Library Philosophy and Practice (e-journal)   Libraries at University of Nebraska-Lincoln

11-17-2013

Gender Differences in Internet Usage among College Students: A Comparative Study

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Abstract

In today's work environment there is a drastic change in the way how information are shared as well as networking and socializing take place in every society. No doubt that the Internet has become a powerful tool for communication purposes, to exchange ideas, and even used in participation in local, national and international networking. The history of the Internet emerges back in 1960s when several computer scientists were hired by Pentagon to build a system to decentralize communication network. As a result the Arpanet was born. Over time the network grew rapidly to interconnect numerous universities, research centers as well as commercial organization. Thereafter, the word and use of the Internet expand globally. No doubt, with that, Internet usage continues to develop rapidly over the years and now millions are using the Internet. The paper examines gender differences in Internet usage pattern among male and female students. Internet usage pattern covers items such as knowledge and experience on the Internet, purpose of using Internet and frequency of using e-mail. The paper also examines the influence of gender role on Internet usage pattern.

Keywords: Internet; Usage pattern; Web use; Internet surfing; Male; Female; E-books; E-journals; Databases.

1. Introduction

Internet use is spreading rapidly into daily life, and directly affecting people's ideas and behavior. Internet has an impact in many areas including the higher education system. Internet heralded the development and implementation of new and innovative teaching strategies in higher education institutions. Educators who advocate technology integration in the learning process believe it will improve learning and prepare students to effectively participate in the 21st century workplace. Internet use has become a way of life for the majority of higher education students all around the world. For most college students the Internet is a functional tool, one that has greatly changed the way they interact with others and with information as they go about their studies. They use computers to accomplish a wide range of academic tasks. Many students prepare course assignments, make study notes, tutor themselves with specialized multimedia, and process data for research projects. Most exchange emails with faculty, peers, and remote experts. They keep up to-date in their fields on the Internet, accessing newsgroups, bulletin boards, listservs, and web sites posted by professional organizations. Most access library catalogs, bibliographic databases, and other academic resources in text, graphics, and imagery on the World Wide Web (Asan & Koca, 2006). Usun (2003) mentioned that Internet is appealing to higher education for a number of reasons: it reduces the time lag between the production and utilization of knowledge; it promotes international co-operation and exchange of opinions; it furthers the sharing of information; and it promotes multidisciplinary research.

2. Gender and Internet

There are numerous debates on the link between gender and Internet usage. Many researchers are aware of gender inequality in Internet usage. However, inequalities are not only reflected in Internet technology but also in numerous aspects such as in education politics, and workforce. Norris's (2001) studies in Europe on Internet access highlights that social economic or individual factors may be significant for the understanding the Internet access. Even then, Winker (2005) has a different view, as the writer mentioned that there is a still gender specific difference that cannot be explained just by studying the differences in education or even in income and its effect on Internet usage. Teo and Lim's (1997) study in Singapore indicated that there is a deferential access between boys and girls in terms of technology. They indicated that internet users in Singapore are predominantly males with females comprising only about 11 percent of Internet users. Their study found that females and males engage in different activities. Females spend more time on the Internet for messaging activities, promotional campaigns while males are more into downloading and purchasing activities. Thus to certain extent, male and female do use the Internet for different purposes.

Liu and Wilson (2001) argued that information technology has taken the world by storm and is changing the way businesses learn, consequently rushing their development across the globe; it cannot be denied that the entire generation that is growing up with new technology is likely to have different expectations and experience towards the use of digital media. Early involvement of women with digital technology was restricted. In the year 1995, when Internet usage increases dramatically, many women were not in favor with it. However, the transition of developed society has changed how women engage themselves to the Internet. With these changes, the women involvement has become more visible. Moreover, Sherman, End, Kraan, Cole, Campbell, Birchmeier and Klausher (2000) mentioned that although the majority of Internet users are men, but the gender gap among users has narrowed. This can be supported by Heimrath and Goulding's (2001) study on students and members of the public at librarian in Southborough and Slough in which it concluded that female interest and confidence in using the Internet is high but when a comparison with male respondents is made, the females has not taken Internet rapidly. Moreover, Sherman et al. (2000) argued that college men fell more proficient and comfortable using the computer technology and the Internet when compared to female classmates. A differential usage pattern in terms of frequency is also noted in the study of gender and Internet. Researchers indicate that frequency usage for male is particularly marked during the weekend (Eimeren, Gerhad and Fress, 2004). Along with other factors, time is an important variable to use the Internet in which men use the Internet more frequently and for long hours while women are in the categories of moderate user (Winker, 2005).

