Internet Use by the Faculty Members of
Public Sector Universities in Peshawar

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Abstract

The purpose of this study is to investigate the use of the internet by faculty members for their academic activities and bring forth the key factors influencing their utilization of this technology. This investigation seeks to answer the following questions. How does faculty utilize the Internet in their teaching, research, and communication? Is there any correlation exists between the available resources of the university, internet use of faculty, discipline, gender and computer use level. What are the main hurdles faced by university faculty with regard to their internet usage. The survey includes all 6 public sector universities located in Peshawar, the capital of the province of Khyber Pakhtunkhwa, Pakistan. A self-administered questionnaire was utilized to collect the data. The study population consisted of 1346 faculty members. A random sample consisted of 550 faculty members was drawn to whom the questionnaires were administered out of which 502 questionnaires were received back. The overall response rate was 91.27%. The study concludes that the internet is a best resource for study and teaching and the university faculty members very often utilized it for academic purposes.

Keywords: Internet Use, Online Technology use, Internet use behaviour of university teachers.

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Introduction

Internet, in the present world, is the most popular and effective tool for learning, information retrieval and dissemination, teaching, communication, and research. Browsing the internet reveals that it contain a variety of informational stuff on a number of topics. The invention of the internet technology is one of the greatest events of the previous century. In universities and other educational institutions the internet is used and expanded to a greater extent and its use is increasing on daily basis. It is being integrated into classroom activities in almost every university and DAI all over the globe. Internet, with its multifaceted features and tools, facilitate everyone to have an insight into the world of information and pursue research activities quickly and efficiently.

Internet adoption in Pakistan started in the 1990s. Universities and Degree Awarding institutions (DAIs) were among the early adopters of this technology. By the arrival of the 21st century, the internet spread to every university, college, DAI and even secondary schools in Pakistan. Despite of its widespread in Pakistani academic institutions as one of the major vehicle of teaching, learning, and research, very little has been investigated to know the factors related with its use by the university teachers for learning, teaching and research. Every year a huge amount of budget is allocated by the HEC and universities in order to expand Information Technology across university campuses. This huge amount of budget is normally spent on the provision of hardware, computer laboratories, and infrastructure in order to provide speedy internet access. The issue related to the internet use by faculty members of the public sector universities of Pakistan in general and Peshawar in particular have been inadequately examined keeping in mind the rapid growth of internet adoption by faculty members. The main aim of this study is to investigate the use of the internet by faculty members for their academic activities and bring forth the key factors influencing their utilization of this technology. This investigation seeks to answer the following questions:

1. How do faculty members utilize the Internet in their teaching, research, and communication?
2. Is there exist any correlation in the resources of the university, faculty use of the internet, discipline, gender and computer usage level
3. What main barriers the university faculty faces in using the internet.

Literature Review

Since the dawn of the present century, the use of information technology has shown a significant growth around the globe. The use of computer technology,

especially the internet, has changed the lives of millions of people. Internet is a valuable source for study, teaching and research for both students and faculty. Modern resources of the Internet like email, www, search engines, online databases and social media tools can be used in all stages of research. Thus the Internet technology is an indispensable tool for faculty members for study, teaching, instructions, and research (Zar-ee, 2011).

Bradshaw cited by Al-Mobariz (2007) investigated the purpose and skills of internet use by faculty members from universities and colleges in the southern United States. His findings showed positive attitude of the faculty members towards internet use in their academic pursuits. They expected to benefit from the internet for background research more this year than the previous year and more next year than the present year. Due to this trend Bradshaw concludes that the demand for more information by the internet users will increase in the days to come. He stated that in future more informational material will be uploaded over the internet by the information providers in a way easily and freely accessible. The findings indicated that university faculty members considered the internet as an indispensable tool for study teaching and research. Faculty members would likely access the internet more frequently as they become aware of how the internet would be helpful to them.

