Gender Variability in Internet Use of the College Students

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ABSTRACT

The Internet has been a field of study for researchers since its inception. The academic community especially students use the Internet to satisfy their diverse needs. The present study aims to identify the gender variability in the Internet use of college students. The stratified sampling technique was employed to select students and data was collected via a questionnaire. The study confirms the existence of gender differences in the Internet use of the college students. However, the differences are slight for most uses. In comparison, more male students are frequent users of Internet than females. Female students use the Internet more than males for information and education whereas male students use the Internet more than females for communication and entertainment. Neither male nor female students record high use the Internet sources like online libraries, databases, e-books, e-journals, wikis, and blogs. The study also finds that both male and female students face problems like information overload and information pollution while searching the Internet, though with slight variations. Finally, the problem of Internet illiteracy is found to be more common in female students than in their male counterparts.

KEYWORDS

Internet use, Internet search, Internet sources, College students, Gender differences

INTRODUCTION

The Internet is the biggest global network connecting 227 countries of the world. According to Internet World Stats (2010a), the population of Internet users worldwide is 1,733,993,741, almost covering 25.6% of the total world population. The highest percentage of Internet users belongs to younger generation who grew up in the Internet age. The academic community, especially college students, is another major share holder of the Internet users. Williamson (2008) reports that out of 18.0 million college students in the U.S., 17.1 million (95.0%) went online at least once a month in 2007. In 2008, that number had risen to 17.4 million out of 18.2 million, total (95.7%). Developing countries like India are also connected with the global village and use the Internet for various purposes. India stands fourth in the world after US, China and Japan in terms of the Internet users (Internet World Stats, 2010b). In India, the major group of Internet users belongs to the academic community as the Internet came to India primarily for academicians through Educational and Research Network (ERNET).

INTERNET in Kashmir Valley

The scope of the present study is geographically limited to the Kashmir Valley, one of the major provinces of the Jammu & Kashmir (J&K) state. The Jammu & Kashmir is the northern most Indian state of India and covers a total area of 22,22,236 sq. kms (Kanth, 1985). The state ranks 6th in area and 17th in population among the states and union territories of India and comprises three natural provinces, namely Jammu, Kashmir, and Ladakh. The Kashmir region is commonly known as the Kashmir Valley. Known to its inhabitants as *Kashir*, the Kashmir Valley is perched among the Himalayas at an average altitude of about 6,000 feet above sea level (Lawrance, 1985). The population of the Kashmir Valley is 57, 14,698 as per 2001 census (India 2010). Due to the prevailing political tensions in the Valley, the development in all sectors including education is slow. However, the Internet services were introduced in the Valley during 1994-95 by Bharat Sanchar Nigam Limited (BSNL). With the passage of time, three more privately owned internet service providers (ISPs) - IPEAKS, SLICNET, and INFONET were registered, but only IPEAKS was operational (Chawla, 2003). Presently, six ISPs (namely BSNL, AIRTEL, AIRCEL, Tata Indicom, Reliance and Vodafone) are operational in the Valley (Loan, 2010). Commercial cyber cafes are also available in all the major towns of the Valley. There are more than 100 cyber cafés in Srinagar city only (Loan, 2009). In addition to that, 57 Community Information Centres (CICs) are available in Kashmir to access online information (India Department of Information Technology, 2008). These facilities provide

opportunities to the public in general and the academic community in particular to stay connected with the global village.

INTERNET Facilities in Colleges

Internet service isn't available in all academic institutions of Kashmir. Most of the higher education institutions like the University of Kashmir-, Srinagar and the National Institute of Technology-, Srinagar started this service for the academic community in last decade. The University of Kashmir has played a leading role in initiating the process. In 2002, it established Internet access centres in the library premises separately for students, scholars, and teachers and on December 4, 2008, opened a browsing centre which remains open around the clock naming the plan "24X7". Now more than 200 computers are connected to the Internet for browsing the online information from the library premises. In addition to the services in the central library (Allama Iqbal Library) of the university, Internet access is provided to all departments through Local Area Network (LAN). In addition, a Wi-Fi System covers the whole campus.