Gender differences in internet usage and web information seeking behaviors have attracted considerable interests (Hupfer and Detlor (2006). Liu and Huang (2008) study on male/female differences in web searching materials by focusing on the online reading environment shows that there is a significant difference between genders in which female readers have a strong preference for paper as a reading medium than male readers. On the other hand male readers have greater sense of satisfaction with online reading. Thus the study reported that there are some significant differences between male and female behavior in the online reading environment. Meanwhile, Hupfer and Detlor (2006) found that male and female differences in web searching appear to persist such as women are more into e-mail, chat, and search reference materials about medical and government information whereas men

tend to focus on information about investment, purchase and personal interests. Hupfer and Detlor's (2006) finding is similar to Garbarino and Strahilevitz's (2004) work which concludes that females perceived Internet as a tool of maintaining social values. Lorence and Park (2007) showed that there is somehow a difference between female and male Internet users in terms of online health information users. The study found that males were more likely to be Internet users but in terms of online health information users, females were the dominant users. However, a study conducted by Wolin and Kargaonkar (2003) on gender differences in beliefs, attitudes, and behavior towards web advertising reported a slight difference. The writers found that males are likely to browse the Internet for functional and entertainment purpose while females are more into shopping reasons. Skills do play an important role in framing gender inequalities in terms of Internet usage. Skills are the user's ability to locate content online effectively and efficiently. Therefore, men and women may differ significantly in their attitudes towards their technological abilities (Hargittai and Shafer, 2006). On the other hand, Heimrath and Goulding (2001) found that female students at Sheffield University felt that the Internet was too big and unstructured thus, searching the Internet difficult, not enjoyable and will use it only when unavoidable whereas male students were happy to search the Internet for relevant information. Moreover, Niemivirta (1997) reported that there is a difference in academic interest between genders. The research highlighted that males are more extrinsically motivated while females are more intrinsically motivated in terms of furthering their education. In short, although it cannot be denied that Internet is embedded in our daily activities especially in the academic environment, but yet there is some reasons why both genders use them differently and how gender role influences their usage behavior at home. Therefore, this study attempts to fill in the knowledge gap by analyzing the Internet usage pattern and the influence of gender role.

3. Review of Literature

Walzer (2001) highlighted that gender roles often become more differentiated when men and women become parents. For instance, women provide more direct care for and spend more time with children thus creating unequal division of both household labor and childcare. Liu and Wilson (2001) further explain it by saying that women end up "shouldering" most of the childcare responsibilities which leads to time constrain. Additionally, Strazdins and Broom (2004) women play an important role by performing most of the emotional work in families like listening to and comforting children, giving emotional support to parents, doing things to improve or maintain relationship. Tang and Cousins (2005) further supported that women are still mainly responsible for domestic labor and childcare. Sophie and Genin (2009) state that having children and a family are seen as two major milestones between job and family. Therefore, gender role affects men and women in many ways. For instance women find that there are some limitations to the use of Internet at home due to her gender role. Kennedy et al. (2003) found that tasks in child care at home limit mothers than fathers in the use of the Internet. Robinson and Godbey (1997) further noted that men and women with children at home spend less time on the phone, reading newspapers, watching television or even attending cultural events. Thus, previous research did indicate that women with child caring have very little time for their own activities, for instance, accessing the Internet.

