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THE ELECTRONIC INFORMATION USE BEHAVIOUR OF GENERAL AND TECHNICAL EDUCATION FACULTY MEMBERS IN PUDUCHERRY REGION: A STUDY

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ABSTRACT

This study aims at analysing the utilization of electronic information resources by the faculty members of General and Technical Education in Puducherry region, and also examines the quantum and duration of time utilization in search of information through electronic resources. This study covers place, purpose and frequency of access to electronic resources through e- learning process. The study analysis respondents' problemsin using electronic information and importance of different sources of information could be accessed.

KEYWORDS: Electronic Information Search, e- Resources

INTRODUCTION

Printed information sources have been in use for centuries unlike electronic resources, which are of recent history. According to Rubin (2000) , "print materials have been around since the invention of written languages and paper" and this has led to the development of the printing press "in Germany in the mid-1400s". Thus, over the centuries, print materials have been the major sources of information available, accessible and used for research in universities. But, with the advent of information and communication technology (ICT), and electronic publishing, information that was available only in print materials relating to books, journals, theses and dissertations are now available in electronic format. By definition, electronic information resources or simply electronic resources (e-resources) are information stored in electronic format in computer or computer related facilities (CD-ROMs, flash drives, digital libraries or the Internet). Thus, Haridasan and Khan (2009) defined electronic information resources as "resources in which information is stored electronically and which are accessible through electronic systems and networks". This is consistent with the description of electronic information resource as a generic term "for electronic information stored both offline or online". Electronic resources are now used to supplement printed information. Ellis and Oldman (2005) opined that electronic information resource "is more of a tool to assist in conducting research, a way of scanning a lot of materials quickly".

The act of providing access to electronic resources by the university library to the patrons is referred to as electronic information services. Appleton (2006) defined electronic information services as delivery of information tools/products to "requesting users electronically" usually by computer mediation. In view of the potential advantages and benefits of e-resources over the print in modern electronic information environment, accessibility and utilization of e-resources is fast becoming a norm in research in the universities around the world. Hence, "access to electronically stored information in computers has been increasing regularly" in the universities to aid academic staff in their research. As per the report by different types of electronic resources include: e-journals, e-books, online databases, e-theses/e-dissertations, electronic conference proceedings, electronic technical reports, electronic reference documents, CD-ROM databases are

also available. Thus, electronic resources promote efficiency in dissemination of information for research purposes in the universities, further e-resources are more easily updated than the print resources.

Review of Literature

Khan and Dominic (2012) , the use of the Internet is vital in research in every university. They conducted a survey to assess the extent of Internet use by academic staff in Engineering Colleges of Moradabad, India. The findings of the study revealed increasing use of the Internet in research by the respondents.

Kumar and Ansari (2012) revealed daily use of electronic journals by majority of the academic staff in their research at the Chaudhary Charan Singh University, India. Mahmood, Hartley and Rowley (2011)affirmed the importance of access to information to facilitate and support efficient and productive research. ICTs and electronic resources are sources of information in modern electronic information environment. Notably and relatively, ICTs and electronic resources provide quick access to information than the conventional print resources.

Rubagiza, and Sutherland (2011) affirmed the need to address the gender difference in the use of ICT in Rwanda. According to these studies, boy students are better exposed to ICT than the girls, especially during "out-of-school use of ICT", where the girls are confined at homes, while the boys have relative freedom to go out to the Internet cybercafé. This explains why boys are apparently more skilled users of ICT in Rwanda than girls, and thus dominate ICT use. The implication of these finding is that this trend will continue to higher education or post education level where males will continue to dominate females in ICT use in academic and professional use. Shelton (2011) conducted a study on the use of ICT facilities by academic staff in the UK universities has shown that 87% of the respondents are using ICTs and e-resources in their academic and research activities. However, the paper concluded that, access and use of ICTs by academic staff in the universities is influenced by divergence in cultures and contexts of research. Park (2010) opinioned that the younger people learn about technology easily and found that younger people use the social network site (SNS) more than the older ones. From the literature, the trend in access and use of e-resources is reportedly decreasing with age of the academic staff.

Objectives

In order to pursue this study, the following objectives are framed, in accordance with the scope of this investigation:

- To analyse the respondents' placeof accessing e-resources in the selected technical and general education institutions in Pondicherry region.

