



## Does Internet Literacy Regulate The Users' Online Databases Access Skills?

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### ABSTRACT

*The present study Centre upon the modern users' Online Databases access levels towards their awareness of Internet. Modern users' dependency of internet increases day by day as their requirements also come up in various aspects such as preparing lessons, assignments, research etc. The present study revolves around the modern users' Internet awareness levels and their Online Databases access pattern. The identified research questions in the present investigation are; does an Internet awareness levels differ among the users? ; do online database access skills differ among the users? ; does Internet literacy influence the users to upgrade their online databases access skills?*

**Keywords : Library; ICT; Internet; Awareness; Online Databases**

### Introduction

Information storage and retrieval is a complex process as we live in digital era. All of us are familiar with the term data. In fact, unknowingly we come across data in our day to day life every day. It is really a tough for the users to remember or recall everything as and when required. Databases offer the solution to these kinds of problems by the way of constructing the databases in which information could be organized and retrieved in a sophisticated way. New web based databases are using many innovations to render effective services to the modern users. In earlier days there were no such technological advancements in our country, where people struggled for gathering information, whatever it may be. In those days, we never imagine the existing electronic environment, which we have on our desk now-a-days. Libraries are importance locations, where those items are available for the benefit of society at the free of cost. Modern digital world brings everything to our circle as the users expectations are differ. The sources that are available in electronic format would come to our door steps now. Everyone is interested to gather information via sources, whether they are print or electronic format as users have their own rights to prefer the items. The associations between the users and their dependency of Internet have been traced in many studies. The global development of Internet features in digital libraries has generated changes in the pattern of library routines. Progressive development of Internet technology has affected the way of modern users in utilizing the electronic collections. Here, an attempt has been made to investigate modern users' Internet literacy and their online databases access skills.

### Objectives:

The objectives of this research were concerned with to measure the respondents' literacy levels of Internet; online databases access skills; the level of existing relationship between their Internet literacy and online databases access skills.

### Methodology:

The respondents were selected from the disciplines of Commerce, Economics, English and History belonging to the Faculty of Arts, Annamalai University located in Tamilnadu. In our experimental design the population range for said disciplines was traced as 250. Selecting sample is an important task in any research. Hence the standard method was applied to capture the required sample size. The samples were selected for evaluation as calculated using the expected error rate, desired precision range and confidence level. Based on the said attributes the required sample size was traced as 111.95, but study included 120 samples for further investigation. To fulfill the structured problem objectives a well structured questionnaire was structured and distributed to 150 users on the basis of stratified random sampling. Of them 120 filled in questionnaires were taken into the account of analysis. The collected data were carefully sorted and analyzed with the statistical procedure namely Kruskal-Wallis H Test, and Pearson's correlation. Required screen shots (See Annexure-i & ii) also have been generated for better capture.

### Hypotheses:

To fulfill the said objectives a few null hypotheses have been structured in the present study.

- H1-There would be no statistically significant differences among the respondents' Internet awareness.
- H2 -There would be no statistically significant differences among the respondents' Online databases access skills.
- H3-There would be no statistically significant linear relationship between the respondents' Internet literacy and their online databases access skills.

### Discussions:

Respondents' awareness levels of Internet could be observed from the Table 1. In Commerce discipline 57.50% of the users have adequate skills in Internet followed by 'Insufficient' (25.00%) and 'I can manage' (17.50%).

In Economics 56.67% of the respondents have adequate skills followed by 'Insufficient' (36.67%), and rest of the level has secured only 6.67%. The respondents from the branch 'English' have received the scores 52.50% (adequate), 30.00% (I can manage) and 17.50% (Insufficient) respectively. History branch has secured 40.0% for the option 'adequate', and rests of the options have received the equal score 30.00%. The observed points alone would never help the investigators to make the inferences about the population. Hence, a Kruskal-Wallis H Test (Table 1.1) has been executed to trace the significance among the medians of the variables. From the test results it is inferred that there would be no significance identified among the users' Internet literacy, and based on the enough evidences we can claim support to the formulated hypothesis 1 at the significance level of alpha 0.05%.

