Cyber-Ethics and the Perceptions of Internet Users: A Case Study of University Students of Islamabad

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This research aims to investigate the contemporary situation of 'cyber-ethics' that is prevailing among the users of the internet. The cyber world seems to be a second or virtual world for all of those who use the internet. Three diverse perspectives of cyber-ethics, i.e. Professional, Philosophical and Descriptive give a better understanding of how different philosophers, social scientists and even computer professionals view cyber-ethics and how the advancement in the field of technology can be embedded into the social system. Along with the advantages of being 'connected' to the world at large, it also brings some disadvantages on the ethical side and it is no astonishment that Pakistan is also not liberated from the cyber space dilemma. A survey was conducted in four major universities of Islamabad in order to measure the perception of internet users regarding the concept of 'cyber-ethics'. The survey was carried out on 304 respondents (152 males, 152 females) and a detailed questionnaire was used as the prime tool of the survey method. Although the perception of male and female students differ from each other in various regards (as supported by the Ethical Theory of Relativism), the results reveal that there is a positive attitude of respondents towards the main concept of cyber-ethics on the whole, but there is still a long way to go in order to obtain a better understanding and to adopt the proper ways of using cyber technology.

Keywords: Cyber Ethics, Internet, Islamabad, Pakistan

Introduction

The use of technology and the internet is prevalent in the modern world, but it is more important to make the youth aware of the proper usage of this gigantic path of knowledge that is located in 'cyber space'. The aim of this particular research is to analyze the current situation of cyber-ethics and to measure the perception of internet users (university students) regarding cyber ethics. Actually, ethics are those standards by which human behavior is examined and which social actions are formulated. An ethic is basically a thought process that determines the actions of an actor. Although technology has changed the mediums, it cannot alter the fact that decisions are made by us every day. Cyber-ethics is just another aspect of ethics from the perspective of the computer and the internet.

Cyber-ethics is basically the study of the ethics that are relevant to computer networks which is supposed to cover the user's behavior and its impacts on individuals and society. Bynum (2000) defines cyber-ethics as an area of applied ethics which investigates the social and ethical impacts of communication as well as information technology. Schwartau (2001) views cyber-ethics as ethics on computers and just a different method of looking at ethics. Nowadays, virtually every society is heavily dependent on technological-mediated communication. Physical borders are no longer boundaries to this information and communication flow and it is no more astonishing that Pakistan is also not liberated from the cyber-space dilemma. (Mohiuddin, 2006).

The emergence of the internet in Pakistan can be traced back to the year 1995 when Digicom initiated an internet service in Karachi. The availability of computers and accessibility to internet connections offer extraordinary opportunities to become a part of the connected world. The hierarchy of the usage of the internet in the major cities of Pakistan can be seen as highest in Karachi, then Lahore and Islamabad. (Mohiuddin, 2009). Its growth has been quite rapid and, currently, it accounts for approximately twenty million persons who access the internet in Pakistan. Students are one of the major consumers in this regard. Internet use is most widespread amongst youngsters (Hoffman, Novak & Schlosser, 2000) and the majority of them take it as practical, quick, user-friendly significant, trustworthy and precise.

It is quite obvious that the excessive use of the internet ultimately brings with it many social and ethics-related issues. Pakistan has a legal and authorized framework to address to the issues related to cyber-ethics and cyber crimes. The Electronic Transaction Ordinance 2002 is a thread to this scenario. It was passed by the Pakistan Government with the objectives of identifying, recognizing and facilitating credentials, records, important information, communications and transactions in electronic form. Pakistan has also joined an exclusive crew of countries that provide an essential framework and the impulse for the expansion of electronic commerce in Pakistan.

Furthermore, other legal frameworks, including The Electronic Crime Act 2004 address issues related to cyber crime, the National Response Center to stop internet misuse and the Accreditation Council to ensure strict licensing criteria in a variety of aspects, such as personal integrity, security and procedures (Mohiuudin, 2009). Although the social and ethical issues on the part of cyber-ethics cannot be entirely avoided, it is the need of the hour to look deeply into the cause and effect of these issues and to formulate a comprehensive framework in order to deal with the related problems.

Cyber-Ethics: The Historical Milestones

Although the humble beginning of cyber-ethics took place in the late 1940s, the evidential beginning of computer ethics can be traced back to 1950 when Norbert Wiener published a book entitled, "The Human Use of Human Beings". The book laid down the basics of computer ethics and Norbert Wiener became the father of 'Computer Ethics'.

In the mid-1960s, the illegal use of computers had been investigated by Don Parker, a computer scientist. Parker says that *"it seemed that when people enter the computer center, they leave their ethics at the door"* (Bynum, 2001: p.110). Examples of computer crime and other illegal computer-related activities were also collected by Parker. In 1968, Parker published a piece named "The Rules of Ethics in Information Processing" which then led to the development of the First Code of Professional Conduct of the Association for Computing Machinery. During the same period of time, a new computer program 'ELIZA' was created by Joseph Weizenbaum. During the next two decades, several books, articles, speeches and workshops produced by Parker gave a new dimension to 'cyber-ethics' and became another milestone in the field of computer ethics in general (ibid). In the middle of the 1970s, Walter Manner noticed a connection between computer ethics and medical ethics cases. He argued that the involvement of computers in medical ethics cases tended to add new ethical features to the case. Manner started to use the term 'computer ethics', which refers to the ethical problems generated by computer technology. (Bynum, 2001). Basically, he visualized the field of applied ethics as being analogous to medical ethics and business ethics. In the 1990s, a massive growth in the field of computer ethics was observed due to the involvement of a wide variety of scholars, new courses, journals, articles and research centers.