- To identify the respondents' frequency and duration of seeking electronic resources information for their academic purpose.

- To find out the respondents' purpose of using electronic resources and importance of using electronic resources.

Hypotheses

- The following hypotheses are formulated on the basis of content and coverage of framed objectives and they are tested by employing appropriate statistical tools:

- There is a significant inter institution difference with respective to respondents' duration and quantum of time utilization in search of information through e- resources in the selected technical and general education

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institutions in Puducherry region.

- There is a significant difference between occupation and Gender status of respondents and their frequency and duration of seeking electronic resources information for their academic purpose.

Sampling

Pondicherry has 16 Engineering colleges out of which four Engineering Colleges have been selected for the purpose of present study vizAchariya College of Engineering & Technology, and Christ College of Engineering and Technology, Pondicherry Engineering College, Rajiv Gandhi College of Engineering and Technology and Pondicherry has 8 Medical colleges and out of them 4 colleges are selected viz Pondicherry Institute of Medical Sciences and Mahatma Gandhi Medical College and Research Institute, Sri Manakula Vinayagar Medical College & Hospital, Sri Venkateswaraa Medical College & Hospital , further Pondicherry has 17 Arts & Science Colleges and out of them 8 colleges are selected viz. Arignar Anna Arts College, KanchiMamunivar Centre for Post Graduate Studies, Kasthurba College for Women, Idhaya College of Arts and Science for Women, Indira Gandhi College of Arts & Science, Tagore Arts College, Bharathidasan Government College for women and Mahatma Gandhi Government Arts College. Thus totally 16 colleges are selected for the purpose of present study. From each institution 25 faculty members are selected. In total 400 respondents are selected under simple random sampling method.

DATA COLLECTIONS

The researcher has employed a well structured questionnaire for collecting the data from the respondents of Achariya College of Engineering & Technology, and Christ College of Engineering and Technology, Pondicherry Engineering College and Rajiv Gandhi College of Engineering and Technology, Medical colleges viz Pondicherry Institute of Medical Sciences, Mahatma Gandhi Medical College and Research Institute, Sri ManakulaVinayagar Medical College & Hospital and Sri Venkateswaraa Medical College & Hospital, further from Arts & Science Colleges VizArignar Anna Arts College, KanchiMamunivar Centre for Post Graduate Studies, Kasthurba College for Women, Idhaya College of Arts and Science for Women, Indira Gandhi College of Arts & Science, Tagore Arts College, Bharathidasan Government College for women and Mahatma Gandhi Government Arts College.

The researcher had sent questionnaires to all the faculty of 16 colleges selected. The questionnaire has been designed to elicit background information of the respondents, duration and quantum of library use, nature and type of information required, frequency and relevant of seeking electronic information, priority purpose of seeking information, satisfaction and difficulties in using electronic information. The questionnaire has been prepared in such a way that the respondents could easily understand them. The questionnaires are distributed to the respondents.

Data Analysis

The collected data are classified and tabulated according to the objectives and hypotheses stated. First, the data are recorded on data sheets and then fed in to the computer personally. In order to test the hypotheses, the chi-square test and anova two way model have been applied. The chi-square values are worked out with the help of SX package, and anova two way model is worked out with the help of Excel Package. The general data interpretation is made with the help of percentages and averages.

Table 1: Socio Economic Characteristics of Respondents

Gender	Number of Respondents	Percentage
Male	264	66
Female	136	34
Total	**400**	**100**
Length of Service	**Number of Respondents**	**Percentage**
Below 10 years	100	25
10- 15 years	100	25
15-50 years	100	25
20-25 years	100	25
Total	**400**	**100**
Education Wise	**Number of Respondents**	**Percentage**
Post Graduate Degree	86	21.50
M.Phil Degree	110	27.50
Doctorate Degree	204	51.00
Total	**400**	**100**
Faculty Wise	**Number of Respondents**	**Percentage**
Arts	76	19.00
Science	112	28.00
Engineering &Technology	126	31.50
Medicine	86	21.50
Total	**400**	**100**

Table 1 presents data on the socio economic status of the respondents. It could be noted that out of the total 400 respondents 66 per cent of them are males and the rest 34 per cent of them are females. In this study, 25 per cent of them belong to the below 10 years of length of service group. A similar proportion of respondents with length of service 10 - 15 years, 15 – 20 years and 20-25 years has been represented in the study. In this study 21.50 per cent of the respondents have post graduate level education, 27.50 per cent of them have M.Phil degree level education and the rest 51.50 per cent of them have doctorate degree level education. It could be noted that out of the total 400 respondents 19 per cent of them belong to the arts faculty, 28 per cent of them belong to the science faculty 31.50 per cent of them come under the engineering technology faculty and the rest 21.50 per cent of them belong to the medical faculty.