The findings of Al-Ansari (2006) indicated that most of the faculty members prefer to use email, www resources, and search engines mainly for research, communication and publication. Internet helped faculty members to save time, search current information and cooperate with friends and colleagues. Main problems face by faculty members were lack of time, slow and poor internet connectivity and lack of access from home. The study reported that faculty members were eager to improve their internet usage skills through formal training.

Becker (2000) and Dhurlabhji and Fusilier (2005) found that junior teachers use internet more professionally than senior teachers. Citing Rozgar, the study stated that more than 62% of faculty members in the United States and Canada use the internet for receiving and transferring online information. Becker (1999) found that what makes young faculty members more likely to be frequent internet users is not their youth *per se*, but their greater comfort as a result of having grown up with ever changing Information Technology

A study conducted by Bhatti (2010) on internet use among faculty members in the changing higher education at the Islamia University Bahawalpur, Pakistan, reported that internet is used by university faculty members for teaching and research. She indicated that faculty of science disciplines make most use of the internet as compare to other disciplines. Main problems faced by faculty members

while using the internet were reported to be lack of sufficient number of computers, time management, slow speed, and lack of access from home. Her study confirmed the findings of Lazinger, Bar-Ilan, and Peritz (1978) who found that internet use was higher among faculty members in the sciences than among those in the humanities or social sciences.

Mansoor (2007), conducted a study to know the internet use behavior of education faculty members in the universities of Jordan. His result indicated that Assistant Professor followed by lecturers were more satisfied with their internet use for academic work than Associate Professors and Professors. He reported that there was a significant difference across age. All of the respondents expressed positive attitude towards such use. Main barriers in the internet use by faculty members were identified as access to the internet, Internet content, administration related limitations, lack of time, and affordability related issues.

The findings of Taghreed (2009) revealed that female faculty members have positive attitudes towards using computer technologies. The most frequently used computer applications by the female faculty were: e-mail, internet and word processing. He found that lack of technical support, lack of effective training, lack of equipment and infrastructure and lack of administrative support were the main barriers faced by majority of the respondents. The results revealed that the demographic variables that have an influence on female faculty members' attitudes towards using computers were age, years of experience with computer technologies, subject taught, academic degree, access to computer at the office, access to the internet, computer skill levels and English language proficiency. Thus confirming the studies of Spotts, Bowman, and Mirtz (1997), Lampe and Chamber (2001) who also found the same demographic variables that have an influence on female faculty members' attitudes towards using computer technology. The study of Taghreed (2009) presents several conclusions and recommendations to improve female faculty members' use of computer technologies. The study revealed that female faculty members needs technical support services unit, more training, equipment and infrastructure, more administrative support, time for learning about computer technologies to increase their use of computers.

Methodology

The survey includes all 6 public sector universities located in Peshawar, the capital of the province of Khyber Pakhtunkhwa, Pakistan. A self-administered questionnaire was utilized for data collection. The study population consisted of 1346 faculty members. A random sample consisted of 550 faculty members was drawn to whom the questionnaires were administered out of which 502

questionnaires were received back. The overall response rate was 91.27%. A number of hypotheses were frames in order to investigate the adoption of the internet and its usage by faculty members of the public sector universities located in Peshawar.

Hypotheses

1. H1 Faculty members of the public sector universities in Peshawar use the Internet more often for communication than for teaching and research.
2. H2 There exist a positive relationship between the existing university resources and internet usage of the faculty
3. H3 Faculty members of Science disciplines use Internet more frequently than Arts, Social Science and humanities disciplines
4. H4 Young university faculty use internet more often than senior faculty
5. H5 There exist a positive relation between Internet use by faculty and their computer use skills.
6. H6 No relationship exists between faculty members gender and internet use level.

Respondents' demographics

Five hundred and two university teachers (73.5% were male, and 26.49% were female) with a median age of 31 to 40 years and represented various academic designations as Professors, Associate Professors, Assistant Professors, and Lecturers, as shown in Table-1, participated in the survey.