Table 1: Awareness of Internet

SUBJECT	Commerce	Economics	English	History	Total
Adequate	23	17	21	4	65
Tot%	19.2	14.2	17.5	3.3	54.2
Row%	35.4	26.2	32.3	6.2	
Col%	57.5	56.7	52.5	40	
I Can Manage	7	2	12	3	24
Tot%	5.8	1.7	10	2.5	20
Row%	29.2	8.3	50	12.5	
Col%	17.5	6.7	30	30	
Insufficient	10	11	7	3	31
Tot%	8.3	9.2	5.8	2.5	25.8
Row%	32.3	35.5	22.6	9.7	
Col%	25	36.7	17.5	30	
TOTAL	40	30	40	10	120
Tot%	33.3	25	33.3	8.3	100

Table 1.1: KRUSKAL-WALLIS H TEST RESULTS

SUBJ	T1	RANK	SUBJ	T2	RANK	SUBJ	T3	RANK	SUBJ	T4	RANK
1	23	12	1	17	10	1	21	11	1	4	4
2	7	5.5	2	2	1	2	12	9	2	3	2.5
3	10	7	3	11	8	3	7	5.5	3	3	2.5
SUM	40	24.5		30	19		40	25.5		10	9
MEAN		8.2			6.3			8.5			3
MED	10			11			12			3	
Z	0.92			-0.09			1.11				-1.94

H Stat= 4.3974; DF = 3; P (>H) = 0.2216; Critical Value= 7.8147 (T=Treatments 1-4)

No. of tied rank groups = 2; Statistic H uncorrected for ties = 4.3974

Correction for Ties = 0.9930; Statistic H corrected for ties = 4.4284

Table 2: Online Databases Access Skills

The branch wise respondents' online databases access skills could be observed from the Table 2. Concerning with the users access levels in commerce the highest score is traced for 'TSE' (40%) followed by 'TLE' (35%), and 'TFE' (25%). Economics discipline depicts the highest score for 'TLE' (53.3%) followed by 'TFE' (30%), and 'TSE' (16.7%). Of the total users from English discipline 42.5% falls in the option 'TSE', while rests of the users have secured 32.5% (TFE) ,and 25%(TLE) respectively. In History discipline 70% of the users access the source with the skills level 'TSE' followed by 'TFE' (20%), and 'TLE' (10%). The observed points alone would never help any investigators to make the inferences about the population. Hence, a Kruskal-Wallis H Test (Table 2.1) has been executed to trace the significance among the medians of the variables. From the test results it is inferred that there would not be a statistically significance identified among the users' online databases access skills, and based on the enough evidences we can claim support to the formulated hypothesis 2 at the significance level of alpha 0.05%.

SUBJECT	Commerce	Economics	English	History	Total
TFE	10	9	13	2	34
Tot%	8.3	7.5	10.8	1.7	28.3
Row%	29.4	26.5	38.2	5.9	
Col%	25	30	32.5	20	
TSE	16	5	17	7	45
Tot%	13.3	4.2	14.2	5.8	37.5
Row%	35.6	11.1	37.8	15.6	
Col%	40	16.7	42.5	70	
TLE	14	16	10	1	41
Tot%	11.7	13.3	8.3	0.8	34.2
Row%	34.1	39	24.4	2.4	
Col%	35	53.3	25	10	
TOTAL	40	30	40	10	120
Tot%	33.3	25	33.3	8.3	100

Table 2.1: KRUSKAL-WALLIS H TEST RESULTS:

SUBJ	T1	RANK	SUBJ	T2	RANK	SUBJ	T3	RANK	SUBJ	T4	RANK
1	10	6.5	1	9	5	1	13	8	1	2	2
2	16	10.5	2	5	3	2	17	12	2	7	4
3	14	9	3	16	10.5	3	10	6.5	3	1	1
SUM	40	26		30	18.5		40	26.5		10	7
MEAN		8.7			6.2			8.8			2.3
MED	14			9			13			2	
Z	1.20			-0.18			1.29				-2.31

H Stat= 6.372; DF = 3; P(>H) = 0.0949 ; Critical Value= 7.8147 (T=Treatments 1-4)

No. of tied rank groups = 2; Statistic H uncorrected for ties = 6.372

Correction for Ties = 0.9930; Statistic H corrected for ties = 6.418

Table 3: Correlation Matrix

	Adequate	I Can Manage	Insufficient	TFE	TSE	TLE
Adequate	1	0.592	0.785	0.935	0.680	0.832
I Can Manage	0.592	1	-0.020	0.725	0.921	0.077
Insufficient	0.785	-0.020	1	0.648	0.095	0.993
TFE	0.935	0.725	0.648	1	0.672	0.727
TSE	0.680	0.921	0.095	0.672	1	0.161
TLE	0.832	0.077	0.993	0.727	0.161	1

[TFE- To Full Extent/ TSE- To Some Extent/ TLE- To Little Extent]

Adequate vs TFE:

Cross Products [1][4]=664.0000, N Cases=4

Covariance [1][4]=37.1667, N Cases=4; Correlation [1][4]=0.9351, N Cases=4

tvalue with 2 degrees of freedom = 3.7307 with prob. >t=0.0649

X Mean= 16.2500, Variance= 72.9167, Standard Deviation= 8.5391

Y Mean= 8.5000, Variance= 21.6667, Standard Deviation= 4.6547

Adequate vs TSE:

