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Growth of Information Technology – Ethical and Social issues: A Case Study

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Abstract: ***The present study is conducted among 283 students from Kerala to identify the harm and ethical and social issues in the field of information technology and to classify the immoral practices that students are doing in this field. First various important issues in the field of IT in the social and ethical areas are discussed. Then the cases considered as the most commonly used immoral activities, are selected for evaluation, and the participants ranked these activities according to the method presented in the questionnaire. These activities are examined and analyzed descriptively by SPSS program, reliability of the questionnaire is measured by Cronbach's alpha coefficient, Bartlett Test of Sphericity and KMO index and the validity of the results is verified using T-test and the results are ranked based on the first performance that happens frequently and the last performance that happens rarely or never. Finally, a set of strategies are presented for preventing ethical abuse in the field of Information Technology so that the challenges are reduced.***

Keywords: Information technology; ethical and social issues; unethical practices; students

I. INTRODUCTION

New advances particularly in the field of information technology have brought new scientific gains to humans but it should be noted that the entry of new scientific and technological fields will always have ethical issues and limitations. One of the interesting and, of course, new topics in the field of information technology science is computer ethics or IT ethics. The study of computer ethics has long been considered by the researchers. Today, in the digital age, the society is dependent on computers in almost all its affairs, and the study of ethics in the field of computer and information technology must always be considered.

The growth and development of the Internet has made it possible to store a large number of individuals' personal data by relying on advanced information systems and the abuse of personal data and privacy violations in the field of information technology is increasing [1].

The lack of scientific integrity in educational environments that make the most use of technology is an issue that should be considered. Illegal downloading of software is common among all social classes specially the students. The use of social networks is an inseparable part of the lives of many people and the nature of students. These cases have different effects on their lifestyle, especially on their academic performance and the length of their studies [2], [3].

On the other hand, the number of unethical sites is rising every day and the conditions for access to these sites are easier than before and the mean age of people who visit these sites is reduced. Being exposed to the unethical sites also has the dangers of high-risk sexual behavior, social dilemmas and mental and psychological problems. Communicating with anonymous people and visiting them is increasing [4].

A large percentage of users are exposed to moral damages and IT abnormalities, and having a virtual identity has become a commonplace cause of many social abnormalities. The phenomenon of Internet addiction has long been considered in the developed countries as one of the consequences of the ever-increasing development of the electronic communications network and has caused various harms to the individual, family and society. The excessive use of social networks can lead to addiction and is not tolerated by many physical communities. The theft of software, films, music, etc. with copyrights has become common in some societies.

Unauthorized access to the systems (hacking) is done using different and new methods and is increasing every day. Today hackers have posed the greatest challenge against IT ethics and with a widespread violation, they make numerous attempts to influence the commercial and banking accounts of individuals and try to violate individuals' privacy [1].

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Many computer games are violent and stimulate aggressiveantisocial behavior in addition to violent thoughts and feelings.
Today, forging digital documents such as counterfeiting digital signatures, digital images, etc. is an important topic in the field of information security and computer ethics. Online gambling (using online websites where members can participate in a variety of games without having to be present at the site, in which everything is done online from opening an account to transferring funds, withdrawals, playing games, etc.)is increasing.
Cases such as cyber bullying and communicating withanonymous individuals, visiting them, sharing the stimulating content on the Internet, and sharing personal information on the Internet have been recognized as the dangers of Internet communications in the new era [2].
All of these cases are examples of issues that affect ethics in information technology and it is necessary to rank such issues in terms of society in order to provide a better insight toprovide strategies and programs in which negative measures are converted to the positive affairs or ethical issues in the fieldof information technology are observed.
The remainder of this article is organized as follows. Section 2 presents related works. In Section 3, details thesignificance and objectives of the study, while Section 4 outlines the methodology and the sampling collection. The data analysis and results are provided in Section 5, the discussion and the concluding remarks are given in Section 6 and finally, the future research is discussed in Section 7.