Internet and computer use proficiency of respondents

About half of the respondents (51.9%) indicated that they use computer for two or more hours a day. 88.84% of the respondents reported that they use MS Office more frequently, followed by software use pertaining to academic work (42.62%). Programing software were used by 42%, while 6.77% of the participants use web development software as is displayed in Table -2 which summarizes statistics related to computer use by faculty members.

Demographic information pertaining to the internet use is shown in Table-3.Majority of the participants (71.31%) were of the opinion that Internet play a very important role in their academic activities and that it is a major sources of help for them. Most of the respondents (83.46%) were using the internet for four or more years. As far as internet proficiency of the respondents is concerned, It

was reported by more than 86% of the respondents that their internet proficiency levels were Moderate to high. While 62.74% of the respondents spent more than one hour per day over the internet.

Table-1: Demographics

Demographics	Characteristics	Respondents	%age
Academic Rank	Professors Associate Professors Assistant Proffesors Lecturers	48 58 182 214	9.56 11.55 36.25 42.62
Age	25 – 30 31 – 40 41 – 50 51 – 60 61 and above	62 212 174 50 4	12.35 42.23 34.66 9.96 0.79
Experience	1 – 10 11 – 20 21 – 30 31 – 40 41and above	232 156 98 12 4	46.21 31.07 19.52 2.39 0.79
Gender	Male Female	369 133	73.50 26.49
Universities	1. University of Peshawar	162	32.27
	2. KPK University of Engineering & Technology Peshawar	58	11.55
	3. KPK Agricultural University, Peshawar	96	19.12
	4. Shaheed Benazir Bhutto Women University, Peshawar	32	6.37
	5. Khyber Medical University, Peshawar	102	20.31
	6. Islamia College University, Peshawar	52	10.35
Discipline	Science and technology	196	39.04
	Social Science	306	60.95

Table-2: Internet and computer use proficiency

Variables	Category	No. of Respondents	%age
Hours spent Per day in using computer	Less than 1hr	58	11.53
	1-2 hrs	183	36.45
	3-5 hrs	180	35.85
	More than 5 hrs	81	16.13
Use of computer applications	MS Office	446	88.84
	Computer programing	42	8.36
	Web development	34	6.77
	Softwares	214	42.62
Proficiency level in computer use	Low	9	1.79
	Low - Moderate	71	14.14
	Moderate – high	198	39.44
	Moderate	152	30.27
	High	72	14.34

Table-3: Demographic data related to internet usage

Variables	Category	No. of respondents	%age
Total Number of years of internet usage	Don't use at all	4	0.79
	Less than 4 yrs	79	15.73
	4 - 8 yrs	182	36.25
	9 yrs or more	237	47.21
Time spent on Internet the per day	Less than half an hour	49	9.76
	30 to 60 mnts	138	27.49
	1 to 3 hrs	229	45.61
	4 hrs or more	86	17.13
Internet help in the academic work	No help at all	9	1.79
	Little help	26	5.17
	Some help	109	21.71
	Major help	358	71.31
Internet proficiency	Low	20	3.98
	Low to moderate	50	9.96
	Moderate	141	28.08
	Moderate to high	176	35.05
	high	115	22.90

As shown in Table-4, majority of respondents 85.05% received 20 or less emails per day. While 88.64% respondents sent 10 or less emails per day.

Table-4: Number of emails received and sent

Variables	Category	No. of respondents	%age
Number of Emails received	Less than 10	248	49.40
	10 to 20	179	35.65
	21 to 30	48	9.56
	More than 30	27	5.37
Number of Emails Sent	Less than 5	285	56.77
	5 to 10	160	31.87
	11 to 15	42	8.36
	More than 15	15	2.98

Findings and Results

Purpose of Internet Use

Hypothesis one was that University teachers use the Internet more often for communication than for teaching and research. To test this hypothesis Spearman correlation between Internet use and the three scales for research, communication and teaching was used. As is shown in Table-5, a significant correlation was found between Internet uses and teaching, followed by communication, and then research. Thus, hypothesis-1 wasn't supported, as faculty members in this sample displayed higher interned use in teaching than in communication or research.