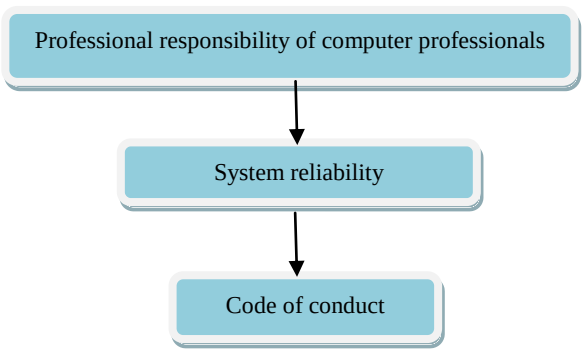
Cyber-Ethics -Three Diverse Perspectives

Cyber-ethics, as a branch of applied ethics, investigates practical, ethical problems. (Tavani, 2009). In order to understand the diverse field of cyber-ethics as a branch of applied ethics, the concerned scholars and professionals give three different perspectives: The professional ethics perspective, the philosophical ethics perspective and the descriptive ethics perspective.

The Professional-Ethics Perspective

Tavani (2009) is of the opinion that this perspective is closely associated with the disciplines of Computer Science, Engineering and Information Science. The kinds of issues that are examined in this perspective are given in the following Figure 1.

Figure 1: The Professional Ethics



A computer professional's main role is to design, develop and maintain computer hardware and software. As such, related to the various cyber-ethics issues that exist, the professional ethics perspective considers those which deal with the computer professional's major tasks. Cyber-ethics, being a branch of professional ethics, mostly draw analogies from other professional fields such as Law and Medicine. It has been pointed out that in other professional fields the major focus of analysis is concerned with the moral responsibilities that ultimately affect the individuals as members of those professions. The same justification can be given for cyber-ethics, i.e. that the primary focus of cyber-ethics should be on the issues that are related to moral responsibility and that can eventually affect the computer professionals.

Gotterbarn (1991) is an activist who holds the view that the professional ethics perspective is the best one when comprehending cyber ethics overall. He argues that the primary focus of computer ethics should not be on the extensive social and moral implications of the computer technology, but that it should revolve around the issues of professional responsibility. Gotterbarn (1991), notes that in the past hundreds of years, certain inventions/technologies such as the printing press, the automobile and the airplane have overwhelmingly changed peoples' lives. However, despite having noteworthy and radical effects related to these technologies, we don't have any "printing-press ethics", "automobile ethics" or "airplane ethics". Gotterbarn (1991) suggests that the field of computer ethics should not be responsible for issues other than those that influence computer professionals. Many critics, including philosophers, social scientists and computer practitioners argue that Gotterbarn's view of computer ethics as taken from the perspective of computer professionals seems to be quite narrow. However, some others who favourably regard Gotterbarn's view suggest that a broader or extensive model is needed.

With the advancement that has been made in computer technology, Gotterbarn's idea seems to be limited because this technology is now virtually everywhere and the ethical issues generated by the use of the computer is affecting everyone, including professionals and non- professionals (Tavani, 2009).

The Philosophical-Ethics Perspective

The perspective which sees cyber-ethics as a field of philosophical ethics is associated with the disciplines of Philosophy and Law. The range of issues that are addressed in this perspective include privacy and secrecy, 'intellectual property' and free speech (Tavani, 2009). The difference between the professional-ethics perspective and the philosophical-ethics perspective might look arbitrary but, for some particular purposes, a distinction can be drawn between the two by examining the approach that each perspective takes in addressing the prevailing ethical issues. Professional ethics typically deals with the concerns involving responsibilities and obligations that affect individuals as members of any profession. However, the philosophical-ethics perspective deals with broader concerns including public or social policy and individual behavior that ultimately affect everyone in the society. It can be observed that issues such as privacy, security, free speech and 'intellectual property' can affect anyone, even those who have never used computer technology. (Tavani, 2009). In the previous discussion regarding Gotterbarn's view he argues that as 'automobile ethics' or 'airplane ethics' do not exist, these technologies have had an overpowering impact on our society. Moor (2001) disagrees with this point and notes that the introduction of automobile or airplane technologies have not fundamentally affected the policies and norms of the society the way that computer technology has; naturally, we need to create room to accommodate the new emerging technologies.

The Descriptive-Ethics Perspective

Another important perspective in the realm of cyber-ethics is that of 'descriptive ethics', which is closely associated with the disciplines of Sociology and Behavioral Sciences. Within this perspective, the major issues considered concern the impacts of cyber technology on governmental, educational and financial institutions and also on the socio-demographic groups (Tavani, 2009). Descriptive Ethics aims to describe the characteristics of a particular moral system as well as how the members of different groups and cultures respond towards particular ethical issues.

To understand cyber-ethics from the perspective of descriptive ethics, one may describe the sociological characteristics of any moral issue such as the impact of certain technology on a particular community. For instance, if it aims to analyze the moral issues related to 'digital divide', firstly there is a need to focus on its impact on different socio-demographic groups that may include social class, race and gender. If we explore the issues such as the use of cyber technology by poor or rich, black or white and male or female, we will fall into the category of descriptive inquiry. However, if we further investigate whether the access to technology for some groups compared to others seems unfair, it will come under the category of normative inquiry. Many social scientists and sociologists who function in the field of cyber-ethics

highlight the benefits of the descriptive-ethics perspective and believe that we can have a better understanding of many normative characteristics and implications if we initially focus on the descriptive aspects of any ethical issue. Huff & Finholt (1994) argued that the normative questions themselves become clearer if an understanding of the descriptive aspect of the social impacts of technology will be given.

