DESIDOC Journal of Library & Information Technology, Vol. 42, No. 5, September 2022, pp. 288-294, DOI : 10.14429/djlit.42.5.18142

Use of Web-Based Resources Among the Social Sciences Faculty and Researchers in the Universities of Punjab and Chandigarh

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ABSTRACT

This study is focused to assess the awareness and use of web-based resources among the social sciences faculty and researchers of select three universities from Panjab and Chandigarh namely Punjabi University, Patiala, Panjab University, Chandigarh and Guru Nanak Dev University, Amritsar. A survey method was used to collect the primary data from the sample of 532 respondents including faculty and researchers from the total population of 1061 including 08 departments of Social Sciences in three universities. The proportionate random sampling method was used to select the sample. The data were collected through structured questionnaire and further analysed using SPSS. Chi-square test and mean based ranking was used to analyse the data. The study reveals that most of the social sciences faculty and researchers were aware and use web resources to some extent but, significant difference was found between them. The study concludes that the majority of the social sciences faculty and researchers are satisfied with web resources for their academic and research work.

Keywords: Internet; Awareness of web-based resources; Social sciences databases; Use and users

1. INTRODUCTION

Nowadays, the web has become a buzzword and is considered as a medium of accessing, publishing and disseminating information. In higher educational and research institutions, the web is being considered as a very important tool for all academic and research activities. All online resources, available on the web are called web-based resources. Such resources are also synonymously known with many names, i.e., networked resources, internet-based resources, online resources, etc. Web resources are of many types such as e-books, e-journals, online databases, e-these/dissertations, e-conference proceedings, e-research reports, e-reference sources, e-course materials, etc. Firdaus (2016, p.65)[1] defined a web resource as "a unit of information on the World Wide Web that has an identity and is identified by Uniform Resource Identifier (URI). Web-based resources are accessed and browsed using Hypertext Transfer Protocol (HTTP) and files are exchanged using File Transfer Protocol (FTP). Diversity of web resources is immense i.e., they are available on every conceivable topic".

The academic community often uses web-based resources and services for performing their academic and research tasks. Amajad, Ahmed & Naeem (2013)[2] acknowledged the dependency of researchers on web resources and the fact that there is a rapid increase in the use of electronic resources among the researchers as they have become very dependent on e-resources and adopted them as valuable tool in their academic tasks. The information requirements of library users are also changing as they prefer online resources on their desktops rather than depending merely on print resources. Therefore, almost all libraries especially in higher educational institutions like universities are transforming their conventional or print resources into online resources.

1.1 Need of the Study

In the 21st century, there has been a widespread use of web resources in the academic and research community, especially in higher educational institutions such as universities. Accordingly the libraries of these institutions are converting their collection from printed to web based or online resources and spending a large amount of money on them. Hence, the libraries of the universities of Punjab and Chandigarh are not an exception. Therefore, it is the need to assess the user's awareness, preferences, usage, barriers faced and satisfaction with web-based resources particularly in social sciences. The results of these studies may further help libraries in framing new plans and policies related to collection development, cost benefit analysis of different web resources being offered by the libraries to their users in academic environment.

2. LITERATURE REVIEW

The term 'use' was basically derived from the Latin word 'uti' that means to make use of and the term 'usage' is rooted in the word 'use'. The study of Hadagali (2007)[3] revealed that the majority of university faculty, researchers, and students are aware of electronic resources and use them for teaching and research purposes. Walmiki (2008)[4] confirmed that most of the academic staff uses electronic resources for writing research

Received : 04 May 2022, Revised : 05 September 2022
Accepted : 14 September 2022, Online published : 17 October 2022

Table 1. Population of the study

Department	Punjabi University, Patiala		Panjab University, Chandigarh		Guru Nanak Dev University, Amritsar		Total
	Faculty	Researchers	Faculty	Researchers	Faculty	Researchers	
History	09	27	10	30	04	08	88
Sociology	07	50	08	30	05	09	109
Political Science	10	28	07	20	04	06	75
Law	16	10	18	100	07	18	169
Economics	14	200	11	30	08	14	277
Psychology	15	93	06	30	05	13	162
Lib. & Inf. Sci	06	32	04	20	03	04	69
Education	04	22	8	45	05	28	112
Total	81	462	72	305	41	100	1061
	543 (51.17)		377 (35.53)		141 (13.28)		

papers followed by research, teaching and keeping themselves up-to-date in their subject fields. Lack of technical knowledge is a big obstacle in the way of using electronic information sources. Rao (2010)[5] found that the medical faculty and PG students are aware of the availability of web resources and use them mainly for teaching, learning, delivering lectures and publication work, etc. Dastforoush and Venkatesha (2011)[6] found in their study that the majority of the research scholars and PG students are aware of electronic resources and use them for research activities.

