	8

Rank is derived for each designation group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in designation group "Medical Officer" prefers "How is the information relevant to your research?". The ophthalmologists in the designation group "Fellow" prefer "Is the author an expert in the field". The ophthalmologists in the designation group "Senior Resident" prefer "How the information is relevant to your research needs?".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with designation groups. The mean ranks for the designation groups were Medical Officer (334.49), Fellows (291.78), and Senior Resident (318.54) respectively. The test showed that there exist a significant difference between ophthalmologists preference and designation ($\chi^2(2) = 8.234$, P-value=0.016).

The information evaluation preferences of ophthalmologists in different experience groups were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table 5

TABLE 5: INFORMATION EVALUATION PREFERENCES Vs EXPERIENCE

S.no	Description	Less than or equal to 5 years		6 to 10 years		11 to 15 years		16 to 20 years		21 and above years	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	Publisher organization of the information	3.64 (0.79)	9	3.5 (0.85)	11	3.77 (0.63)	4	3.55 (0.89)	10	3.86 (0.73)	10
2	Author's credentials	3.64 (0.79)	10	3.8 (0.85)	10	3.73 (0.69)	5	3.71 (0.69)	9	3.91 (0.72)	8
3	Does the information has author's contact information	3.29 (0.86)	12	3.45 (0.96)	12	3.3 (0.88)	11	3.35 (0.84)	11	3.51 (0.83)	12
4	How is the information relevant to your research needs?	3.92 (0.64)	2	4.13 (0.52)	4	4.03 (0.56)	1	4 (0.73)	2	4.06 (0.62)	3
5	Is the information presented have citations properly	3.71 (0.74)	7	4 (0.64)	7	3.93 (0.74)	2	3.97 (0.8)	3	3.9 (0.71)	9
6	Is the page layout / presentation style visually pleasing?	3.59 (0.82)	11	3.83 (0.75)	9	3.27 (1.11)	12	3.19 (1.08)	12	3.77 (0.77)	11
7	How do the images enhance the message?	3.84 (0.73)	4	4.13 (0.56)	3	3.63 (0.89)	8	3.84 (0.69)	5	3.96 (0.75)	6
8	Is the author an expert in the field	3.9 (0.77)	3	4.13 (0.61)	2	3.67 (0.99)	7	3.9 (0.87)	4	4.14 (0.62)	1

9	Does the information agree with other sources	3.82 (0.72)	5	4.05 (0.64)	5	3.7 (0.88)	6	3.81 (0.65)	6	4.02 (0.71)	4
10	How is the information relevant to your research?	4.02 (0.65)	1	4.3 (0.52)	1	3.93 (0.78)	3	4.03 (0.71)	1	4.12 (0.61)	2
11	What bias the author appear to have in the information	3.67 (0.78)	8	3.9 (0.81)	8	3.43 (1.04)	10	3.77 (0.67)	8	3.94 (0.64)	7
12	In what way the information is balanced?	3.8 (0.73)	6	4.03 (0.62)	6	3.53 (0.86)	9	3.81 (0.7)	6	3.96 (0.62)	5

Rank is derived for each experience group based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that most of the ophthalmologists in experience group "Less than or equal to 5 years", "6 to 10 years", "16 to 20 years" prefer "How is the information relevant to your research". The ophthalmologists in the experience group "11 to 15 years" prefer "How is the information relevant to your research needs?". The ophthalmologists in the experience group "21 and above years" prefer "Is the author an expert in the field".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with experience groups. The mean ranks for the experience groups were Less than or equal to 5 years (298.46), 6 to 10 years (368.25), 11 to 15 years (287.95), 16 to 20 years (304.56), 21 and above years (373.43) respectively. The test showed that there exist a significant difference between ophthalmologists preference and experience groups ($\chi^2(2) = 19.944$, P-value=0.001).

The information evaluation preferences of ophthalmologists working in different institution types were analyzed further and ranks were assigned based on the mean and standard deviation. The mean, standard deviation, rank, and Kruskal-Wallis test results were shown in Table 6

TABLE 6: INFORMATION EVALUATION PREFERENCES Vs INSTITUTION TYPE

S.no	Description	Government		NGO		Corporate	
		Mean (SD)	Rank	Mean (SD)	Rank	Mean (SD)	Rank
1	Publisher organization of the information	3.61 (0.74)	11	3.7 (0.79)	10	3.55 (0.79)	10
2	Author's credentials	3.66	10	3.71	9	3.68	8

		(0.94)		(0.76)		(0.82)	
3	Does the information has author's contact information	3.24 (1.09)	12	3.37 (0.85)	12	3.25 (0.78)	12
4	How is the information relevant to your research needs?	4.12 (0.68)	2	3.95 (0.64)	2	4.01 (0.55)	2
5	Is the information presented have citations properly	3.78 (0.72)	7	3.78 (0.74)	7	3.84 (0.74)	7
6	Is the page layout / presentation style visually pleasing?	3.78 (1.01)	6	3.6 (0.82)	11	3.52 (0.9)	11
7	How do the images enhance the message?	4.07 (0.88)	3	3.84 (0.73)	5	3.94 (0.61)	4
8	Is the author an expert in the field	4 (0.84)	4	3.94 (0.74)	3	3.95 (0.86)	3
9	Does the information agree with other sources	3.76 (0.86)	8	3.87 (0.71)	4	3.94 (0.77)	4
10	How is the information relevant to your research?	4.17 (0.74)	1	4.04 (0.65)	1	4.1 (0.64)	1
11	What bias the author appear to have in the information	3.66 (1.04)	9	3.75 (0.75)	8	3.64 (0.76)	9
12	In what way the information is balanced?	3.9 (0.83)	5	3.82 (0.71)	6	3.87 (0.69)	6

Rank is derived for each institution type based on the mean and standard deviation of ophthalmologists' preferences. The ranks show up that the ophthalmologists in all the institution types "Government", "NGO", "Corporate" prefer "How is the information relevant to your research".