Lazinger et al. (1998) in study titled "Internet Use by Faculty Members in Various Disciplines: A Comparative Case Study" investigated the use of the Internet among various sectors of faculty members. Questionnaires were distributed to faculty members of all departments and professional schools of the Hebrew University of Jerusalem. The use of the

Internet was found comparatively higher among faculty of sciences and agriculture than in humanities and social sciences. Shaw (1998) examined the use of the Internet and the electronic environment by English academics in the study titled "The Use of the Internet by English Academics". Author proposed to know the opinions of users from colleges of University of Wales and also revealed the pattern of using aforesaid sources, purpose of use, problems faced by users in using these sources. In a study named "Internet Access and Usage by Students of the University of Botswana", Ojedokun (2002) investigated the Internet access, usage and problems faced in its use by the students of the university. Findings of the study revealed that though a considerable number of users were aware about the benefit of the Internet, but lacked necessary searching skills for effective use of the Internet. Because of this factor users accessed the Internet for entertainment, sports and news etc.

Another study was conducted by Rajiv Kumar and Amritpal Kaur (2005) under title "Internet and its Use in the Engineering Colleges of Punjab, India: A Case Study". It aimed to examine the pattern of use of the Internet by the teachers and students of engineering colleges of Punjab. Authors examined the users' experience and frequency of the Internet use, time spent, location of use, purpose, resources and services being used, problems faced by users, benefits of the Internet over conventional documents and its impact on the academic efficiency of respondents, etc. Slow access speed of the Internet, difficulty in finding relevant information and privacy were the main problems faced by the users. Anasi (2006) examined the pattern of the Internet use by undergraduate students of university in study titled, "Internet Use Pattern of Undergraduate Students at the University of Lagos, Nigeria". The level of the Internet use was found low among students under study as they were lacking the search strategies to locate information. Along with the recommendations for provision of adequate computer laboratory and proper power back up system author also recommended the integration of the Internet and computer literacy into compulsory general studies programme of the university. In a research article "Internet Use by Teachers and Students in Engineering Colleges of Punjab, Haryana, and Himachal Pradesh States of India: An Analysis" Rajeev Kumar and Amritpal Kaur (2006) examined the Internet use by teachers and students and attempted to find whether the Internet can replace libraries? Survey revealed that 77.5% users felt that the Internet can not replace library services, whereas 22.5% responded otherwise, because they find it easy to locate information on the Internet than in library.

4. Objectives

The present study was conducted to compare the use of internet by the male and female college students and to identify the problems faced by them while searching the internet.

5. Methodology

The survey method of research was used to conduct the study and questionnaire was used as a data collection tool. After the survey, a questionnaire was drafted; it was pre-tested with 10 students. The questionnaire was then modified based on the result of the pre-test. Later, the data was collected from 340 college students during academic sessions. The stratified random sampling technique was employed for on the spot selection of students. The data was collected with respect to three demographics, i.e., gender, region, and faculty. The questionnaire was administered personally to ensure the excellent response rate as well

as to avoid any misunderstanding while providing responses. The data were analysed using different quantitative techniques and presented in the appropriate formats.

6. Analysis of Data

Analysis of data is the ultimate step in research process. It is the link between raw data and significant results leading to conclusions. This process of analysis has to be result oriented. In other words, it must aim at setting objectives and hypotheses. According to Richard Budd, analysis ".... leads eventually to summarizing procedures resulting in some sacrifice of details. Frequencies and column are summarized in tables as averages and percentages are transformed into indices or attention scores to be used as a single variable in subsequent analysis". The present study reports the analysis of data gathered through the questionnaire designed for male and female college students of the Madurai region.