The study of Madhusudhan and Nagabhushanam (2012)[7] confirmed that various kinds of web-based library services are used by the users in the university libraries in Tamil Nadu. Das and Maharna (2013)[8] found in their study that most of the research scholars are aware of electronic information resources. Sivamani, Velvizhi, and Palanisamy (2013)[9] established that the majority of the research scholars use web-based information resources to accomplish their academic and research tasks. Bhatt and Mudhol (2014)[10] confirmed that the attitude of faculty and students is positive towards electronic resources and they are heavily dependent on these resources to update their subject knowledge. Kwafoa, *et al.* (2014)[11] found in their study that most of the faculty is highly dependent upon online electronic resources. Kaba (2015)[12] indicated that most of the faculty members possess good knowledge and perceptions about open access resources.

Karkun and Kumar (2015)[13] found the the majority of the faculty and research scholars prefer the resources in both print and electronic formats but the most of them use online electronic resources more as compared to print resources. Sudha and Kavitha (2015)[14] have found in their investigation that most of the research scholars and students are aware of web resources and use them. Sejane (2017)[15] observed in a study that e-mail and search engines are mostly used by the users in academic libraries followed by web-OPACs, electronic journals, full-text databases, institutional repositories, and electronic reference sources respectively. Ankrah and Atuase (2018)[16] found that most of the PG students prefer to access electronic information resources through Google Scholar and are dependent on the library professionals in accessing these resources. Poor internet connectivity is found as the major barrier in accessing electronic resources. Anyim (2021)[17] indicated that electronic resources are now very relevant for students in providing update and complete information from different sources as well as speedy and easy access to information.

3. OBJECTIVES OF THE STUDY

- To know about the awareness and use of web-based resources among the social sciences faculty and researchers;
- To find out the purposes of using web-based resources and their impact on them;
- To identify the barriers faced by them in using such resources;
- To analyse the level of satisfaction in the use of web-based resources.

4. METHODOLOGY

The population of the present study included the Social Sciences faculty and researchers of three universities namely Punjabi University, Patiala, Panjab University, Chandigarh and Guru Nanak Dev University, Amritsar. Structured questionnaire (Likert 4 point scale) was used for the collection of primary data from the respondents. The population of the study is shown in Table 1.

To assess the usage of web resources among the social sciences faculty and researchers of these universities, a sample of users including faculty and researchers was taken from 08 departments of Social Sciences of these three universities, selected as per ICSSR (Indian Council of Social Science Research) and their equal distribution in these universities under study.

The total numbers of faculty members were 194 (18.28 %); total numbers of researchers were 867 (81.71 %) and the total population of the selected departments of Social Sciences from three universities was 1061 only. The sample size has been calculated using Solvin's formula where sample size (n) is given by:

$$n = \frac{N}{1 + Ne^2}$$

where, n= sample size, N= population size, e = the margin of error (0.05).

Table 2. Proportionate stratified random sampling

Respondents from the three university	Total population N (%)	Minimum stratified sample size required sample of total population=N	Minimum required sample=N	Total sample used for study N (%)
Researchers	867 (81.72)	290.48*867/1061=237.36	237.36	422 (39.77)
Faculty	194 (18.28)	290.48*194/1061=53.11	53.11	110 (10.37)
Total	1061 (100)	290.48(27.38%)*	290.48	532 (50.14)

*Using Solvin's Formula

$$n = \frac{1061}{1+1061(0.05)^2}$$

$$= \frac{1061}{3.6525} = 290.48$$

Proposed sample size is 290.48 respondents from the total population of 1061. A proportionate random stratified sampling has been employed as presented in Table 2. In this study, however, data were collected from 110 faculty members (20.7 % of 532) and 435 researchers (79.3 % of 532) for a total of 532 responses. As a result, the sample represents 532 (50.14 %) of the total population (1061) was taken.

5. DATA ANALYSIS

Data analysis was done using statistical techniques by SPSS. Scale Statistics**,** Pearson Chi-square test and mean-based ranking were applied to find the difference between the social sciences faculty and researchers related to their use of web resources.

5.1 Awareness of Web-based Resources

The researchers and faculty were asked to know how much they are aware of Web-based Resources. The results of the analysis are shown in Table 3.