Table 5: Purpose of Internet Use

Purpose	Spearman Co-relation	Standard error	Sig
Research	0.35	0.04	0.00
Communication	0.37	0.04	0.00
Teaching	0.38	0.04	0.00

Factors affecting internet use

Available university resources

Hypothesis No. 2 states that there exist a positive relationship in the existing university resources and internet usage of the faculty. Again Spearman correlation was used to test this hypothesis. The scale for Internet use measures experience of faculty members with duration of internet use, level of interne use proficiency and email use. The scale for the availability of university resources measures the perceived available technology level, technical support, training, and recognition of efforts. The scales range from 1-4 with 1 is for strong agreement and 4 is for strong disagreement. Table-6 further elaborates Spearman correlations for the above stated scales.

Table-6: University resources availability

	University resources	Approximate Sig. level
Use of Internet	0.02	0.66
Daily use of the Internet	0.03	0.46

Although a positive correlation was found in the sample pertaining to the use of the Internet scale i.e. co-efficient=0.02, and approximate significance level= 0.66, it was not observed to be significant at the p<.05 level. Moreover co-relation with self-reported daily internet use was also examined. Daily use was measured on 1-4 scale where 1=<30 minutes. 2=30 minutes to 1 hour, 3= 1 to 3 hours, and 4= 3 or more hours. Thus a negative correlation was observed i.e. co-efficient= -0.03, which shows that when faculty members perceive more availability of resources and support, there is corresponding increase in the use of the Internet. However, this correlation looks weak and not significant statistically at the level of p<.05. Thus the hypothesis was not supported.

Discipline

Spearman Correlation was found significant between the Internet usage and disciplines that is sig. level at p<0.001. University faculty in science and technology disciplines indicated higher use of the internet as compared to other disciplines. A significant correlation was found between the Internet use and the discipline. Thus hypothesis number three was accepted.

Age

Using spearman correlation between use of the internet and age of the faculty members, hypothesis-4 was analyzed. The correlation co-efficient between both variables was 0.11 which shows a weak correlation. The significance value of this correlation is less than .05, therefore it can be inferred that there exist a significant relationship between Internet use level and age. This correlation is positive that's why it can be concluded that the senior faculty uses the internet very less as compare to the junior faculty. Thus the hypothesis was confirmed at p<.05.

Computer use level

Correlation related to computer use level was significant. The Spearman correlation p<.05 between computer use and Internet use was -0.46 and between the participants perception of their level of computer proficiency and Internet use was -0.48. Thus the hypothesis is supported. Findings show a positive relationship in faculty's usage of the internet and their computer use level and proficiency.

Gender

Faculty members were compared by gender to know their Internet usage and computer usage. Somers *d test* for ordinals was utilized. No use variable was found significant at the level of p<.05. Thus hypothesis number six was confirmed. The findings indicated that there existed no relationship between faculty members' gender and their internet usage level.

Internet use problems

Table-7 indicates problems related to the internet use by faculty members. A four point scale ranging from 1 to 4 was used i.e. 1=Strongly agree, to 4=strongly disagree. Low rated problems includes "inaccurate information" (Mean=2.42, Std dev. =0.752), Information overload (Mean=2.43, Std Dev.= 0.882), Inaccessible websites (Mean=2.15, Std Dev.= 0.771). Problems with highest rate were Slow speed (Mean= 1.60, Std. Dev.=0.730) and Copyright problems (Mean=2.02, Std. Dev.= 0.886).