Table 2: Institution Wise Respondents' Place of Accessing E-Resources

Institution	College Library and Department Library	College Library and University Library	Internet Cafe	Personal Computer	Personal Computer and Department Library	Total
Technical educational institutions	22 (11.00)	32 (16.00)	42 (21.00)	64 (32.00)	40 (20.00)	200
General educational institutions	64 (32.00)	36 (18.00)	18 (9.00)	46 (23.00)	36 (18.00)	200
Total	**86 (21.50)**	**68 (17.00)**	**60 (15.00)**	**110 (27.50)**	**76 (19.00**	**400**

Chi Square Summary Results

Chi Square Calculated Value	Degrees of Freedom	Chi Square Table Value At 5%
35.50	4	9.49

Table 2 presents data on the institution wise respondents' place of accessing E- resources. It could be noted that out of the total 400 respondents' 21.50 per cent of them make use of college library and department library towards accessing E-resources, 17 per cent of them access the E-resources in college library and university library and 15 per cent of them make use of internet cafe towards accessing E-resources. In this study 27.50 per cent of the respondents' collect the E-resources with the help of their personal computer and the rest of 19 per cent of them access the E-resources through their personal computer as well department library computer system. The faculty members of general educational institutions occupy the first position (32%) towards accessing E-resources in their college library as well as department library. majority of the faculty members of technical educational institutions access the E-resources through their personal computer along with computer system in their department library.

The chi-square test is applied for further discussion. The compared chi-square value 35.50 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant association between institutional status of the respondents' and their place of accessing electronic resources.

It could be seen clearly from the above discussion that the acquiring electronic resources through personal computer ranks the first position as per the reporting of the respondents' accessing E-resources from college library and department library the second, accessing E-resources from the personal computer and department library the third, accessing E-resources from the college library and university library the fourth and accessing E-resources from the internet café the last.

Table 3: Education Wise Respondents' Place of Accessing E-Resources

Level of Education	College Library and Department Library	College Library and University Library	Internet Cafe	Personal Computer	Personal Computer and Department	Total
Post graduate degree	30 (34.88)	12 (13.95)	14 (16.28)	14 (16.28)	16 (18.60)	86
M. Phil degree	14 (12.73)	24 (21.82)	16 (14.55)	28 (25.45)	28 (25.45)	110
Ph. D degree	42 (20.59)	36 (15.69)	30 (14.71)	68 (33.33)	32 (15.69)	204
Total	**86 (21.50)**	**68 (17.00)**	**60 (15.00)**	**110 (27.50)**	**76 (19.00)**	**400**

Chi Square Summary Results

Chi square calculated Value	Degrees of Freedom	Chi square Table Value at 5%
23.34	4	9.49

Table 3 presents data on the education wise respondents' place of accessing E-resources. It could be noted that majority of the post graduate level educated respondents' (34.88%) make use of college library and department library towards acquiring E resources. it could be observed that a half of the M. Phil degree level educated respondents' and Ph.D degree level educated respondents' access the E-resource in their personal computer as well as computer as well as computer system in their department library. The chi-square test is applied for further discussion. The compared chi-square value 2.34 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant association between educational status of the respondents' and their place of accessing electronic resources.

It could be seen clearly from the above discussion that post graduate level educated faculty members mainly access the E-resources in their college library and department library.