II. RELATED WORKS

The high use of the Internet has led to the negligence of other important parts of life, including sleep, work, and academic achievement. Users in the Internet environment can be anonymous and engage in behaviors that are inappropriate in most physical communities. On the other hand, providing fast, cheap and convenient access to the unethical sites can be considered as a disadvantage of the use of the Internet. [5]
Studies have shown that a high percentage of employees inthe workplace use the Internet for non-work purposes. Meanwhile the most common non-work activities are: visiting the chat rooms, sports websites and stock investment websites [6]. Apart from all of this, computers and the Internet have thepotential to violate the privacy of users by hackers [7], [8]. Research shows that 75 percent of American children are willing to share their personal data and information with other Internet users in exchange for access to services and products provided on the Internet, which can be very dangerous [4].
In 2011, a research is conducted on the impact of virtual social networks on the academic achievement of students at Birjand University of Medical Sciences in eastern Iran. The result of this study showed that there is an inverse relationship between the use of social networks and the student's mean scores which is similar to the results of other research in this field. In this study, the most time spent on social networks is over the nights [9].
A research is conducted on the use of the Internet and social isolation among Iranian students. The study found that people who use the Internet and are addicted to social networksare faced with social isolation. It has also been shown that Internet addiction is 8.3% higher among Iranian students and the students who are addicted to the Internet feel lonelier and have less confidence than normal users [10].
Mobile cameras despite their useful applications could affect the privacy of others in public places. Although mobile phones have actually changed today’s lifestyle, almost all of them are equipped with high-quality digital cameras. These cameras can capture images of people without their consent, violate their privacy, be published by the Internet and become available to others [11].
A study conducted in the United States of America in 2012among the men showed that exposure to unethical sites has ledto a high-risk sexual behavior among them [12].
Many investigations are conducted on the issue of sexuallytransmitted content since 2009 in many countries of the world including the United States, the United Kingdom, Australia,
Canada, China and the Czech Republic. It should be noted thatresearches conducted in National Campaign for the Prevention of Juvenile Injuries and Pregnancies in the United States have presented significant outcomes in the prevalence of sexting among young Internet and mobile phone users [4], [13].
Aside from an easy access to these websites, animated computer games have also been developed that allow online gaming with the opposite sex; therefore, it is clear that a wide range of users, including children, can easily become addicted to the computer games while these games can have a lot of destructive effects [5].
On the other hand, computer games are often associated with adverse social phenomena such as violence and various types of addiction among the adolescents. A wide range of computer games provokes violence indirectly. Violent computer games not only stimulate violent thoughts and feelings, but also provoke aggressive and antisocial behaviors [14], [15].

III. SIGNIFICANCE AND OBJECTIVES

Given that ethical abuse in the field of information technology is increasing, it is necessary to analyze these cases. The roots and underlying causes of the problems should be considered in order to provide solutions to prevent them. In thisstudy it is attempted to examine the ethics of informationtechnology in the academic fields, identify the existing challenges, and finally provide solutions to prevent them because the author believe that if this research is conducted in an academic setting, these cases can be more precisely reviewed and it is possible to provide the proposed training andsolutions in a broader manner. Then in the future works this issue will be discussed in other age groups as well as other social classes. The main goal in this research is to examine the ethical challenges in the field of information technology and provide possible solutions for the improvement of the situation based on the achieved results.

IV. METHODOLOGY

A. Measurement

The tool for measuring variables and indicators in thisresearch is the questionnaire. In other words, by filling out the questionnaire, people's ideas are recorded and measured. To collect field information and complete the questionnaire, the questionnaire is designed online and provided to the statistical population. All answers to each question as well as the date and time of response are saved in the Excel file. Then SPSS software is used to analyze data. In this research the descriptiveand statistical analyses of the software are used and the results are assessed using the output of this software.

The questionnaire is designed so that all unethical cases canbe considered in terms of student performance. Questionnaire items are divided into two parts. The first part included the items that have case options and need to be analyzed descriptively, and the second part included the items based on the Likert scale that each one addressed an index and analyzedstatistically. Using the Likert scale [16], one can assign points to each of these questions and finally rank their questions and indices. The final score of the questions and indices is also calculated by averaging each one. Comparing this mean showswhich question or index has the highest number of agreementsand ranks them from highest to lowest, respectively. It should be noted that the calculation of the score and the index is only possible in the case of questions that the Likert scale has been used in the response options and for other questions the descriptive statistics are applied.

Responses are based on 5-point Likert scale. Eachrespondent was requested to indicate his/her stance on each ethical statement as 1 (strongly agree), 2 (agree), 3 (not sure/undecided), 4 (disagree) or 5 (strongly disagree).