Table-7: Internet use problems

Problems Category	Mean	Standard Deviation
Inaccurate information	2.42	0.752
Information overload	2.43	0.882
Inaccessible websites	2.15	0.771
Privacy problem	2.03	0.798
Copy right problems	2.02	0.886
Slow speed	1.60	0.730

Discussion

Findings of this study indicate that the internet is used by faculty members for teaching more than for research and communication purposes. Previous studies on internet use by faculty members, conducted particularly in developing countries, showed that internet was used by faculty members mainly for email and communication (Patitungo and Deshpande, 2005) comparing to research and teaching purposes. The integration of the internet in research and teaching process generally show a higher utilization. This show that in contrast to the studies conducted previously that showed that the adoption of the internet is in its infancy (William and Nicholas 1997, Lazenger et al 1997, and Vaidyanathan, Rochford and Agarwal 1998) the internet is now used very frequently because of the fact that information resources are now more accessible to university teachers.

In analyzing hypotheses, our investigation indicated that there exist no correlation between the internet usage and the available university resources. Thus finding of our study corroborates the findings of the studies conducted earlier that reported organizational factors have minimum effects on faculty usage of the internet. This is also evident in our study as majority of participants showed moderate to high level proficiency in internet use and other characteristics of previous internet adopters. Most of the previous studies reported that early adopters of the internet were not totally dependent on the resources and services of their universities and tried to have an access to the internet either at home, cafes, or any other places; our study also found the same. This study confirm the findings of earlier studies that science and technology faculty use the internet more often than the faculty of other disciplines (Flaxbart (2001), Lazenger, Ilan, and Peritz (2003) and Abdulraheem and Al-Musavi (2003). As far as age of the faculty members is concerned, this study confirms findings of the past studies that reported that young university faculty use internet more in their study, teaching and research. As far as

gender differences in respect to the internet adoption are concerned, the findings of this study showed that sex is not a significant factor in the internet adoption and usage level. As for as skill related to computer usage of the faculty members is concerned, a heavy correlation between faculty members' internet use and computer use level was found. The findings show the necessity to consider training and support for university faculty in TIP (Technology Integration Planning).

Participants gave varied responses when asked about the barriers they faced while using the internet in the academic environment. Main barriers reported by the respondents were slow and dropped connection followed by the problem related to copyright, intellectual property, and privacy issues. This also confirmed findings of other related studies conducted by Al-Asmari (2005), Al-Ansari (2006), Raza and Upadhyay (2006), Adika (2003), Nazim (2008), and Mishra (2009) who found same barriers faced by faculty members in connection with internet use. As far as quality of information and internet use skill level of the faculty members in connection with internet is concerned, the mean ratings as found in this sample were very much similar and did not alter significantly in regard to gender, age, or discipline.

Over all findings of this research study are significant to be considered by the university administrators and policy makers for higher education in Pakistan in general and Peshawar in particular. Previous studies on internet use and its adoption conducted elsewhere indicated low internet use rate by levelling the blame on university faculty; either they are still using traditional methods in teaching and learning, charged with the terms as resisters or labelled with their negative technological attitude. These kinds of explanations have their bases in poor understanding of different university faculty with different requirements. The challenge to increase benefits taken from the internet must focus on individual needs of the faculty members. University authorities and policy makers are therefore advised to take faculty members with them in making any decision regarding ICT use in an academic setup. If they are taken in confidence in the initial stage of policy making about ICT use, their needs are expected to be met, and this should permit for increased level of efficient integration of ICTs and the Internet technology that fulfil their specific requirements.

This study presented an extensive account of problems in the utilization of the internet and the perceptions of faculty members towards it. A technological solution doesn't mean to be the quick fix to every academic problem and issue. It is known to everyone that technological solutions don't mean to improve inadequate learning and teaching methods. Therefore it is important to focus on to adopt the right technological solution that is in line with the academic environment and the

faculty involved. The human factor must always be kept in mind as the beginning point on making a particular decision on how the Internet and other online technologies can be adopted to improve teaching, learning and research efforts. Faculty members must be provided the opportunities to take part in decision making regarding the appropriate use of technology in their academic disciplines.

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