Table 1: Internet facilities in Degree Colleges of Kashmir Valley

Name of College	Internet facility	Mode of Connection	Location	Users
Amar Singh College, Srinagar	Yes	Broadband	Library	All
Gandhi Memorial College, Srinagar	Yes	Broadband	Separate Room	Officials
Govt. Degree College, Bemina Srinagar	Yes	Broadband	Library	All
Govt. College for Women, M A Road Srinagar	Yes	Broadband	Computer Science	CSTS*
Govt. College for Women, Nowakadal Srinagar	Yes	Broadband	Separate Room	Teachers, Officials
Islamia College of Science & Commerce, Srinagar	Yes	Broadband, VSAT	All faculties/ Library	All
Sri Pratab College, M A Road Srinagar	Yes	Broadband	Office	Officials
Vishu Bharti Womens College, Srinagar	Yes	Dial up	Separate Room	Officials
Govt. Degree College for Boys, Anantnag	Yes	Broadband	Library	All
Govt. Degree College for Women, Anantnag	Yes	Dial up	Office	Officials
Govt. Degree College for Boys, Baramulla	Yes	Broadband	Computer Science	CSTS*
Govt. Degree College for Women, Baramulla	Yes	Broadband	Office	Officials
Govt. Degree College, Ganderbal	Yes	Dial up	Office	Officials
Govt. Degree College, Handwara	No	–	–	–
Govt. Degree College, Kulgam	Yes	Broadband	Library	All
Govt. Degree College, Kupwara	Yes	Broadband	Computer Science	CSTS*
Govt. Degree College, Pulwama	Yes	Broadband	Computer Science	CSTS*

Govt. Degree College, Shopian	Yes	Broadband	Office	Teachers, Officials
Govt. Degree College, Sopore	Yes	Broadband	Office	Officials
Govt. Degree College, Tral	Yes	Dial up	Office	Officials

*CSTS= Computer Science Teachers & Students

In programs initiated by the universities, most of the degree colleges also established Internet browsing centres for their academic communities to enhance their educational performance. The noteworthy colleges are Islamia College of Science & Commerce, Srinagar; Women's College, Srinagar; Amar Singh College, Srinagar; Govt. Degree College for Boys, Anantnag; Govt. Degree College for Boys, Baramulla etc. Among all the colleges, Islamia College of Science & Commerce-, Srinagar, is the only college to have browsing centres in all departments including the library. In this college almost 200 computers are connected to the Internet through broadband technology. Moreover, the colleges like Govt. Degree College for Boys, Anantnag, have browsing centres in libraries to provide unrestricted Internet access to whole academic community. Some of the colleges like Govt. College for Women, M A Road Srinagar, have established these browsing centres in Computer Science departments for the use of Computer Science teachers and students only. These colleges don't allow students of other faculties/disciplines to exploit Internet services. Some colleges like Govt. Degree College, Ganderbal, use these services for official purposes like downloading university notices, examination forms etc. (Table 1). The college students of the Kashmir Valley have now close association with the Internet. Therefore, the present study is carried out to explore the gender differences in Internet use of college students. The study covers the academic college students of the Bachelors Degree from the faculties of General Science, Social Sciences, Humanities, Business & Commerce and Computer Science. The students range in age from 18-25 years.

RELATED LITERATURE

The available literature shows that scholars have studied the gender differences in Internet use worldwide. In a study of college students' attitudes toward technology, Smith and Necessary (1996) found that males had significantly more positive attitudes toward computers than females did. However, Shaw & Gant (2002) contradicts these findings. They conducted a similar study and reported that gender had no significant effect on any of the dimensions of computer attitude studied. However, with the advancement of technology, there is possibility of greater adoption of technology by women.

Bimber (2000) after measuring the differences in men's and women's use of the Internet in U.S. found the existence of gender gap in their Internet use. He argued that women are substantially less likely to be frequent users, equally likely to be infrequent users, and more likely to be intermediate users. Ono and Zovodny (2003) also found women to be less frequent and less intense users of the Internet. Concern about gender inequality has now shifted from access to intensity. Mishra, Yadav and Bisht (2005) conducted a research study to learn the Internet utilization patterns of undergraduate students at the G B Pant University of Agriculture and Technology, Pantnagar. The findings of the study revealed that a majority of the students (85.7%) used the Internet in which male students use Internet in greater numbers than females. In short, all these studies reported that females are less intensive Internet users than males.

The most pronounced gender difference in Internet use is found in the online applications used by males and female. Male college students are more likely than their female counterparts to use the Internet for recreational purposes like playing online games, visiting adult-only sites, gambling, accessing news groups and discussion forums, staying abreast of news developments, and seeking information for personal use), while females are more likely to use the Internet to talk to family and friends (Goodson, McCormick, & Evans, 2001; Odell et al., 2000). These findings appear to reinforce the widespread assumption that men prefer to use the Web for information gathering and entertainment and women prefer to use the Internet for communication (Shaw & Gant, 2002).