Now, with this valuation method it is possible to calculate the indices obtained by the combination of several questions bymeans of averaging the results. For example, to calculate the Violent Computer Games Index, which includes the items 36 and 37, it is enough to compute the mean value of the answers to these two questions to get the index number. Table 1 presents the challenges presented in this study with items related to these issues (first part items - descriptive) and Table 2 presents the second part items including the itemsbased on the Likert scale.

Table i. Ethical issues, number of statements and questionsused in this survey (first part items - descriptive)

Ethical issues	**Number of questions**	**Questions**
Computer addiction	2	1, 2
Addiction to social networks	4	3, 4, 5, 6
Addiction to unethical sites	3	7, 8, 9
Violent computer games	2	10, 11

Table ii. Ethical issues, number of statements and questionsused in this survey (second part items - the items based on the likert scale)

Ethical issues	Numberof questions	Questions
Privacy violation	6	12, 13, 14, 15, 16, 25
Negative behavioral and personality impacts	3	17, 18, 26
Formation and promotion of gossip and fake news	2	19, 21
Anti-religious propaganda (in cyberspace)	1	20

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Addiction to social networks	2	22, 23
Verbal attacks	2	24, 27
Violation of ethical principles using a mobile phone camera	2	25, 35
Online theft	4	28, 29, 30, 31
Hacking	2	31, 34
Copyright violation	2	32, 33
Forging digital documents	1	33
Violent computer games	2	36, 37
Online gambling	1	38

B. Sampling and Data Collection

The statistical population of this study includes 283 students including 147 male and 136 female undergraduate, postgraduate and PhD Students' participation in answering the questionnaire is done voluntarily and completely anonymous. It is also emphasized that participants' information will be used solely for research and research purposes and will be completely confidential.

V. DATA ANALYSIS AND RESULT

A. Methods of Analysis

Reliability is one of the technical features of the measurement tools. The concept of reliability is that the measurement tools give the same results under the same conditions. Different methods are used to calculate the reliability coefficient of the measurement tools including Cronbach's Alpha method [17]. This method is used to calculate the internal coordination of the measurement tools such as questionnaires or tests that measure different characteristics. In such tools, the answer to each question can receive different numeric values. The zero value of this coefficient indicates unreliability and +1 denotes complete reliability. The reliability of the questionnaire is evaluated using Cronbach's alpha coefficient. The Cronbach's alpha value of the research questionnaire is 0.731 which indicates thedesirable reliability of this questionnaire.

There are several methods for assessing the validity of the questionnaire. That Bartlett Test of Sphericity [18] and KMO[1] index [19] are used. Bartlett's test examines the hypothesis that the observed correlation matrix belongs to a population with unmatched variables. Also, the KMO index is a method that takes a value between zero and one and the closer value of which to one indicates the higher detailed correlations betweenthe variables (questionnaire items) and the higher validity.Table 3 presents the Bartlett Test of Sphericity and KMO indexresults.

In the present study, Bartlett Test of Sphericity issignificant at a significance level of 0.05 because significance P <0.05 and also the KMO value is acceptable. Therefore, the questionnaire has construct validity.

B. Demographic and Professional Profiles

Frequency table of respondents' educational level is presented in Table 4.

Table iii. Kmo and bartlett's test

Kaiser – Meyer- Olkin Measures of Sampling Adequacy	0.621
Bartlett's Test of Sphericity	
Approx. chi- square	1002.9
Significance	0.001

[1] Kaiser-Meyer-Olkin

Table iv. Frequency table of respondents' educational level

	Number	Percent
PhD	35	12 %
Master's degree	29	10 %
Bachelor's degree	209	74 %
Associate's degree	8	3 %
NA	2	1 %
sum	283	100 %

As it can be observed undergraduate students form a significant portion of the statistical population. Also, moststudents entered the university in 2012 and 2015. 52% of the statistical population is the male and 48% is female that the difference in the number of male and female respondents is notsignificant.

C. Analysis of Achieved Results

Since the size of the statistical society is large enough (more than 30), the use of parametric tests such as T is an optional example. Therefore, in this study, T-test [20] was used to check the accuracy of the results. In Tables 5 and 6, the first (first part items - descriptive) and second (questions containing the Likert scale) part items are presented along with thecorresponding indices.