Table 4: Length of Service Wise Respondents' Place of Accessing E-Resources

Length of Service in Years	College Library and Department Library	College Library and University Library	Internet Cafe	Personal Computer	Personal Computer and Department Library	Total
Below 10 years	26 (26.00)	16 (16.00)	10 (10.00)	24 (24.00)	24 (24.0)	100
10-15 years	24 (24.00)	14 (14.00)	12 (12.00)	28 (28.00)	22 (22.00)	100
15-20 years	16 (16.00)	20 (20.00)	26 (26.00)	24 (24.00)	14 (14.00)	100
20-25 years	20 (20.00)	18 (18.00)	12 (12.00)	34 (34.00)	16 (16.00)	100
Total	**86 (21.50)**	**68 (17.00)**	**60 (15.00)**	**110 (27.50)**	**76 (19.00)**	**100**

Chi Square Summary Result

Chi Square Calculated Value	Degrees of Freedom	Chi Square Table Value At 5%
20.87	12	21.0

Table 4 presents data on the length of service wise respondents' place of accessing E-resources. The respondents' with below 10 years of service (26%) rank the first position towards acquiring E-resources in their college library and department library. The respondents' with length of service in the range of 15-20 years occupy the position (26%) towards accessing E-resources. The respondents' with length of service in the range of 10-15 years (28%) and length of service in the range of 20-25 years (34%) make use of their personal computer towards getting E-resources. The chi-square test is applied for further discussion. The compared chi-square value 20.87 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant association between length of service status of the respondents' and their place of accessing electronic resources.

It could be seen clearly from the above discussion that respondents with 20-25 years length of service mainly make use of personal computer towards accessing E-resource.

Table 5: Gender Wise Respondents' Place of Accessing E-Resources

Gender	College Library and Department Library	College Library and University Library	Internet Cafe	Personal Computer	Personal Computer and Department Library	Total
Male	62 (23.48)	16 (6.06)	40 (15.15)	94 (35.61)	52 (19.70)	**264**
Female	24 (17.65)	52 (38.24)	20 (14.71)	16 (11.76)	24 (17.65)	**136**
Total	**86 (21.50)**	**68 (17.00)**	**60 (15.00)**	**110 (27.50)**	**76 (19.00)**	**400**

Chi Square Summary Results

Chi Square Calculated Value	Degrees of Freedom	Chi Square Table Value At 5%
74.85	4	9.49

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A study data in table 6 indicates the Gender wise respondents' place of accessing E-resources. It could be note that male respondents occupy the first position (35.61%) is accessing E-resources through their personal computer. The female respondents' holds the first position (38.24%) to make use of department library and university library towards accessing E-resources.

The chi-square test is applied for further discussion. The compared chi-square value 74.85 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant association between sex status of the respondents' and their place of accessing electronic resources.

It could be seen clearly from the above discussion that the female respondents' lag behind the male respondents' in accessing E-resources through their personal computer.

Table 6: Gender Wise Respondents' Purpose of Using Electronic Resource

Variables	Male	Female	Mean
Collecting research information	3.74	3.54	3.64
Downloading software	3.11	3.10	3.11
Research data collection	2.84	2.45	2.65
Question paper setting	3.44	3.28	3.36
Entertainment purpose	3.40	3.31	3.40
Make stimulation	3.85	3.65	3.75
Make animations	3.24	3.04	3.14
Seeking URL disciplinary topics	3.68	3.52	3.60
Personal online diaries	2.68	2.48	2.58
Online archived class discussions	3.21	2.93	3.07
Using electronic; films and videos	3.50	3.12	3.31
Power point preparation	2.68	2.36	2.52
Online reference resources	3.75	3.64	3.70
Downloading government documents	2.54	2.40	2.47
Getting images and visual materials or drawings and photography	3.19	2.75	2.97
UNO documents	3.42	3.12	3.27
Tele connectivity	3.58	3.5	3.54
Sending and receiving information	2.82	2.64	2.73
E-journal reference	3.54	3.38	3.46
E-documents	3.10	2.92	3.01
Subject related websites	3.36	3.1	3.23
Online journal publications	3.03	2.83	2.93
Career information	2.78	2.98	2.88
Online submission of research proposals	3.45	3.55	3.50
Advertisement about research proposals and down loading applications	3.34	3.02	3.19
Research abstracts data base	3.30	3.02	3.16
Lecture hand outs	2.42	2.15	2.29
Online library source	2.48	2.35	2.42
Information about online course	2.42	2.31	2.37
Average	3.21	2.97	3.08

T Stat=7.39, Df 28 T Critical= 1.70

Table 41 presents data on the Gender wise respondents' purposes of using electronic resources compared to traditional sources. The male respondents rank the first position in their overall purposes using electronic resources in their teaching and learning process and it is known from their secured mean score of 3.21 on a 5 point rating scale. The female respondents hold the second position in their overall purposes using electronic resources in their teaching and learning process as per their secured mean score of 2.97 on a 5 point rating scale.