The different and diverse perspectives of cyber-ethics give a better understanding of how different philosophers, social scientists and even computer professionals view cyber-ethics and how the advancement in the field of technology can be embedded into our social system.

Statement of the Problem

The increasing trend of being connected with the internet has also come up with several concerns from the ethical point of view. This study aims to chalk out the ethical issues and problems that are faced by the participating users of the 'cyber world'. The particular issues that are meant to be addressed are: (a) the perceptions of internet users regarding cyber-ethics, (b) the internet user's level of knowledge of 'cyber-ethics' and (c) the variation of perception and level of knowledge according to the demographics of the said users.

Objectives

1. To analyze whether users are familiar with the term 'cyber-ethics'.
2. To analyze the current situation of the prevailing cyber-ethics that are used by the participant users of 'cyber space' in Pakistan.
3. To analyze the pattern of behavior that one follows while being a member of the 'cyber world'.

Literature Review

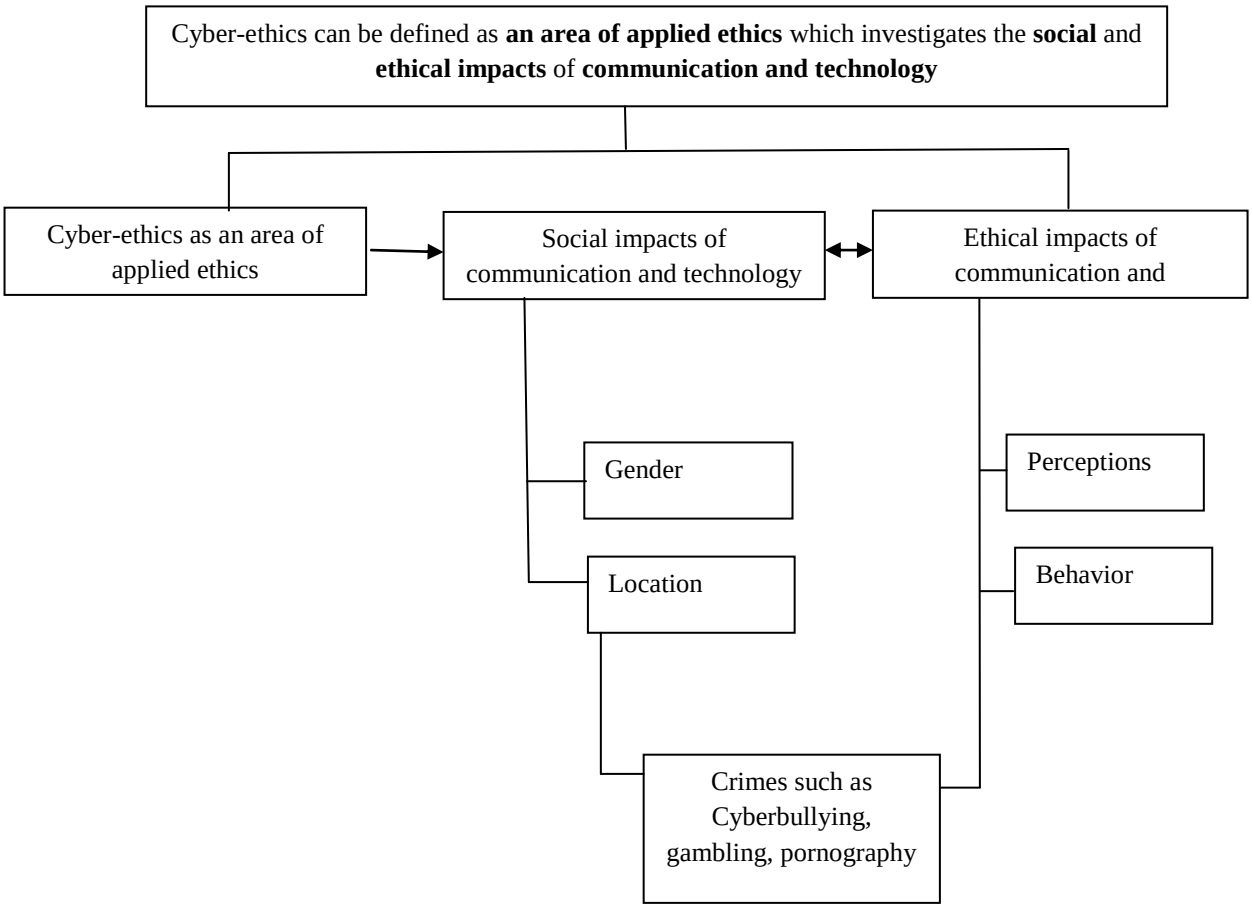
The Conceptual Model

The classical definition of cyber-ethics that was given by Moor in 1985 has opened the way for many other communication and information technology scholars to investigate various facets of cyber-ethics. According to Moor (1985), Computer Ethics is "the analysis of the nature and social impact of computer technology and the corresponding formulation and justification of policies for the ethical use of such technology". He says that the innovative and increased choices given by computers are the root cause of the ethical problems that exist in the cyber world. These problems are quite different in nature as compared to the traditional mediums and require new frameworks and policies. The lack of existing policies regarding behavior creates a 'policy vacuum'. To be more particular, he quoted an example of 'intellectual property'. Apparently, it seems quite simple that a policy is created for a computer program in order to protect it as a piece of intellectual property but in the practical sense it breeds a number of questions: what is a computer program and can its idea or algorithm actually be 'possessed' personally? Moor argues that the existing ethical theories cannot fulfill the purpose of completely answering these questions, so a new framework, i.e. "computer ethics", should be considered in order to address these queries.