The main items are the ones that have options based on Likert scale. Each of these questions will also examine a specific index. Given that the options of these questions include Likert scale, one can assign a specific point to each of these questions according to the answers and, finally, the itemsand their indices are ranked. In this section, the statisticaldescription of the answers provided to each question is discussed. Table 6 summarizes the results regarding the first objective of the study, namely to addresses the respondents' attitudes towards ethical IT issues, also known as ethical orientation.

In this section, the mean score is calculated among the mainitems with Likert scale and it is indicated from the highest to the lowest value in the table below. The items with higher score are the one that have been more agreed than others; thus the first questions are the immoral actions with the highest frequency and the last questions are the immoral actions with the lowest frequency. Ranking the main questions of the questionnaire is listed in Table 7.

Table v. Ethical orientations of respondents to ethical issues in it (questions in the first part of the questionnaire)

	The purpose of the Questions		The obtained result
1	The rate of using a computer and checking addiction to it	15 %	No computer addiction
2	The reason for using a computer	48 %	Addiction to the computer for entertainment and recreation
3	The rate of using virtual social networks	65 %	Addiction to virtual social networks
4	The most common reason for using the virtual social networks	3 %	Interaction with friends and relatives, and no connection with strangers and finding new friends
5	Membership period in the virtual social networks	67 %	Before entering university
6	Times of using the virtual social networks	74 %	Night
7	Access to unethical sites through virtual social networks	37 %	Significant access
8	Investigating access to unethical sites over the Internet	40 %	Significant access
9	The rate of use of obscene images and videos	8 %	No addiction to unethical sites
10	Checking the amount of computer games used and addiction to them	42 %	No addiction to computer games
11	Favorite style for computer game	48 %	Arcades and sports games

Table vi. Ethical orientations of respondents to ethical issues in it (questions in the second part of the questionnaire- include likert scale)

No	Questions	Mean	SD	SA	A	I	D	SDi	NA
1	By communicating with strangers in cyberspace and visiting them...	2.54	1.06	4	10	45	19	22	0
2	By sharing personal information on the Internet or virtual social networks...	2.26	1.14	4	11	22	32	31	0
3	I allow people with unknown true identity to access my information.	1.73	0.99	3	4	9	30	54	0
4	Many profiles on social networks are fake and compromise my privacy	3.65	1.13	25	37	25	7	7	0
5	I check pictures and personal information of others without knowing whether they are ok with that or not	2.59	1.09	4	18	30	31	17	0
6	I share many topics that I am not interested in the real world	2.48	1.08	3	14	33	28	22	1
7	Social networks have led to social isolation in me	2.63	1.17	8	17	21	38	26	0
8	Most of the cyberspace shared content is unrealistic	3.49	0.93	12	43	30	14	2	0
9	Anti-religious propaganda is very common in cyberspace	3.57	1.05	18	41	25	13	4	0
10	I have shared the news in cyberspace that I am not sure whether they are real or rumor	2.11	1.08	3	11	15	38	34	0
11	Social networks and the Internet have led to lack of academic progress in me	2.79	1.22	9	23	20	32	15	0
12	Social networks and the Internet have led me to neglect other important parts of life, including sleep, work, and so on	3.05	1.20	10	35	16	30	10	0
13	With verbal attacks in cyberspace...	1.79	0.93	1	5	14	33	48	0
14	My friends' consent is not necessary in sharing their photos with me in cyberspace	1.87	0.97	3	4	14	37	43	0
15	I feel lonely in cyberspace and have lower confidence	2.31	1.08	4	10	26	34	26	1
16	On the Internet I can express my opinions freely and without any fear	3.47	1.03	16	35	31	14	3	0
17	I am not willing to pay for the software, movies, music, etc., with copy rights	3.22	1.18	18	23	28	25	6	0
18	I download software, movies, music, etc., with copy rights that are presented for free	3.76	1.04	25	42	23	5	5	0
19	I have software, movies, music, etc., with copy rights I have paid for but I will share them with other for free	3.62	0.96	16	47	23	12	2	0
20	If needed, I would be willing to pay and enter my bank account information from the bank portals about the authenticity of which I am not sure	2.15	1.08	3	10	16	38	32	1
21	I am more inclined to get free articles than similar articles that are offered on a paid site	3.66	1.05	22	38	25	9	4	2
22	I use the research work or artwork of another person without mentioning the source and Reference	2.48	1.20	6	16	20	32	23	2