The T test is applied for further discussion. The computed T value 7.39 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant difference between male faculty members and female faculty members in their overall purposes of using electronic resources in their teaching and learning process.

It could be seen clearly from the above discussion that the male respondents top the position in their overall purposes of using electronic resources in their teaching and learning process, and female respondents lag behind them.

Table 7: Gender Wise Respondents' Duration of Utilization of E-Resources

Gender	Below 3 Years	3-6 Years	6-9 Years	9-12 Years	12-15years	Total
Male	26 (9.85)	46 (17.42)	58 (21.97)	82 (31.06)	52 (19.70)	264
Female	38 (27.94)	32 (23.53)	44 (32.35)	12 (8.82)	10 (7.35)	136
Total	**64 (16.00)**	**78 (19.50)**	**102 (25.50)**	**94 (23.50)**	**32 (15.50)**	**400**

Chi-Square Summary Results

Chi Square Calculated Value	Degrees of Freedom	Chi Square Table Value At 5%
51.59	4	9.49

Table 7 presents data on the Gender wise respondents' duration of using electronic resources. It could be noted that the male respondents' occupy the first position with respect to electronic resource utilization for a period of 9-12 years (31.06%) and 12-15 years (19.70%) in their teaching and learning process. In general, majority of the female respondents' make use of electronic resource below 9 years duration in their teaching and learning process.

The chi-square test is applied for further discussion. The compared chi-square value 51.59 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant association between Gender status of the respondents' and their duration of utilization of E-resources.

It could be seen clearly from the above discussion the female respondent's lag behind male respondents' with respect to long duration of utilizing electronic resource in their teaching and learning process.

Table 8: Gender Wise Respondents' Problems in Using Electronic Resource

Variables	Male	Female	Mean
Slow Process	3.50	3.70	3.60
Overload of information	3.11	3.54	3.33
Authentification	2.76	3.09	2.93
Power interpretation	2.21	2.48	2.35
Signal connecting problem	2.93	3.21	3.07
Change of URL	3.72	3.88	3.80
Lack of Training	2.24	2.30	2.27
Cost of paying for some website	3.43	3.51	3.47
Unreliability of some information	2.36	2.64	2.50
Difficult to open some web pages	3.01	3.31	3.16
Proper identification of subject related websites	2.61	2.93	2.77
Virus and hackers problem	3.12	3.41	3.27
Sparm information through mail	2.36	2.84	2.60
Getting user name and pass word for using some websites	3.02	3.39	3.21
Average	2.88	3.16	3.02

T stat 8.64, df 13, t critical= 1.77

Table 56 presents data on the Gender wise respondents' problems in using electronic resources compared to traditional sources. The male respondents rank the first position in realizing the overall problems in using electronic resources in teaching and learning process as per their secured mean score of 3.16 on a 5 point rating scale. The female respondents hold the second position in realizing the overall problems in using electronic resources in teaching and learning process as per their secured mean score of 2.88 on a 5 point rating scale.

The T test is applied for further discussion. The computed T value 8.64 is greater than its tabulated value at 5 per cent level significance. Hence there is a significant difference between male faculty members and female faculty members in their overall problems in using electronic resources in their teaching and learning process. It could be seen clearly from the above discussion that the female respondents top the position in their overall problems in using electronic resources in their teaching and learning process, and male respondents lag behind them.

Findings and Conclusion

It could be seen clearly from the above discussion that the acquiring electronic resources through personal computer ranks the first position as per the reporting of the respondents' accessing E-resources from college library and department library the second, accessing E-resources from the personal computer and department library the third, accessing E-resources from the college library and university library the fourth and accessing E-resources from the internet café the last. It could be seen clearly from the above discussion that post graduate level educated faculty members mainly access the E-resources in their college library and department library. It could be seen clearly from the above discussion that respondents with 20-25 years length of service mainly make use of personal computer towards accessing E-resource.

It could be seen clearly from the above discussion that the female respondents' lag behind the male respondents' in accessing E-resources through their personal computer. It could be seen clearly from the above discussion that the male respondents top the position in their overall purposes of using electronic resources in their teaching and learning process, and female respondents lag behind them. It could be seen clearly from the above discussion that the female respondents top the position in their overall problems in using electronic resources in their teaching and learning process, and male respondents lag behind them.

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