Cross Products [1][5]=838.0000, N Cases=4

Covariance [1][5]=35.5833, N Cases=4; Correlation [1][5]=0.6797, N Cases=4

tvalue with 2 degrees of freedom = 1.3106 with prob. >t=0.3203

X Mean= 16.2500, Variance= 72.9167, Standard Deviation= 8.5391

Y Mean= 11.2500, Variance= 37.5833, Standard Deviation= 6.1305

Adequate vs TLE:

Cross Products [1][6]=808.0000, N Cases=4

Covariance [1][6]=47.2500, N Cases=4; Correlation [1][6]=0.8318, N Cases=4

tvalue with 2 degrees of freedom = 2.1195 with prob. >t=0.1682

X Mean= 16.2500, Variance= 72.9167, Standard Deviation= 8.5391

Y Mean= 10.2500, Variance= 44.2500, Standard Deviation= 6.6521

I Can Manage vs TFE:

Cross Products [2][4]=250.0000, N Cases=4

Covariance [2][4]= 15.3333, N Cases=4; Correlation [2][4]=0.7246, N Cases=4

tvalue with 2 degrees of freedom = 1.4870 with prob. >t=0.2754

X Mean= 6.0000, Variance= 20.6667, Standard Deviation= 4.5461

Y Mean= 8.5000, Variance= 21.6667, Standard Deviation= 4.6547

I Can Manage vs TSE:

Cross Products [2][5]=347.0000, N Cases=4  
 Covariance [2][6]=25.6667, N Cases=4; Correlation [2][5]=0.9210, N Cases=4  
 t value with 2 degrees of freedom= 3.3423 with prob. >t=0.0790  
 X Mean=6.0000, Variance=20.6667, Standard Deviation= 4.5461  
 Y Mean=11.2500, Variance=37.5833, Standard Deviation= 6.1305

I Can Manage vs TLE:

Cross Products [2][6]=253.0000, N Cases=4  
 Covariance [2][7]=2.3333, N Cases=4; Correlation [2][6]=0.0772, N Cases=4  
 t value with 2 degrees of freedom= 0.1094 with prob. >t=0.9228  
 X Mean=6.0000, Variance=20.6667, Standard Deviation= 4.5461  
 Y Mean=10.2500, Variance=44.2500, Standard Deviation= 6.6521

Insufficient vs TFE:

Cross Products [3][4]=296.0000, N Cases=4  
 Covariance [3][5]=10.8333, N Cases=4; Correlation [3][4]=0.6476, N Cases=4  
 t value with 2 degrees of freedom= 1.2019 with prob. >t=0.3524  
 X Mean=7.7500, Variance=12.9167, Standard Deviation= 3.5940  
 Y Mean=8.5000, Variance=21.6667, Standard Deviation= 4.6547

Insufficient vs TSE:

Cross Products [3][5]=355.0000, N Cases=4  
 Covariance [3][6]=2.0833, N Cases=4; Correlation [3][5]=0.0946, N Cases=4  
 t value with 2 degrees of freedom= 0.1343 with prob. >t=0.9054  
 X Mean=7.7500, Variance=12.9167, Standard Deviation= 3.5940  
 Y Mean=11.2500, Variance=37.5833, Standard Deviation= 6.1305

Insufficient vs TLE:

Cross Products [3][6]=389.0000, N Cases=4  
 Covariance [3][7]=23.7500, N Cases=4; Correlation [3][6]=0.9934, N Cases=4  
 t value with 2 degrees of freedom= 12.2644 with prob. >t=0.0066  
 X Mean=7.7500, Variance=12.9167, Standard Deviation= 3.5940  
 Y Mean=10.2500, Variance=44.2500, Standard Deviation= 6.6521

The above statistic results may be observed towards the given matrix for better understanding.

Table 3.1: t-test Values for prob. |corr| > 0 test

Variables	Adequate	I Can Manage	Insufficient	TFE	TSE	TLE
Adequate	0	1.04	1.791	3.731	1.311	2.119
I Can Manage	1.04	0	0.029	1.487	3.342	0.109
Insufficient	1.791	0.029	0	1.202	0.134	12.264
TFE	3.731	1.487	1.202	0	1.282	1.496
TSE	1.311	3.342	0.134	1.282	0	0.231
TLE	2.119	0.109	12.264	1.496	0.231	0

Table 3.1a: Probability of greater t

Variables	Adequate	I Can Manage	Insufficient	TFE	TSE	TLE
Adequate	0	0.408	0.215	0.065	0.32	0.168
I Can Manage	0.408	0	0.98	0.275	0.079	0.923
Insufficient	0.215	0.98	0	0.352	0.905	0.007
TFE	0.065	0.275	0.352	0	0.328	0.273
TSE	0.32	0.079	0.905	0.328	0	0.839
TLE	0.168	0.923	0.007	0.273	0.839	0