Johnson (1985) came up with a very significant and useful book entitled, *Computer Ethics.* This publication covers many of the diverse aspects of computer ethics such as an overview of computer ethics, philosophical ethics, professional ethics, online ethics, and the issues of privacy, property and accountability as well as the social implications of internet ethics. Unlike Moor and Manner, Johnson does not consider 'internet ethics' as an entirely a new phenomenon. She tried to prepare a foundational base for computer ethics as an unnoticeable correlation between technology and ethics. Why do we relate technology and ethics and how can technology affect human actions and interactions? Johnson tried to answer these questions in a very precise manner. She argues that when we talk about ethics, it means we are always talking about human actions. Technology and ethics are highly correlated because technology makes it practical for humans to perform in a way that they couldn't without technology. The instrumentation and application of human actions have been largely covered in the field of computer ethics. Hence the publication had proved to be very helpful in establishing computer- ethics concepts and in bringing the issues and controversies into the limelight of ethics-and-technology discussions.

J. Vesna & Niveditha (2012), studied ethics in cyberspace from a philosophical point of view. For them, parents, families and religious bodies are the primary source of a child's learning of ethical education while schools and other educational institutions are responsible for further emphasizing and polishing these moral/ethical values. With the advent of new technology, it is vital to teach the traditional values in an innovative manner to make children aware of how to deal with the new technology in an ethical way. The researchers intended to study the general misconceptions about cyber-ethics among the students and tried to explore the basic ethical concerns that students have whenever they need to make any ethical decision.

Figure 2: Conceptual Model



The research was qualitative in nature and the data was collected through semi-structured interviews. Two primary, two middle and three higher secondary schools were selected for the field study and, altogether, forty-two staff members were 'interrogated' regarding the students' understanding of internet privacy, property, plagiarism, copyrighting and hacking. The study revealed a high level concern of teachers about their students' perception of the concept of privacy. They report that they must use the new technology in a manner that should not intend to violate the limits of privacy. Issues like plagiarism and hacking were not really clear to the students but they indicated that they would take it as an achievement if they were able to crack any code. The researchers argued that the ultimate goal of technology-based literacy is to enable the young generation to build their own resourceful and critical abilities. By doing so, they will be able to make their own choices in order to adjust themselves into a technologically-determined century (Cordes, 2004). Thus, the study concludes that a good and clear understanding of cyber-ethics will help students to behave in a more ethical manner. The incorporation of cyber-ethics in the school curriculum can further enhance the ethical use of the internet among the students.

In reference to the conceptual framework that has been developed for the deep understanding of cyber-ethics from different views has opened a way for many of the researchers to investigate more on the topic. Although he previous researches conducted earlier laid the foundations of this diverse topic but this is the need of the hour to further explore the topic with the advancement in technology and changing aptitudes of internet users. In this regard, this particular research will surely be contributing in getting the better understanding and clearer picture of the prevailing concepts about cyber-ethics among internet users so that the required changes can be implanted into the social system.

Theoretical Framework

The Ethical Theory of Relativism

The Theory of Relativism states that all moral scales are relative. The morals of one person may not be equal to the morals of another person. This theory was developed in the 20th century by M. Velasquez, C. Andre, T. Shanks and J.M. Meyer. The Ethical Theory of Relativism has no universal moral standards that are applicable for all at all times. Basically, the foundation of ethical relativism holds that ethical values, principles and moralities are relative and differ according to the culture, depending upon the situation and environment in which they need to be applied (Russel, 2003). Pecorino (2000), classified "relativism" in three diverse groups: Cultural Relativism, Descriptive Ethical Relativism and Normative Ethical Relativism. Cultural Relativism holds that the behavior and actions of people vary according to their culture. This variation might be influenced by the preceding generations. Descriptive Relativism states that the variation in the actions and behaviors of people may differ according to the sense of morality, customs, traditions and ethical principles of their society. What is acceptable in one society may not be acceptable in another. It varies from culture to culture and tradition to tradition. However, Normative Ethical Relativism claims that no moral principles are universal, the 'rightness' and 'wrongness' of actions may vary according to societies and cultures. The fundamental principles of ethics seems to be always relative. (Pecorino, 2000).

Martin and Woodward (2011), studied computer ethics by conducting a cross-cultural comparison among American and European students of Information Technology (IT). They mentioned that the use of computers and the internet has become a significant part of students' daily routine and now seems to be as ordinary a practice as using the telephone or watching television. Due to this frequent usage, ethical issues are continually escalating. The researchers aimed to explore the prospective differences in the ethical assessment of IT-related scenarios among the students from the U.S.A. and some European countries. A survey was conducted in which 20 scenarios for a total of 22 items were presented and each of the participant's encountered two different scenarios in which an anonymous person takes a decision regarding the related ethical dilemmas. The participants needed to submit their response as to whether the decision that was made by the anonymous person was either (i) ethical (ii) acceptable (iii) questionable (iv) unethical or (v) constituted a computer crime. Thus the findings of the study revealed that there is a significant difference between American and European students regarding their perception of ethical-related issues as the American students assessed 13 out of the 22 items as being unethical in nature. The same difference was also reported on the personal level regarding the ethical decision- making of both the American and the European students.

Methodology

Research Design

Research Design is basically the plan, overall scheme or a structure that aims to acquire the answers of research questions**.** This scheme includes an outline of from where to start up to the final analysis. Kerlinger (1985) states that Research Design has two basic functions: (a) to provide answers to the research questions and (b) to control variance. Since all of the activities involved in the research finally gather with the common purpose of answering the research question, this particular research was quantitative in nature and involved a survey taken among university students of Islamabad.