6.1 Distribution of Respondents by Gender

Table 1. Gender wise Distribution of Respondents

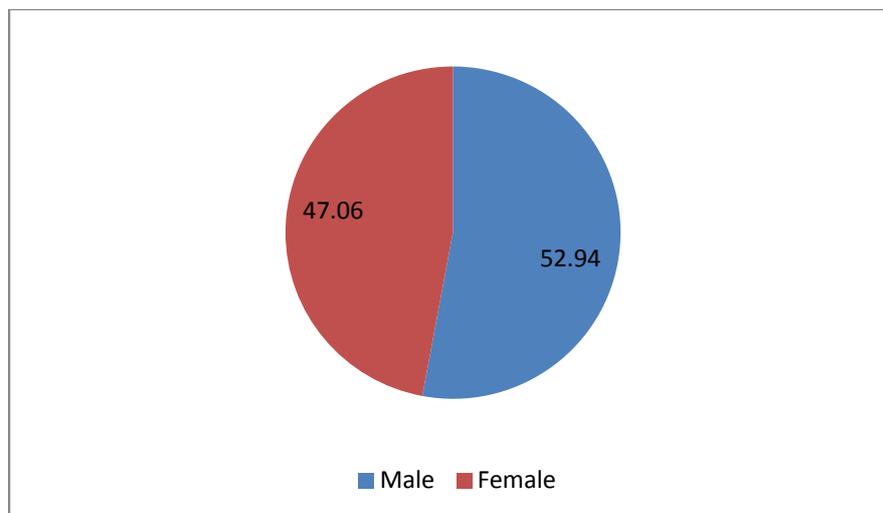| Gender	No. of Respondents	Percentage
Male	180	52.94
Female	160	47.06
Total	340	100.00

Fig.1 Distribution of Respondents

A study of data in table-1 indicates the gender distribution of respondents. It could be noted that out of the total 340 respondents, 52.94 % belong to the male group and the rest of them 47.06% are females [Fig.1].

6.2 Frequency of Internet Use

Table 2. Gender wise Respondents' Frequency of Access to Internet

Gender	Less than 2 hours	2-3 hours	3-4 hours	4- 5 hours	Above 5 hours	Total
Male	65 (36.11)	38 (21.11)	40 (22.22)	22 (12.22)	15 (8.33)	180
Female	49 (30.62)	42 (26.25)	39 (24.37)	21 (13.12)	9 (5.62)	160
Total	114 (33.52)	80 (23.52)	79 (23.23)	43 (12.64)	24 (7.05)	340

Data presented in table-2 indicate the gender wise respondents' frequency of access to internet. It could be noted that majority of the male student respondents (36.11%) have less than 2 hours of access to internet, whereas, majority of the female student respondents (30.62%) have less than 2 hours of access to internet. It could be seen clearly from the above discussion that majority of the male and female respondents have less than 2 hours of access to internet.

6.3 Places of Using Internet

Table 3. Gender wise Respondents' Place of using Internet

Place of Using Internet	Gender		Total
	Male	Female	
College	4.36	2.85	4.10
Cyber café	4.56	2.66	4.23
Home	2.52	3.21	2.99
Cell Phone	4.65	3.1	2.90
Others	4.15	2.44	3.81
Total	4.56	2.58	3.04

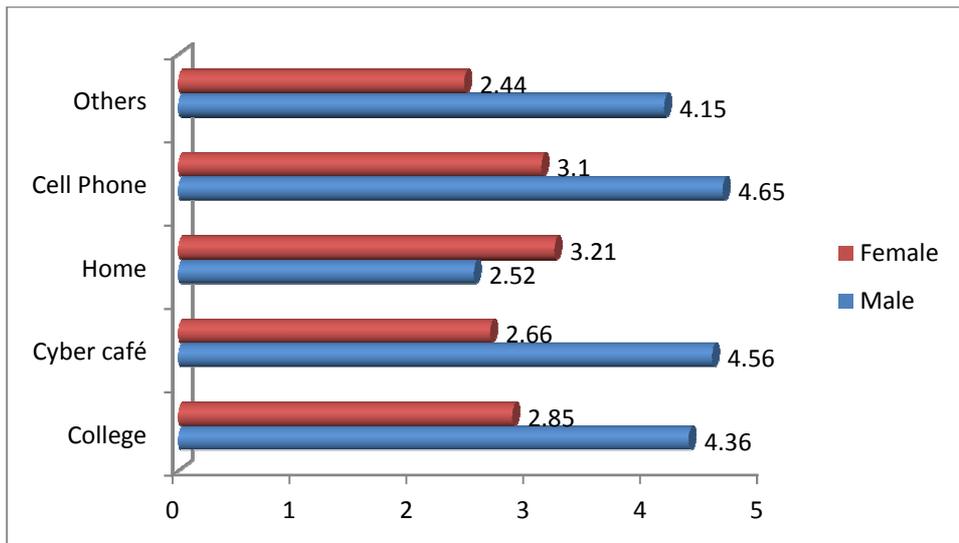t calculated value = 6 df=11. t critical value=2.20