Table 3 shows the percentage of awareness among researchers sample (422) as: Not at All (0 %); To A Little Extent (42.65 %); To Some Extent (49.76 %) and To A Great Extent (7.59 %). However, the responses among faculty population of 110 as: Not at All (0 %); To A Little Extent (45.45 %); To Some Extent (49.09 %) and To A Great Extent (5.45 %).

The comparing the analysis of respondents from the total sample of survey i.e., 532(100) shows that 49.7% of the respondents were having the 'awareness of web-based resources' to some extent' followed by 43.2% of them who were having the awareness 'to a little extent' and only 7.1% of the respondents were aware 'to a great extent'. Thus, the maximum respondents were aware about web-based resources and services 'to some extent'. The Chi-square (χ^2) value of 167.474, the degree of freedom (df) =2, and the level of significance (p-value) =0.000. It reveals that the level of significance is less than 0.05 which means that there was a significant difference regarding the 'level of awareness about web-based information resources' between the social sciences faculty and the researchers. It has been discussed with the respondents regarding the reasons for the difference in responses. The discussion revealed that researchers learn through multiple sources more as compared to faculty resulting difference in responses. Also, researchers are involved in more research related learning techniques and faculty finds less time due to their busy teaching schedule.

5.2 Use of Web Resources

The researchers and faculty were asked about how much they use of web resources. The analysis of the data is presented in Table 4.

Table 4. Use of web resources

Rating	Respondents		Total N (%)	Chi-Square χ^2 (df; C)
	Researchers N (%)	Faculty N (%)		
Not at all	0 (0.0)	0 (0.0)	0 (0.0)	
To a little extent	173 (41.99)	52 (47.27)	225 (42.3)	
To some extent	212 (50.23)	52 (47.27)	264 (49.6)	156.929 (2; 0.000)
To a great extent	37 (8.77)	6 (5.46)	43 (8.1)	
Total (%)	422 (100)	110 (100)	532 (100)	

Table 3. Awareness of web resources

Rating	Respondents		Total N(%)	Chi-Square χ^2 (df; C)
	Researchers N(%)	Faculty N(%)		
Not at all	0 (0)	0 (0)	(0)	
To a little extent	180 (42.65)	50 (45.45)	230 (43.2)	167.474 (2; 0.000)
To some extent	210 (49.76)	54 (49.09)	264 (49.7)	
To a great extent	32 (7.59)	6 (5.45)	38 (7.1)	
Total (%)	422 (100)	110 (100)	532 (100)	

Statistical significant difference among researchers and faculty

The results (Table 4) show the percentage among researchers sample (422) as: Not at All (0 %); To A Little Extent (41.99 %); To Some Extent (50.23 %) and To A Great Extent (8.77 %). However, the responses from the faculty sample (110) as: Not at All (0 %); To A Little Extent (47.27 %); To Some Extent (47.27 %) and To A Great Extent (5.46 %). The results from the total sample i.e., 532(100) have disclosed that most of the respondents (49.6 %) used web resources 'to some extent' followed by 42.3 per cent of them used them 'to a little extent' and just 8.1 per cent of them took the advantage of such resources 'to a great extent'. Thus, it is pertinent to say that the majority of the respondents were using such resources 'to some extent'.

The Chi-square analysis has produced statistical significant results at 0.05 per cent level of significance (χ^2=156.929, p-value=0.000<0.05) regarding the overall use of web resources by the respondents. So, it has proved that there was a statistical significant difference between the social sciences faculty and the researchers about the overall usage of web resources.

5.3 Use of Different Web Resources

The analysis of the 'Preference given by the respondents for use of different web resources ('rank- wise') is described in Table 5.

The mean-based ranking (Table 5) shows that 1st rank is given to 'E-journals' having been used by the majority of the respondents followed by 'Online Databases' (2nd), Online 'E-theses or dissertations' (3rd), 'Online Reference Sources' (4th), Online E-conference Papers' (5th),'Online E-books' (6th), 'Online- tutorials' (7th), 'Online E-prints' (8th), and 'Online E-newsletters (9th) 'respectively.