The Universe

Walizer & Wienir (1978) define "universe" as the population which is a group or class of subjects, variables, concepts or phenomenon under study. The 'universe' for this particular research comprised the universities of Islamabad. Out of almost thirty government and private- sector universities, four were selected. These were the International Islamic University, the Quaid-e-Azam University, the National University of Science and Technology (NUST) and COMSATS Institute of Information Technology.

Unit of Analysis

The unit of analysis is the major entity that the researcher wishes to analyze in a particular study. For this research, the 'unit of analysis' was those individuals (students) who were assumed to have access or know- how about the 'virtual world', i.e. the Internet.

Sample

In order to draw a sample from the general population, various sampling methods may be used. For this particular research, the sampling method that was employed was the Non-Probability Convenient Sampling Method. It is a technique where the subjects are selected because of their availability and convenient accessibility. The researcher visited all four of the above-named universities and interviewed the desired subjects as per her convenience. Anyone who was willingly available was selected as a part of the sample. In this way, 304 questionnaires were filled

by the subjects and all of them were included in the sample. Table-1 shows the demographics of the 'samples' of students who had participated from the four different universities of Islamabad.

For the purpose of research, the sample was drawn from amongst the university students (Undergraduates, Masters, MS and M. Phil) from four major universities of Islamabad including two public-sector universities and two private-sector universities. The selected universities were The International Islamic University, Quaid-e- Azam University, The National University of Science and Technology (NUST) and COMSATS Institute of Information Technology. The reason for the selection of these universities is that their student population is quite large and the availability of students from different strata of the society was quite possible to be found in these universities which would be helpful in the collection of diverse data as well as for obtaining results that can be generalized for the different groups that are present in Pakistan.

Tools and Techniques Used For Data Collection and Analysis

In order to conduct a survey, the most appropriate tool is a well- structured questionnaire and was therefore used to collect the data for this particular research. It consisted of several parts, including the demographics of the respondents and contained a number of both closed and open-ended questions. In order to check the validity, reliability and practicality of the questionnaire, a pre-test was taken by thirty students from The International Islamic University. The results of the pre-testing demanded some minor changes to be made in the wording and sequence of the questions in order to make them more clear to the respondents. Upon applying the required revisions, the final questionnaire was comprised of thirty-four questions along with the demographic information of the respondents.

The data collected through the questionnaires was first coded in order to be analyzed. The coding has been done individually by the author in order to maintain consistency and reliability for the collected data. The coded form of the data was then put to analysis by using the SPSS format. In this way, the data revealed various frequencies and cross tabulations, but the main aim of this analysis was to answer the hypothesis which would then be a great help in drawing various conclusions.

Ethical Concerns

For this particular research, the primary data was collected through the responses provided in the questionnaires and it was vitally important to keep a few ethical concerns in mind. The researcher had to ensure the respondents that complete secrecy and privacy would be maintained with regards to the collected data and that each of the respondents would be shown as "anonymous". Additionally, the researcher refrained from harming any respondent physically or emotionally during the process of data collection.

Limitations and Field Experiences

The particular research aimed to study a real-life issue and sometimes, it is not possible to put participants through real-life scenarios in order to practically observe and judge how they would react to different ethical situations. Therefore, the results and outcomes rely on the reflex responses of the participants.

Another limitation faced by the researcher was that the data was collected through a detailed questionnaire having open-ended questions as well as close-ended so, sometimes, the participants might become bored with answering the detailed questions, which might result in incomplete information given or perception recorded by the participants.

Results

(i) Perception of Respondents regarding Cyber-Ethics

Table-2 indicates the positive perception of respondents towards various concepts about cyber-ethics. It can be observed that most of the respondents have an idea and know-how about cyber-ethics and they know which kind of attitudes and applications come under the umbrella of cyber-ethics. Majority of the internet users responded that cyber-ethics is basically the study of ethics that is relevant to computer networks. The simple concept that lies in the minds of internet users is that when we study ethics from the perspective of computers and the internet, it is called cyber-ethics. An important aspect to note here though is that there is a significant number of respondents who don't think that using unlicensed software or copying files and programs from the internet with prior permission and or even showing disrespect to other users on the internet (either by words or actions), also falls under the jurisdiction of cyber-ethics. According to the respondents, sing unlicensed software also comes under cyber-ethics. In the same way, many respondents oppose the statements of illegally copying files/programs and showing disrespect to people and people's work respectively as being violations of proper cyber-ethics.

On being asked by the respondents as to whether they think that it is unethical to visit 'adult' websites or not, many agreed with the statement. Here we can make an assumption that the concept of cyber-ethics is not fully understood by the majority of internet users but still the statistics shown above indicate that more than half of the respondents are clear in their concepts related to cyber- ethics.