Fig.2 Gender wise Respondents' Place of using Internet

A study of data in table-3 indicates the gender wise respondents' place of using Internet. The male respondents occupy the first position with respect to their overall place of using Internet as their secured mean score is 4.56 on a 5 point rating scale. The female respondents take the second position in their overall place of using Internet as their secured mean score is 2.58 on a 5 point rating scale.

The t test is applied for further discussion. The computed t value 6 is greater than its tabulated value at 5 per cent level of significance. Hence, there is significant difference between male and female respondents with respect to their place of using Internet. It could be seen clearly from the above discussion that male respondents take the first position in their overall place of using Internet, and female respondents take the second position [Fig.2].

6.4 Use of Search Engines

Table 4. Gender wise Respondents' use of search engines

Search Engines	Gender		Total
	Male	Female	
Google	4.46	2.99	4.15
Yahoo	3.52	2.26	3.37
Rediff	3.37	3.87	4.10
AltaVista	2.52	2.42	2.56
Info seek	3.15	3.05	3.96
Total	2.15	3.49	2.75

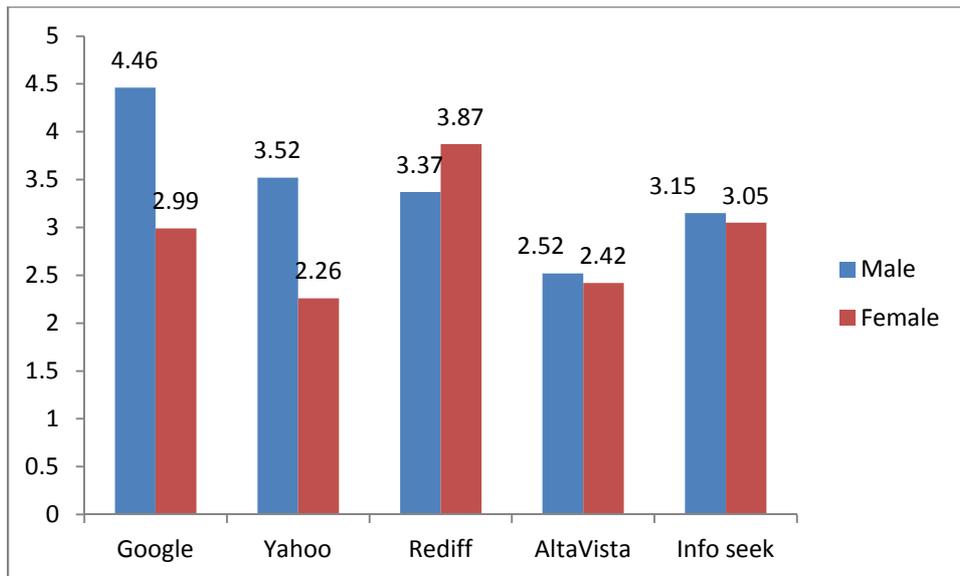t calculated value = 2.66 df =9. t critical value=2.62

Fig.3 Gender wise Respondents' use of search engines

A study of data in table-4 indicates the gender wise respondents' use of search engines. The female respondents occupy the first position with respect to their overall use of search engines as their secured mean score is 3.49 on a 5 point rating scale. The male respondents take the second position in their overall use of search engines as their secured mean score is 2.15 on a 5 point rating scale.

The t test is applied for further discussion. The computed t value 2.66 is greater than its tabulated value at 5 per cent level of significance. Hence, there is significant difference between male and female with respect to their overall use of search engines. It could be seen clearly from the above discussion that female respondents take the first position in their overall use of search engines and male respondents take the second position [Fig.3].