While most scholars agree that the gender gap in Internet use has narrowed significantly in the college age group (Goodson, McCormick, & Evans, 2001), some gender differences have been found in attitudes toward technology, intensity of Internet use, online applications preferred, and experience in cyberspace. The

scholarship on gender and Internet use is contradictory at times, demonstrating the dynamic nature of the interaction, as well as the need for continued investigation.

METHODOLOGY

The data was collected using the questionnaire method. The relevant literature was reviewed and analysed to provide some direction in drafting questionnaire, after which the questionnaire was pre-tested with 30 students to ensure that it was understandable. The questionnaire was then modified (for instance, terms such as *information overload* were further defined/elaborated) according to the results of the pre-test to make it more comprehensible. Later, the statistical sampling formula was used to obtain the sample.

$$n = \frac{Z^2 Npq}{Ne^2 + Z^2 pq}$$

Where,

Z	= Probability given under 96.5% reliability
N	= Population or universe
E	= Sampling error
pq	= Proportion of the total population

The population of the undergraduate students in the academic colleges of the Kashmir Valley was 54,191. The value of the proportion of the total population (pq) was obtained from rural and urban ratio. Further, to ensure an optimal sample size, the 96.5% confidence level was pre-assigned and a small sampling error (0.04) was fixed.

$$n = \frac{Z^2 Npq}{Ne^2 + Z^2 pq} = \frac{(2.1)^2 (54191)(0.54)(0.46)}{(54191)(0.04)^2 + (2.1)^2 (0.54)(0.46)}$$

$$n == 676.11 = 676$$

Using the stratified sampling technique, 676 college students were selected from the degree colleges of the Kashmir Valley. The data was collected from both genders using population allocation method as:

$$n_i = n \frac{N_i}{N}$$

i	= 1, 2, 3, 4
n	= 676 (total Sample size)
Ni	= total number of students in the Category
N	= Total population from which sample is taken.

Category	No. of Students (Ni)	Proportion (Ni/N)	Sample Size ni=n(Ni/N)
Male	31,825	31825/54191=0.5873	676(0.5873)= 397
Female	22,366	22366/54191=0.4127	676(0.4127)=279
Total	**54191**	**(100%)**	**676**

Among 676, only 302 were identified as Internet users, of which 208 were males and 94 were females. The responses of these 302 college students were analysed to conduct the present study.

RESULTS

1. Frequency of the Internet Use among Self_ Described Users

According to this study, 80.47% of the Kashmir Valley college students who use the Internet use it on a daily to weekly basis. When these results are broken down by gender, they show that 86.54% of male students Internet users use the Internet on a daily to weekly basis, compared to 67.02% of female students Internet users (Table 2).

Table 2: Frequency of Internet Use

Frequency of the Internet Use	Total	Male	Female
Every day	76/302 (25.17%)	58/208 (27.88%)	18/94 (19.15%)
2/3 times/week	95/302 (31.46%)	72/208 (34.62%)	23/94 (24.47%)
Once in a week	72/302 (23.84%)	50/208 (24.04%)	22/94 (23.40%)
2/3 times/month	43/302 (14.24%)	17/208 (8.17%)	26/94 (27.66%)
Once in a month	16/302 (5.30%)	11/208 (5.29%)	5/94 (5.32%)

2. Purpose of Internet Use

As the data in Table 3 show, students use the Internet primarily for information (36.42%), followed by education (28.15%), communication (16.89%), and audio and video content (12.91%). The data also reveal that female students use the Internet more than males for information (38.30% versus 35.58%) and education (30.85% versus 26.92%), whereas male students use the Internet more than females for communication (17.30% versus 15.96%) and audio/video content (13.94% versus 10.63%).

Table 3: Purpose of Internet Use

Main Purpose of Internet Use	Total	Male	Female
Information	110/302 (36.42%)	74/208 (35.58%)	36/94 (38.30%)
Communication	51/302 (16.89%)	36/208 (17.31%)	15/94 (15.96%)
Education	85/302 (28.15%)	56/208 (26.92%)	29/94 (30.85%)
Audio &Video	39/302 (12.91%)	29/208 (13.94%)	10/94 (10.64%)
Others	17/302 (5.63%)	13/208 (6.25%)	4/94 (4.26%)

3. Use of Internet Services

The students mostly use search engines (100%), e-mail (97.02%), and chatting (75.50%). Male students use all Internet services like e-mail (100% versus 90.43%), chatting (80.29% versus 64.89%), new groups (23.56% versus 17.07%), and bulletin board service (29.81% versus 20.21%) more than females (Table 4).