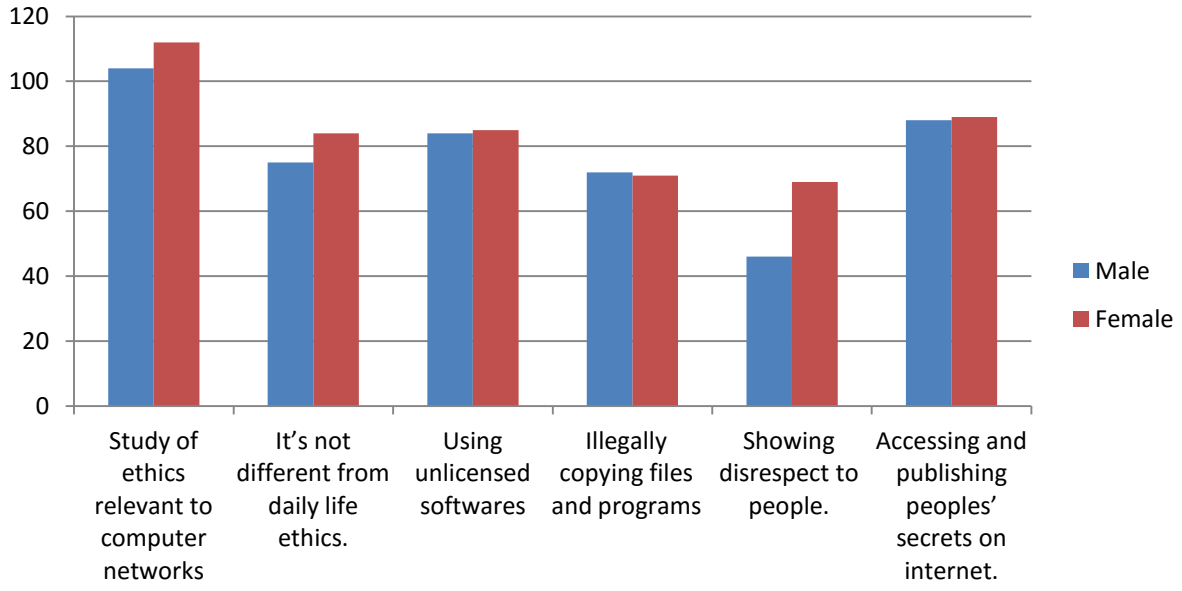
Table 1: Sample

University	Undergraduate	Masters	M.Phil/MS	Ph.D	Total
Quaid e Azam University	28	30	18	0	76
International Islamic University	20	46	9	1	76
National University of Science & Technology	33	25	18	0	76
Comsats Institute of Information Technology	53	21	2	0	76
Total	134	122	47	1	304

Table 2: Perception of respondents regarding Cyber-Ethics

Statements	Agree	Disagree	Neutral	Total
a. Study of ethics relevant to computer networks	71%	11%	18%	100%
b. It's not different from daily life ethics	52%	28%	20%	100%
c. Using unlicensed software	56%	29%	15%	100%
d. Illegally copying files and programs	47%	27%	26%	100%
e. Showing disrespect to people	38%	37%	25%	100%
f. Accessing and publishing peoples' secret on internet	58%	25%	17%	100%

Figure 3: Male/Female Percentage of Agree Responses Regarding Perceptions of Cyber-Ethics



Gender-wise perception of respondents regarding cyber- ethics

Khazanchi (1995) stated that gender has a great influence on the perception and the understanding of cyber-related ethical issues and women tend to be more accurate and precise in defining these concepts. The following figure supports the opinion that female respondents are more ethical than the male respondents in using cyber technology.

Figure-3 illustrates the gender-wise perception and understanding of various cyber-ethics concepts. It examines the difference in the level of understanding between male and female respondents and it sheds light on how cyber-ethics is viewed by male respondents and how it is viewed by the female respondents. The graph clearly indicates that the female students possess a greater understanding of the various concepts of cyber-ethics as compared to the male respondents. The frequency of the female respondents' responses of agreement with the valid statements regarding cyber-ethics is either equal to and, in some cases, higher than that of the male respondents.

A study was conducted by Woodcock (2002) to measure the ethical perceptions among 405 male and female students from different universities, technical colleges and schools of north-east Australia. The results showed that there are noteworthy differences in the responses of males and females in different ethical situations.

Table 3: Attitude of Respondents towards Cyber-Ethics

Statements	Yes	No	Total
Prefer to follow rules and regulations	91%	9%	100%
Prefer to be a well-mannered internet user	96%	4%	100%

It was also important to measure the attitude of respondents regarding cyber-ethics. The above-shown table queries whether the respondents were in favor of having/following rules and regulations while using the internet. What they actually do while participating as a member of the cyber-world is relatively different from what they think or what their perceptions about cyber-ethics really are. On being asked of the respondents about whether they think that it is ethical to follow any rules and regulations while using the internet, majority of the respondents were of the view that there should be some strict rules that should be followed by all internet users. On the other hand, the remaining believed that following rules and regulations is something that is against 'freedom of expression'. Everyone has the right to use the internet the way he/she wants to use it. In response to the question asked of the respondents as to whether they prefer to be decent and well-mannered internet users, a huge number viewed themselves as civilized internet users. They think that they always behave decently and don't violate the apparent rules and regulations associated with using the internet.