23	If necessary, I would like to use decoding software to retrieve the information resources of others	2.09	1.12	3	10	17	32	37	1
24	I use my mobile camera in any public place	2.90	1.24	11	21	30	21	16	1
25	Violent computer games are more appealing to me	2.73	1.32	9	23	22	19	25	2
26	Violent computer games provoke violent thoughts, feelings and antisocial behaviors in me	2.77	1.28	11	17	28	22	20	2
27	I make money through computer games and online gambling	2.41	1.21	5	15	25	23	30	2
Mean of all statements: 2.74									
SD: Standard deviation, SA: Strongly agree (%), A: Agree (%), I: Indifferent (%), D: Disagree (%), SDi: strongly disg. (%)									

Table vii. Ranking the main questions of the questionnaire

No	Questions	Mean
1	I download software, movies, music, etc., with copy rights that are presented for free.	3.76
2	I am more inclined to get free articles than similar articles that are offered on a paid site.	3.66
3	Many profiles on social networks are fake and compromise my privacy.	3.65
4	I have software, movies, music, etc., with copy rights I have paid for but I will share them with other for free.	3.62
5	Anti-religious propaganda is very common in cyberspace.	3.57
6	Most of the cyberspace shared content is unrealistic.	3.49
7	On the Internet I can express my opinions freely and without any fear.	3.47
8	I am not willing to pay for the software, movies, music, etc., with copy rights.	3.22
9	Social networks and the Internet have led me to neglect other important parts of life, including sleep, work, and so on.	3.05
10	I use my mobile camera in any public place.	2.90
11	Social networks and the Internet have led to lack of academic progress in me.	2.79
12	Violent computer games provoke violent thoughts, feelings and antisocial behaviors in me.	2.77
13	Violent computer games are more appealing to me.	2.73
14	Social networks have led to social isolation in me.	2.63
15	I check pictures and personal information of others without knowing whether they are ok with that or not.	2.59
16	By communicating with strangers in cyberspace and visiting them...	2.54
17	I share many topics that I am not interested in the real world.	2.48
18	I use the research work or artwork of another person without mentioning the source and reference.	2.48
19	I make money through computer games and online gambling.	2.41
20	I feel lonely in cyberspace and have lower confidence.	2.31
21	By sharing personal information on the Internet or virtual social networks...	2.26
22	If needed, I would be willing to pay and enter my bank account information from the bank portals about the authenticity of which I am not sure.	2.15
23	I have shared the news in cyberspace that I am not sure whether they are real or rumor.	2.11
24	If necessary, I would like to use decoding software to retrieve the information resources of others.	2.09
25	My friends' consent is not necessary in sharing their photos with me in cyberspace.	1.87
26	With verbal attacks in cyberspace...	1.79
27	I allow people with unknown true identity to access my information.	1.73

D. Checking the Achieved Results by using a Single-Sample TTest

In order to evaluate the results the mean score assigned toeach index is examined and using a single-sample T test, the difference between the mean score and the value of 3 (the mean value of the answers of each question) is measured. In Table 8, the analysis of each index is presented.

Table viii. T test results for the ethical issues' indices in the field of information technology ethics

Index	Mean	SD	D	Statistics T	significance P	CI
violation of privacy	2.44	0.50	- 0.56	- 15.065	0.001	2.37 to 2.51
negative behavioral and personality effects	2.48	0.80	- 0.52	- 8.844	0.001	2.36 to 2.59
rapid formation and spread of rumors and false news	2.80	0.69	- 0.20	- 3.873	0.001	2.70 to 2.90
Anti-religious propaganda in the cyberspace	3.57	1.05	- 0.57	7.354	0.001	3.42 to 3.72
addiction to social networks	2.92	1.08	- 0.08	- 0.994	0.332	2.76 to 3.08
verbal attacks	2.63	0.67	- 0.47	- 7.418	0.001	2.53 to 2.73
online theft	3.19	0.57	- 0.19	4.435	0.001	3.11 to 3.28
Hacking	2.13	0.80	- 0.87	- 14.872	0.001	2.01 to 2.24
Copyright violation	3.05	0.92	- 0.05	0.725	0.469	2.92 to 3.18
forging digital documents	2.44	1.23	- 0.56	- 6.132	0.001	2.26 to 2.62
ethical abuse of the camera	2.38	0.80	- 0.52	8.943	0.001	3.41 to 3.64
interest in violent computer games	2.71	0.99	- 0.29	- 4.009	0.001	2.56 to 2.85
online gambling	2.41	2.41	- 0.59	- 6.511	0.001	2.23 to 2.59
D: The difference between the mean score and the value of 3, CI: 95% confidence interval for the average response						