A Kruskal-Wallis H test was conducted to determine if ophthalmologists' preferences differ with institution type. The mean ranks for the institution types were Government (318.38), NGO (316.40), and Corporate (320.27) respectively. The test showed that there doesn't exist a significant difference between ophthalmologists preference and institution types ($\chi^2(2) = 0.33$, P-value=0.984).

Determining the major factors of ophthalmologists' Information evaluation behavior

Factor analysis with varimax rotation is used to determine the major factors of ophthalmologists' information evaluation behavior. The table 7 shows up the factor analysis results of the ophthalmologists' information evaluation behavior. The 12 items neatly loaded on 2 factors with a total of 55.345% variance and total Eigen value of 6.641. The criteria used for identifying the factors were based on the following criteria.

- a) Eigen value of factor is greater than one.
- b) Two or more items are loading in each factor.
- c) Factor loadings are greater than 0.5.

**TABLE 7: OPHTHALMOLOGISTS' INFORMATION EVALUATION BEHAVIOR:
FACTOR ANALYSIS RESULTS**

S.no	Items	Component	
		Factor 1	Factor 2
1	Publisher organization of the information	.166	.791
2	Author's credentials	.237	.772
3	Does the information has author's contact information	.163	.797
4	How is the information relevant to your research needs?	.663	.212
5	Is the information presented have citations properly	.449	.576
6	Is the page layout / presentation style visually pleasing?	.378	.533
7	How do the images enhance the message?	.557	.347
8	Is the author an expert in the field	.625	.373
9	Does the information agree with other sources	.626	.320
10	How is the information relevant to your research	.813	.001
11	What bias the author appear to have in the information	.616	.391
12	In what way the information is balanced?	.727	.228
	Eigenvalue	5.414	1.228
	Percentage of variance	45.113	10.232

Note: (N = 633) Factor 1 =Accuracy and reasonability; Factor 2 = Credibility and support

The factors are named as follows:

Factor 1- Accuracy and reasonability:

Seven items loaded on this factor having the highest Eigen value of 5.414 with 45.113% of variance. Loadings range from 0.557 and 0.813. This factor emphasis the ophthalmologists' information evaluation behavior related to accuracy and reliability. The items are:

1. How is the information relevant to your research needs?
2. How do the images enhance the message?
3. Is the author an expert in the field
4. Does the information agree with other sources
5. How is the information relevant to your research
6. What bias the author appear to have in the information
7. In what way the information is balanced?

Factor 2- Credibility and support:

Five items loaded on this factor having the Eigen value of 1.228 with 10.232% of variance. Loadings range from 0.533 and 0.797. This factor emphasis the ophthalmologists' information evaluation behavior related to credibility and support. The items are:

1. Publisher organization of the information

2. Author's credentials
3. Does the information has author's contact information
4. Is the information presented have citations properly
5. Is the page layout / presentation style visually pleasing?

The Wilcoxon signed ranks test was used to test the differences of the scores of the two information evaluation factors. Table 8 shows up the test results.

TABLE 8: OPHTHALMOLOGISTS' INFORMATION EVALUATION FACTORS: WILCOXON SIGNED RANK RESULTS

		N	Mean Rank	Sum of Ranks
Credibility and support – Accuracy and reasonability	Negative Ranks	372 (a)	270.86	100761.00
	Positive Ranks	112 (b)	148.29	16609.00
	Ties	149 (c)		
	Total	633		
Asymp. Sig. (2-tailed)	.000	Z	-13.670	
a. Credibility and support < Accuracy and reasonability b. Credibility and support > Accuracy and reasonability c. Credibility and support = Accuracy and reasonability				

Table 8 shows up that the accuracy and reasonability evaluation factor was significantly higher than the credibility and support factor ($Z=-13.670$; P value = 0.000).

7. CONCLUSION:

Around 633 ophthalmologists working in 47 academic eye hospitals from 16 states of India were included in the study. The study aims to determine the ophthalmologists' information evaluation behavior. The study results revealed that the majority of the ophthalmologists check how the information is relevant to their research. The statistical test results showed up that the ophthalmologists' evaluation preference differs by age group, designation, and experience. The two major factors of ophthalmologists' information evaluation behavior were identified as accuracy and reasonability, credibility and support. The accuracy and reasonability evaluation factor was significantly higher than the credibility and support factor.

In this information era, information evaluation became mandatory and necessary to satisfy the information needs. Information evaluation is a significant part in the higher order thinking. So the information literacy programs for ophthalmologists should provide the mandatory information evaluation skills. The ophthalmic librarians and ophthalmic institutions should take necessary steps to provide them.

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