(ii) Level of Knowledge

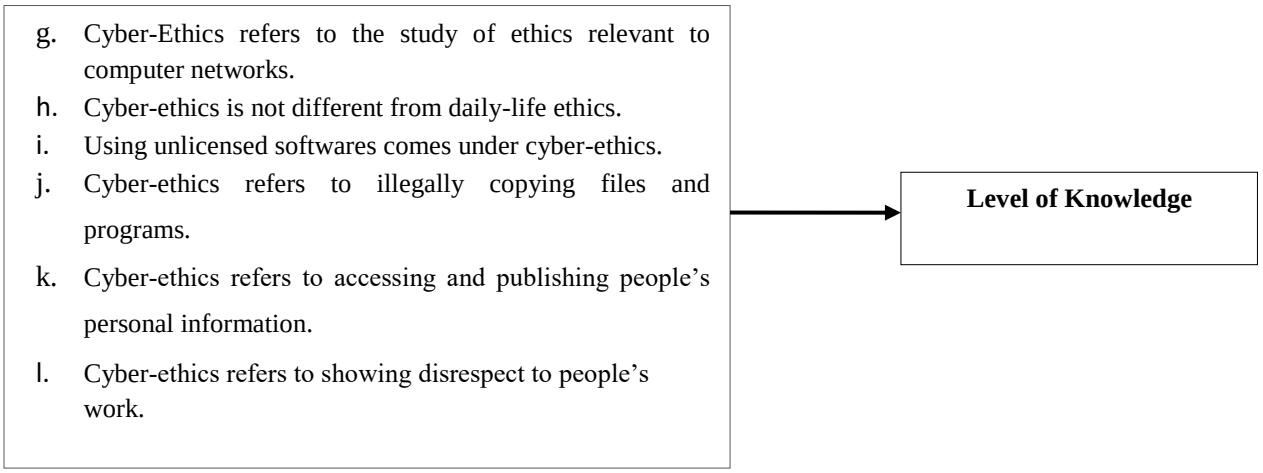
Level of Knowledge is a single variable that was measured through different statements made about various aspects of cyber-ethics. These statements included different dimensions of cyber technology in order to determine the concept of cyber-ethics in the minds of the respondents. O. Makinen & J. Naarmala (2102), state that cyber-ethics is a multi- dimensional project that includes topics such as internet ethics, everyday ethics, professional ethics, self-regulation, privacy, trust, intellectual property rights and plagiarism. Accordingly, all of these notions were incorporated together to obtain an idea of the internet users' concepts and perceptions. The figure below shows how different statements were merged to measure the single variable, "Level of Knowledge".

Figure -4 represents the collection of concepts merged together to measure the respondents' "level of knowledge". The statements given above were incorporated in the questionnaire and the responses about internet users' level of knowledge were measured on a 3 point scale i.e. 'agree', 'disagree' and 'neutral', Later on, for the analysis purpose, these responses were coded in numeric form as 'Agree=3', 'Disagree=2' and 'Neutral=0'. The results revealed that the level of knowledge regarding cyber-ethics is restricted to the simple concept which says,

(i) Cyber-ethics is the kind of ethics that is related to computer and computer-mediated networks.

When the ethics that we possess in our daily lives are put together with the use of computer and the internet, they become 'cyber-ethics'.

Figure 4: Level of Knowledge



(iii) Effect of Demographic Characteristics on the Level of Knowledge and the Perception of Respondents:

One of the important objectives of this particular research was to also examine the effect of different demographic characteristics such as gender, age, education and monthly family income on the perception, level of knowledge and pattern of behavior of internet users. The effect of these characteristics will be helpful in the categorization of respondents to determine which group(s) within the society is/are more responsible in showing ethical behavior while working on the internet.

The data in Table-4 above shows the level of knowledge of internet users according to gender and it can be observed that the female respondents were more familiar with the various concepts associated with cyber-ethics. The level of agreement with the positive statements is higher among the female respondents when compared to that indicated by the male respondents.

Table 4: Effect of gender on the level of knowledge and attitude of respondents

Statements	**Male**			**Female**		
	Yes	**No**	**Don't know**	**Yes**	**No**	**Don't know**
Study of ethics relevant to computer networks	68%	16%	16%	74%	6%	20%
It's not different from daily life ethics	49%	30%	21%	55%	27%	18%
Using unlicensed software	55%	31%	14%	56%	28%	16%
Illegally copying files and programs	47%	29%	24%	46%	25%	29%
Showing disrespect to people	31%	39%	30%	45%	34%	21%
Accessing and publishing peoples' secret on internet	55%	31%	14%	56%	28%	16%

Figure 5: Exposing Real Name

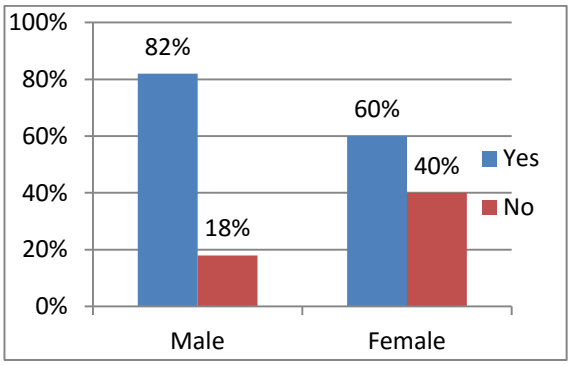


Figure 6: Exposing Real Gender

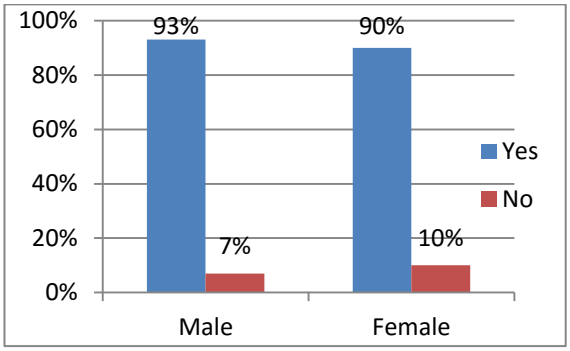
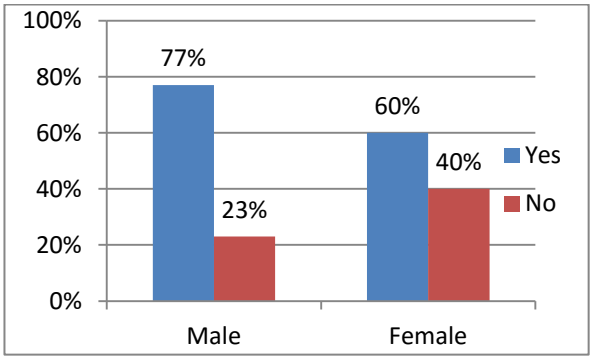