Table 4: Use of Internet services

Use of Internet Services	Total	Male	Female
E-mail	293/302 (97.02%)	208/208 (100%)	85/94 (90.43%)
Chatting	228/302 (75.50%)	167/208 (80.29%)	61/94 (64.89%)
News groups	65/302 (21.52%)	49/208 (23.56%)	16/94 (17.02%)
Bulletin Board Service	81/302 (26.82%)	62/208 (29.81%)	19/94 (20.21%)

Search Engines	302/302 (100%)	208/208 (100%)	94/94 (100%)
Others	110/302 (36.42%)	82/208 (39.42%)	28/94 (29.79%)

4. Use of Internet/Web Sources

The students surveyed mostly use E-newspapers (63.91%) followed by E-magazines (39.07%) and wikis (37.09%). Besides these sources, 47.07% use other sources like general websites, news channels, sports channels, dictionaries, encyclopaedias, and many others. The male students use E-newspapers (65.38% versus 60.64%), databases (25.00% versus 23.40%), online libraries (14.42% versus 12.77%) E-books (24.04% versus 23.40%), and E-journals (14.90% versus 11.70%) more than females, whereas females use E-magazines (39.36% versus 38.94%), wikis (39.36% versus 36.06%), and blogs (22.34% versus 21.15%) more than males (Table 5)

Table 5: Use of Internet Sources

Use of Internet Sources	Total	Male	Female
E-books	72/302 (23.84%)	50/208 (24.04%)	22/94 (23.40%)
E-magazines	118/302 (39.07%)	81/208 (38.94%)	37/94 (39.36%)
E-Newspapers	193/302 (63.91%)	136/208 (65.38%)	57/94 (60.64%)
E-journals	42/302 (13.91%)	31/208 (14.90%)	11/94 (11.70%)
Blogs	65/302 (21.52%)	44/208 (21.15%)	21/94 (22.34%)
Wikis	112/302 (37.09%)	75/208 (36.06%)	37/94 (39.36%)
Online Libraries	42/302 (13.91%)	30/208 (14.42%)	12/94 (12.77%)
Databases	74/302 (24.50%)	52/208 (25.00%)	22/94 (23.40%)
Others	142/302 (47.02%)	101//208 (48.56%)	41/94 (43.62%)

5. Reasons to Use Web Sources

In their responses, the students highlighted many features of web sources like accessibility, interactive, up-to-date, timeliness, wide coverage, and multimedia features as reasons to choose particular sources. Up-to-date (40.73%) was rated as the best feature, followed by timeliness (24.17%). Male students report seeking timely or up-to-date web sources more than females, whereas female students are more likely than males to seek sources that offer remote access and interactive features (fig. 1).
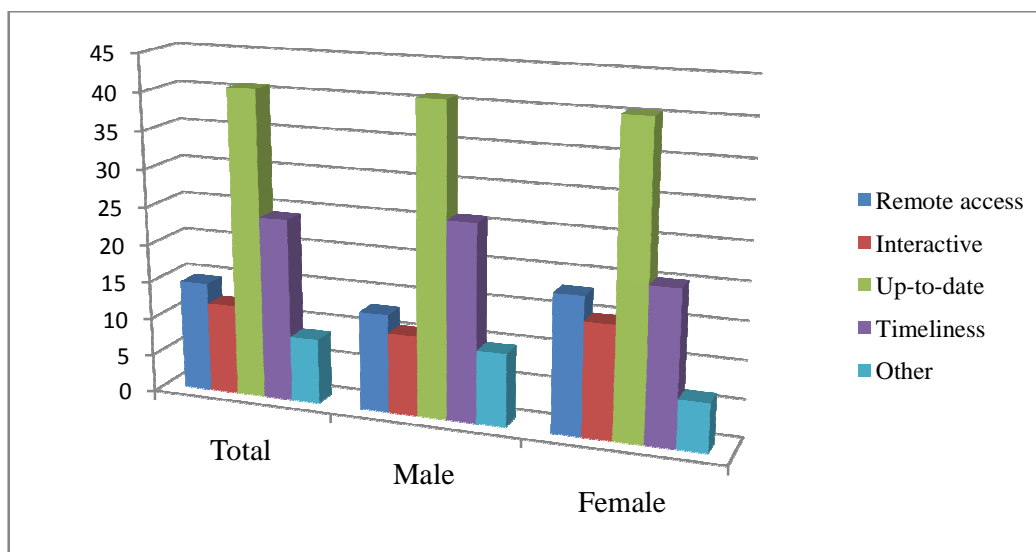
Fig. 1: Reasons to Use Web Sources

6. Use of Search Engines

The most widely used search engine is Google (56.95%) followed by Yahoo (22.19%), and male students are more likely than females to use Yahoo (24.04% versus 18.08%), while female students are more likely than males to use Google (59.57% versus 55.77%) (Table 6).