6.5 Purpose of Using Internet

Table 5. Gender wise Respondents' Purpose of using Internet

Purpose for Using Internet	Gender		Total
	Male	Female	
Information	4.46	3.96	4.15
Communication	4.21	3.76	4.08
Education	3.39	2.26	3.09
Audios and Videos	2.65	3.96	3.23
Others	4.15	3.66	3.80
Total	3.67	3.31	3.49

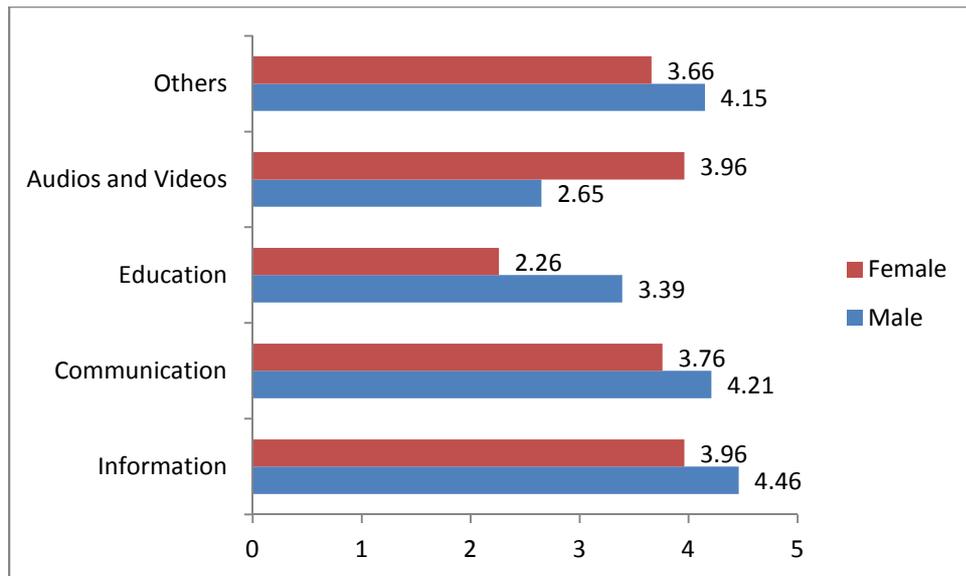t calculated value = 2.23 df =13. t critical value=1.77

Fig.4 Gender wise Respondents' Purpose of using Internet

A study of data in table-5 indicates the gender wise respondents' purpose of using Internet. The male respondents occupy the first position with respect to their overall purpose of using Internet as their secured mean score is 3.67 on a 5 point rating scale. The female respondents lag behind the male respondents in their overall purpose of using Internet as their secured mean score is 3.31 on a 5 point rating scale.

The t test is applied for further discussion. The computed t value 2.23 is greater than its tabulated value at 5 per cent level of significance. Hence, there is significant difference between male and female respondents with respect to their overall purpose of gathering e-resources. It could be seen clearly from the above discussion that male respondents take the first position in their overall purpose of using Internet and female respondents lag behind them [Fig.4].

6.6 Use of Internet / Web Sources

Table 6. Gender wise Respondents' use of Internet / Web sources

Type of Internet source	Gender		Total
	Male	Female	
E-books	4.26	3.66	4.15
E-magazines	4.28	3.78	4.00
E-newspapers	3.89	2.96	3.02
E-journals	2.44	3.85	3.37
Blogs	3.9	2.56	3.85
Wikis	4.46	3.78	4.20
Online libraries	4.32	3.52	4.10
Databases	4.21	3.65	3.95
Others	3.86	3.86	3.11
Total	3.79	2.85	3.15

t calculated value = 3.23 df =12. t critical value=1.78

A study of data in table-6 indicates the gender wise respondents' use of Internet / Web sources. The male respondents occupy the first position with respect to their overall access to Internet / Web sources as their secured mean score is 3.79 on a 5 point rating scale. The female respondents lag behind the male respondents in their overall access to Internet / Web sources as their secured mean score is 2.85 on a 5 point rating scale.