Figure 7: Exposing Actual Location



The figures (5,6, and 7) illustrate a comparison of the percentage of male and female respondents who prefer or do not prefer to expose their real name, gender and location while using the internet. It can be seen that the preferences in male respondents is higher than females. On being asked for the reason, most of the respondents, particularly the female ones, view exposing their real name, gender and location as inviting a possible security problem or sometimes the respondent simply likes to be an anonymous internet user. Harris (1996) conducted a survey on privacy issues as related to demographics and revealed that women seem to be "more concerned" about their privacy as compared to men, as the percentage of "being more concerned" was 58% for women and only 33% for men. In their research (Durndell and Haag, 2002) also argued that male internet users are more interactive and often less worried and anxious about their privacy than the female users of the internet.

Table 5: Level of knowledge according to age

Age (years)	Level of Knowledge			Total
	Yes	No	Don't Know	
18 – 23	16%	12%	41%	69%
24 – 29	20%	5%	3%	28%
30 – 35	2%	0%	0%	2%
Above 35	1%	0%	0%	1%

The table (5) demonstrates the variation of responses against the variable "Level of Knowledge" according to the demographic factor 'age'. It can be observed from the table that the age group 24-29 has the highest percentage, i.e. 73%, of 'agree' responses. This means that this age group, being the regular users and frequent 'consumers' of the internet, also has a better understanding of cyber-related ethical concepts.

Loch and Conyer (1996) found a positive association between the level of literacy and ethical-decision making. The table above measures the level of knowledge of respondents according to their level of education. It can be observed that more than half of the percentage of respondents were in positive agreement with the correct statements. As such, it can be inferred that the higher the level of education secured, the better the understanding of cyber-ethics concepts.

Table-7 indicates the variation of responses against the variable 'level of knowledge' according to the family income of the respondents. According to Gattiker & Kelley (1999), there is no association between the socio-economic status and the decision-making process of the respondents. However, on the other hand, Mert (2003) was of the view that there is a noteworthy correlation between the socio-economic status and ethical decision-making made by individuals. He argued that persons from the higher socio-economic strata tend to be much more flexible in violating rules and regulations while working on

the internet. The figures shown in the Table 7 demonstrate that the middle-class range, i.e. (25,000-75,000) seem to have a better understanding of cyber-ethical issues as compared to the lower or upper-class groups of the society.

Table 6: Level of knowledge according to education

Education	Level of Knowledge			Total
	Yes	No	Don't Know	
Undergraduate	8%	7%	44%	44%
Masters	10%	7%	23%	40%
MPHIL/MS	12%	2%	1%	15%
PhD	1%	0%	0%	1%

Table 7: Level of knowledge according to family income

Family Income	Level of Knowledge			
	Yes	No	Don't Know	Total
Below - 25,00	2%	2%	4%	8%
25,000-50,00	5%	6%	18%	29%
50,000- 75,00	5%	2%	18%	25%
75,000-1,0000	4%	3%	10%	17%
Above 1,0000	2%	3%	16%	21%

Conclusion

At present, digital technologies are persistently increasing, bringing the use of advanced as well as complex cyber technology tools into our daily lives. Knowing the power of these digital gadgets, more and more people are rushing to grab these devices. Surprisingly, Pakistan is also not free from this new technology dilemma. The use of these advanced gadgets in combination with working on the internet is constantly increasing and along with the usefulness and opportunity of communicating effectively with the outer world, it also causes several problems on the part of ethics. (Mohiuddin, 2006).

This particular research aimed to investigate the perception held by internet users regarding cyber-ethics and their attitude towards several ethical issues. The results revealed a positive and correct understanding of internet users towards various concepts of cyber-ethics. Ethics, from the perspective of computers and the internet, can be referred to as cyber-ethics; this is the straight-forward understanding of the majority of the internet users who were queried. However, the concept of using unlicensed software is still not clear in the minds of internet users and there is a need to educate the students about this particular issue. The perception of internet users was further investigated on the basis of gender. The results showed that although both males and females have their own parameters to analyze any situation, the female respondents were significantly clearer in their concepts regarding cyber-ethics than the male students. The research further highlighted the effect of demographic characteristics (Gender, Age, Education and Family Income) on the level of knowledge of the respondents. The results showed that, as with the perception, the level of knowledge of female respondents was higher than that of the male respondents as the percentage of 'agree' responses to the correct statements was higher among those given by the female respondents. Family income also influenced the cyber-ethical behavior of the respondents. The results showed that the middle-class group having an income range of 25,000 – 75,000 have a better understanding and their recorded behavior was much more ethical than those of the remaining income groups.

This particular research has tried to contribute in measuring perception of internet users in Pakistan as initially same kind of researches have been done to measure the users' perception in Taiwan (Chinag & Lee. 2008) and in Malaysia (Masrom, Hasnaa & Zainon, 2013).

The topic of cyber-ethics is multi-dimensional in nature and it is always difficult to effectively address such real-life issues. We are living in an era where technology is changing on a day-to-day basis and it is the need of the hour to incorporate that technology in our daily lives in order to secure as many benefits as possible. However, it is equally important to ensure that these benefits will not be attained against the account of personal values, moral and social character and the image-building/respect of the individuals involved.

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