Table 6: Use of search engines

Use of Search Engines	Total	Male	Female
Google	172/302 (56.95%)	116/208 (55.77%)	56/94 (59.57%)
Yahoo	67/302 (22.19%)	50/208 (24.04%)	17/94 (18.09%)
Rediff	15/302 (4.97%)	11/208 (5.29%)	4/94 (4.26%)
Altavista	28/302 (9.27%)	19/208 (9.13%)	9/94 (9.57%)
Others	20/302 (6.62%)	12/208 (5.77%)	8/94 (8.51%)

7. Problems faced while searching

The students face various problems while searching the Internet. The widely faced problem is information overload- "too many hits" (39.74%), followed by Internet illiteracy- "lack of Internet operating/searching skills" (23.84%), financial barrier-"paid information" (15.89%) and information pollution- "too many irrelevant hits" (13.91%). The other problems faced are lack of downloading facility, restricted access, and language barriers. Male students tend to face information overload (40.38% versus 38.30%) and financial barriers (17.79% versus 11.70%) more than females, whereas females are more likely than males to feel information pollution (15.96% versus 12.98%) and Internet illiteracy (26.59% versus 22.60%) problems (Table 7).

Table 7: Internet searching problems

Internet searching problems	Total	Male	Female
Information Overload	120/302 (39.74%)	84/208 (40.38%)	36/94 (38.30%)
Information Pollution	42/302 (13.91%)	27/208 (12.98%)	15/94 (15.96%)

Financial Barrier	48/302 (15.89%)	37/208 (17.79%)	11/94 (11.70%)
Internet Illiteracy	72/302 (23.84%)	47/208 (22.60%)	25/94 (26.60%)
Other	20/302 (6.62%)	13/208 (6.25%)	7/94 (7.45%)

DISCUSSION

The results reveal that Internet has fixed its roots in the college students lives and is being used for satisfying diverse needs. The findings confirm the existence of gender differences in Internet use of college students. Males outnumbered females as frequent users. The various factors can be responsible for this variation. The prominent reason is that men have more positive attitudes towards Internet than women (Smith and Necessary, 1996) and exploit more Internet services. The other factor is that mostly women don't access Internet at public places in Kashmir as it has been banned by women separatists' leaders. Several other possible causes like lack of Internet facilities, lack of time, personal interests, etc. may also be responsible for these differences. However, with the passage of time the differences will shrink when the Internet will enter all houses and women will use its services without any threat or tension. The opening of separate cyber cafes for women can also help to overcome this difference.

Female students use the Internet more than males for information and educational needs. It reveals that female students adopt the Internet technology in a manner that fits well with their needs as compared to males who are more likely to use the Internet for diverse purposes. Male students use Internet more for communication and recreational purposes than females. It indicates that male students depend on the Internet for personal and entertainment needs at higher rates than females and continue to exploit many Internet services more intensively than females. Males are also are dominant in playing online games, accessing news groups, participating discussion forums and jumping social networking sites whereas in contrast, females have less online social relations, mostly communicate with their family and friends (Goodson, McCormick, & Evans, 2001). The female students in Kashmir also hesitate to expose them in online environment. Overall the students, irrespective of gender variations, use Internet mostly for Information and education purposes.

In online information seeking, the differences are slight in most of the cases. However, females are more likely to experience the problem of the Internet literacy than males. Institutions of higher education should take note of these problems and take steps to overcome them through Internet awareness/literacy programmes and workshops. These programmes should focus on Internet operating skills, Web search tools, Internet searching problems, etc. Separate workshops and programmes should be conducted for female students to upgrade their Internet literacy skills. These programmes wouldn't only help to develop the Internet literacy but will be also helpful in converting non-users to users.

FUTURE DIRECTIONS

With the advancement of Internet technology, some of the differences between genders may disappear while others may shrink. However, some of the differences pertaining to their attitude and behaviour will exist in future as well. Therefore, it is suggested that future studies should focus on personality variables.

LIMITATIONS

Despite providing a meaningful insight on the Internet use across genders, the limitation of the study is its sample size and sample frame which consists of college students. This makes it difficult to generalise the results across different sections of the society.

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