The t test is applied for further discussion. The computed t value 3.23 is greater than its tabulated value at 5 per cent level of significance. Hence, there is a significant difference between male and female respondents with respect to their overall access to Internet / Web sources. It could be seen clearly from the above discussion that male respondents take the first position in their overall access to Internet / Web sources and female respondents lag behind them.

6.7 Problems in Using Internet

Table 7. Gender Wise Respondents' Problems in Using Internet

Problems	Gender		Total
	Male	Female	
Information overload	3.15	4.36	3.55
Information pollution	2.66	3.52	3.20
Financial barrier	3.12	4.49	3.90
Internet illiteracy	3.6	4.15	3.75
Others	2.65	3.89	2.75
Total	3.52	4.26	3.65

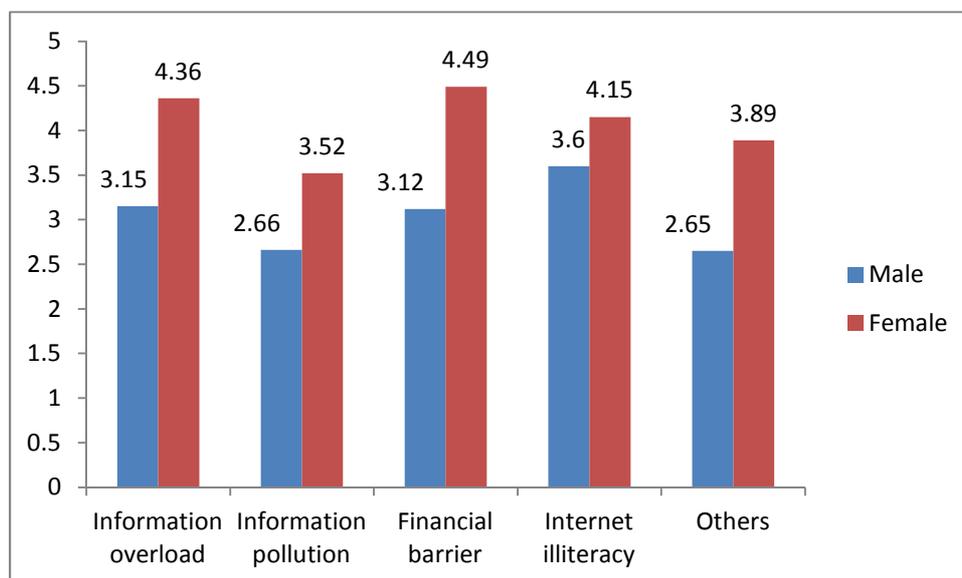t calculated value = 8.00 df =7. t critical value=1.89

Fig.5 Gender Wise Respondents' Problems in Using Internet

A study of data in table-7 indicates the gender wise respondents' problems in accessing Internet. The female respondents occupy the first position with respect to their overall problems in accessing Internet as their secured mean score is 4.26 on a 5 point rating

scale. The male respondents lag behind the female respondents in their overall problems in accessing Internet as their secured mean score is 3.52 on a 5 point rating scale.

The t test is applied for further discussion. The computed t value 8 is greater than its tabulated value at 5 per cent level of significance. Hence, there is significant difference between male and female respondents with respect to their overall problems in accessing Internet. It could be seen clearly from the above discussion that female respondents take the first position in their problems in accessing Internet and male respondents lag behind them [Fig.5].

6.8 Conclusion

The Internet is an inseparable part of today's educational system. The academic increasingly depends on the Internet for educational purposes. A majority of academic and research institutions provide Internet service to students, teachers, and researchers. In recent years, use of the Internet has also increased in India. Policymakers in India have given top priority to the information and communication industry and have taken a number of favorable steps such as establishing IT policy and investment in IT infrastructure, fiber optic access, software technology, human resource development, and launching of e-government projects. Results of this study suggest that Internet users are not predominantly used by any sex. Both genders have equal access to Internet; however, the differences are noticed in terms of usage pattern. The access is similar for both genders probably because both genders have high exposure to the technology through their educational experience. As such educational attainment to certain extent enables both men and women to realize their capabilities and reach the full potentials. On the other hand, there is a slight variation in the usage pattern at home between men and women due to the influence of gender role.

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