Table 5. Use of different web resources

Web resource	Mean	Std. deviation	Mean-based ranking	N
E-journals	3.5639	0.53296	1	532
E- books	1.9925	0.64945	6	532
E-theses/ dissertations	2.7444	0.54416	3	532
Online tutorials	1.7143	0.66747	7	532
Online reference sources	2.2180	0.55355	4	532
E-conference papers	2.0752	0.67368	5	532
E-prints/ pre-prints	1.3947	0.58722	8	532
Online E-newsletters	1.2744	0.46321	9	532
Online databases	3.0639	0.58194	2	532

Scale Statistics (Cronbach's Alpha=0.763; Mean=28.35, Variance=15.659,Std. Deviation=3.95708, N of Items=13), 4 point scale

5.4 Use of Social Sciences Databases

The responses of the respondents related to the preference given for the use of different Social Sciences databases were analysed. The mean-based ranking on total sample of 532 is shown in Table 6.

Table 6. Use of social sciences databases

Database	Mean	Std. deviation	Mean-based ranking	N
ICSSR Data Service	1.7180	0.45037	2	532
SSRN (Social science Research Network)	1.4398	0.49684	3	532
Social Sciences Citation Index	1.7594	0.42785	1	532
UNESCO's Social Sciences Database	1.3008	0.45902	4	532

Scale Statistics (Cronbach's Alph=0. 448; Mean=6.218, Variance=1.271,Std. Deviation=1.12722, N of Items=4)

It is revealed from Table 6 that the majority of the respondents used and ranked first to 'Social Sciences Citation Index' followed by 'ICSSR Data Service', 'SSRN (Social Science Research Network)' and 'UNESCO's Social Sciences Database' respectively.

5.5 Purposes of Using Web-based Resources

The analysis of the responses related to the preferences given by the respondents to the purposes for which they used web resources is presented in Table 7.

The means-based ranking as given in Table 7 indicates that the majority of the respondents used web resources for the purpose of 'Research Work' and gave 1st rank to this followed by (2nd) for 'Writing Research Papers/Article', (3rd) to Professional Competency/Updating Subject knowledge' and (4th) for 'Teaching and Learning'respectively.

Table 7. Purposes of using web resources

Purpose	Mean	Std. Deviation	Mean-based ranking	N
Teaching and learning	2.1541	0.63388	4	532
Research work	3.4436	0.61265	1	532
Professional competency/ updating subject knowledge	2.2970	0.55417	3	532
Writing articles/ research papers	2.9060	0.64557	2	532

Scale Statistics (Cronbach's Alph=0.485; Mean= 10.8008, Variance= 2.359,Std. Deviation=1.53606, N of Items=04), 4 point scale

5.6 Impact of Using Web-based Resources

The analysis of responses given by the social sciences faculty and researchers related to the impact of using the web resources had on their academic and research activities is displayed in Table 8.

On the basis of analysis, mean-based ranking on total sample of 532 as shown in Table 8, the ranking of different kinds of the impact of using web resources on the respondents,1st rank is given to 'Expedited their Research Process' followed by 'Decreased their Use of Printed Resources' (2nd), 'Decreased their Physical Use of Libraries'(3rd), 'Improved their Scholarly

Table 8. Impact of using web resources

Impact	Mean	Std. deviation	Mean-based ranking	N
Expedited the research process	3.2199	0.65422	1	532
Improved teaching and learning	2.3252	0.62699	7	532
Improved scholarly communication	2.6259	0.62370	4	532
Improved professional competency	2.4492	0.61621	6	532
Improved peer networking	2.5357	0.61421	5	532
Decreased the use of printed resources	2.9342	0.60241	2	532
Decreased the physical use of libraries	2.7199	0.61566	3	532

Scale Statistics (Cronbach's Alpha=0.665; Mean= 18.8102, Variance= 6.297,Std. Deviation= 2.50943, N of Items=07), 4 point scale

Communication' (4th), 'Improved their Peer Networking' (5th), 'Improved their Professional Competency'(6th) and 'Improved their Teaching and Learning' (7th) respectively.

5.7 Barriers in Using Web Resources

The mean-based ranking on the total sample (532) was analysis related to the different barriers, faced by the respondents in accessing and using web resources is presented in Table 9**.**

It is revealed from the means as shown in Table 9, that 'Poor Internet Connectivity' was found as the biggest barrier, faced by the respondents in accessing and using web resources followed by 'Lack of Digital Literacy Skills', 'High Subscription Cost', 'Lack of Awareness', 'Lack of Technical Assistance', 'Lack of Time', 'Difficulty in Reading from the Screen' and 'Lack of Devices/ICT Infrastructure' respectively.