An evaluation was made of the linear relationship between the selected variables using Pearson's correlation coefficient (Tables 3-3.1a). Test result indicates positive relationship between the variables. A strong relationship is traced for the groups adequate and TFE; adequate and TLE; I can manage and TSE; Insufficient and TLE. However there would be no statistically significant linear relationship identified among the groups except for 'Insufficient and TLE'. Hence, we do not have enough statistical evidences to claim support to the alternative against the formulated hypothesis 3 except for 'Insufficient and TLE' at alpha level 0.05. Test results corroborate the same. The rendered screen shot plots the combinations of all variables against one another for better capture (See Annexure-i).

Determinations:

120 samples comprising the disciplines of Commerce, Economics, English and History have been taken for the study. The analysis for the attributes 'Internet awareness' reveal that majority of respondents have got adequate (mean=16.25, Std.Dev.=8.539) Internet literacy, whereas the rests of the users felt that they have insufficient knowledge of the Internet (mean=7.75, Std.Dev.=3.594) followed by the level 'I can manage', which has received the mean 6 with the Std.Dev.4.546. Kruskal-Wallis H test was applied to fulfill the research question ie. Does an Internet awareness levels differ among the users? The test results (H=4.3974, P (>H)=0.2216) made us to conclude that there would not be a possible significance exist between the users literacy levels. The sample medians for the four treatments were calculated 10, 11, 12 and 3. The z score for treatments 1 and 3 are positive (0.92, 1.11) while the rests of the levels 2 and 4 are negative (-0.09, -1.94). The test statistic had a H-value of 4.3974 & 4.4284, both uncorrected and corrected for ties, indicating that the null hypothesis 1 can't be rejected at alpha level 0.05%.

The analysis for users 'online databases access skills' reveal that majority of respondents have got skills in the level of 'TSE' (mean=11.2500, Std.Dev.=6.1305) followed by the level 'TLE' (mean=10.2500, Std.Dev.=6.6521) and 'TFE', which has received the mean 8.5000 with the Std.Dev.4.6547. Kruskal-Wallis H test was executed again to fulfill the research question ie. Do online database access skills differ among the users? The test results (H=6.372, P(>H)=0.0949) enabled us to conclude that there would not be a possible significance exist between the users' online databases access skills. The sample medians for the four treatments were calculated 14, 9, 13 and 2. The z score for treatments 1 and 3 are positive (1.20, 1.29) while the rests of the levels 2 and 4 are negative (-0.18, -2.31). The test statistic had a H-value of 6.372 & 6.418, both uncorrected and corrected for ties, indicating that the null hypothesis 2 can't be rejected at alpha level 0.05%.

Pearson's correlation coefficient tool was applied to fulfill the research question ie. Does Internet literacy influence the users to upgrade their online databases access skills? The consequences were explored towards the Tables 3-3.1a. Correlation Test results indicate the positive linear relationship between the variables Adequate and TFE r(2)=0.935, p=0.649; Adequate and TLE r(2)=0.832, p = 0.168; I can manage and TSE r(2)=0.921, p=0.079; Insufficient and TLE r(2)=0.993, p=0.007. Though some of the strong/weak and positive relationships were identified between the variables thorough out the study, the possible significance was not captured in between the levels of the variables except for 'Insufficient and TLE' at alpha level 0.05%. Hence, it is inferred that there would be a linear relationship exist between the users' internet literacy and their online databases access skills.

Figure 1: Internet Literacy Vs Online Database access skills

Figure 2: Branch wise Distribution-Mean Plot

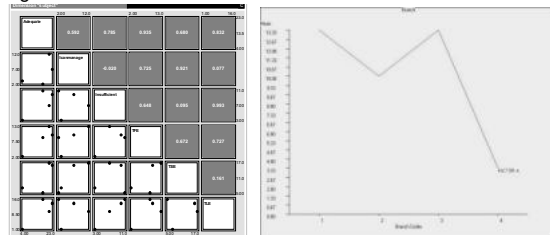
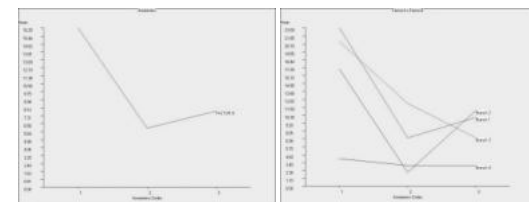


Figure 3: Internet Literacy Levels Distribution-Mean Plot

Figure 4: Branch Vs Internet Literacy Distribution-Mean Plot



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