Table 9. Barriers in using web-based resources

Barriers	Mean	Std. deviation	Mean-based ranking	N
Poor internet connectivity	3.2519	0.60171	1	532
High subscription cost	2.7519	0.60014	3	532
Lack of digital literacy skills	2.8609	0.69935	2	532
Lack of technical assistance	2.1241	0.55881	5	532
Lack of Devices/ICT infrastructure	1.5789	0.64027	8	532
Difficulty in reading from the screen	1.6692	0.81624	7	532
Lack of awareness	2.6955	0.72183	4	532
Lack of time	1.7782	0.74134	6	532

Scale Statistics (Cronbach's Alpha=0.440 N=8; Mean=18.7105; Variance=5.961;Std. Deviation=2.442), 4 point scale

5.8 Level of Satisfaction with Web Resources

The mean-based analysis on the total sample (532) to know the satisfaction level of the social sciences faculty and researchers with the use of web resources is given in Table 10.

It is shown from Table 10 that the majority of researchers i.e., 228 (54.02) are satisfied with "Web-based Resources" as compared to the faculty 64 (58.18). However, from the total sample of respondents (532) the majority of the respondents 292 (54.9) were 'satisfied' with "Web-based Resources". On the other hand the majority of the researchers 172(40.75 %) were highly satisfied with web resources as compared to the faculty 18(16.36 %). However, 190 (35.7 %) of the whole respondents were 'highly satisfied' with "Web-based Resources" while only 50 (9.4 %) of the whole respondents were 'Slightly Satisfied '. The Chi-square test has presented statistically significant results related to web resources (χ^2=258.782, df=2, p-value=0.000<0.05). It shows that there was a significant difference between the social science faculty and the researchers related to their levels of satisfaction with the use of web resources.

6. FINDINGS AND SUGGESTIONS

- The study has found that the majority of the social sciences faculty and researchers were aware of web resources and used them only 'to some extent'. The university libraries need to initiate some awareness programme for them to increase their awareness and use of these resources.
- There was a significant difference between the social sciences faculty and the researchers about their overall usage of web resources. The researchers used web resources more as compared to the faculty members. So, the university libraries are required to hold some capacity building programmes to fill this gap.
- E-journals were the most used web resource, followed by online databases, e-theses/dissertations, online reference sources, e-conference papers, e-books, online tutorials, e-prints/pre-prints and online newsletters respectively.
- Social Sciences Citation Index was the most used Social Sciences web resource followed by ICSSR Data Service, SSRN (Social Science Research Network) and UNESCO's Social Sciences Database etc. respectively.
- Web resources were primarily used by the respondents for their research work followed by writing articles/research papers, professional competency/updating subject knowledge and teaching and learning.
- Poor internet connectivity was the major barrier faced by the majority of respondents in accessing and using web resources followed by lack of digital literacy skills, high subscription cost, lack of awareness, lack of technical assistance, lack of time, difficulty in reading from the screen and lack of devices/ICT infrastructure. The

Table 10. Level of satisfaction with web resources

Level of satisfaction	Rating	Respondents		Total N (%)	Chi-Square χ^2 (df; C)
		Researchers N (%)	Faculty N (%)		
Web-based resources	Not at all satisfied	0 (0.0)	0 (0.0)	0 (0.0)	258.782 (2; 0.000)
	Slightly satisfied	22 (5.21)	28 (25.45)	50 (9.4)	
	Satisfied	228 (54.02)	64 (58.18)	292 (54.9)	
	Highly satisfied	172 (40.75)	18 (16.36)	190 (35.7)	
	Total	422 (100)	110 (100)	532 (100)	

Statistical significant difference among researchers and faculty

university libraries must take appropriate measures to remove these obstacles by improving the speed of internet, conducting digital literacy programmes, providing all technical support etc.

- The majority of the respondents (54.9 %) were found 'satisfied' with "Web Resources" followed by those (35.7 %) who were 'highly satisfied' with "Web-based Resources" while only 9.4% of the respondents were 'slightly satisfied'. Moreover, there was a significant difference between the social sciences researchers and the faculty in their levels of satisfaction with these resources. In order to increase their satisfaction level, the university libraries need to increase the availability and accessibility of these resources according to their specific needs.

7. CONCLUSION

Thus, this study has established that the awareness and use of web resources among the social sciences faculty and researchers in the university libraries under study is increasing but they are yet to utilise these resources to their full potential. Here, the library professionals have a crucial role to play. They need to take all essential measures to provide the faculty and the researchers an easy access to a wide range of networked resources as per their specific information needs along with all technical and infrastructural support. Further, some intensive studies can be pursued on the use of web-based resources and services by focusing on co-relation between use, awareness and satisfaction in different disciplines of Social Sciences.

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