For the privacy violation index, the mean value of the scores is 2.44, which is 0.56 units less than the value of 3, and the significance of the t-test at the 95% confidence level (Significance P < 0.05) indicates that the mean response of theindividuals to the privacy violation component has a significantdifference with the value of 3 and according to the 95% confidence interval, the mean response rate in the community with a 95% probability is within the range of 2.37 - 2.51. Sincethe questionnaire options are defined so that the responses indicating the violation of the privacy of others tend to the large numbers (greater than 3) it is concluded that the violation of privacy is low among the students of University of Zabol because firstly, the mean response of individuals is less than 3 (to the "completely opposite" or non-violation of privacy), and secondly, the mean value is significant compared to the number 3 (Significance P < 0.05).

Similar to the abovementioned analysis and the data in Table 3, the results in other indicators were obtained as follows:

1) The level of negative behavioral and personality effectsof information technology is low among University of Zabol students.
2) The rate of rapid formation and spread of rumors and false news in students of University of Zabol is lower than the mean level.
3) According to the students' opinion of the University of Zabol, the level of Anti-religious propaganda in the cyberspace is very common and is at a high level.
4) The amount of verbal attacks among the students at University of Zabol is lower than the mean level.
5) The rate of online theft in students in University of Zabol is higher than the mean level.
6) The interest in hacking is low among University of Zabol students.
7) The amount of forging digital documents is low amongUniversity of Zabol students.
8) The degree of ethical abuse of the camera is low amongUniversity of Zabol students.
9) The level of interest in violent computer games is lower than average among University of Zabol students.
10) Interest in online gambling is low among University of Zabol students.

For the addiction to social networks index, the mean value of the scores is 2.92, which is 0.08 units less than the value of 3, and the insignificance of the t-test at the 95% confidence level (Significance P ≥ 0.05) indicates that the mean response of the individuals to the privacy violation component has not asignificant difference with the value of 3 and according to the 95% confidence interval, the mean response rate in the community with a 95% probability is within the range of 2.76 -3.08. it is concluded that The degree of addiction to social networks is average among University of Zabol students because according to the above test the mean value is not significant in comparison with the number 3 (Significance P ≥ 0.05).
The degree of Copyright violation is average among University of Zabol students.

E. Ranking the Ethical and Social Issues Indices in the Fieldof Information Technology

In the previous sections, the rate of each index was studiedamong students of University of Zabol. Here the Friedman test 21 is applied to rank these indices. In Table 9, the test result is presented.

Considering that the Significance P is less than 0.05, the above hypothesis is rejected at the significance level of 0.05 which means that the rate of ethical and social issues indices inthe field of information technology is different amongUniversity of Zabol students. Table 10 shows the mean values of each factor, according to which "anti-religious propaganda is very common in cyberspace in the view of students from theUniversity of Zabol. Also hacking has the lowest rate among University of Zabol students.

Table ix. Friedman test for ranking the ethical and social issues indices in the field of information technology

Hypothesis	Test statistics	Significance P
The rate of ethical and social issues indices in the field of information technology is the same among University of Zabol students	400.05	0.001

Table x. The ranking the ethical and social issues indices in the field of information technology

rank	Ethical and social issues indices in the field of information technology	Ave. ranking
1	Anti-religious propaganda in the cyberspace	9.96
2	Online theft	9.28
3	Copyright violation	8.73
4	Addiction to social networks	7.78
5	Rapid formation and spread of rumors and false news	7.58
6	Interest in violent computer games	7.24
7	Verbal attacks	6.79
8	Online gambling	6.08
9	Negative behavioral and personality effects	5.97
10	Forging digital documents	5.81
11	Ethical abuse of the camera	5.75
12	Violation of privacy	5.67
13	Hacking	4.35

VI. DISCUSSION

According to the conducted studies and the results obtainedfrom this study, it can be concluded that ethics in information technology can be trained to influence the individuals. Given that there is no mandatory syllabus for students in bachelors and master and PhD course in Iran on ethical issues in information technology, such a program seems essential to cope with the ethical challenges of IT. Previous investigations also prove this claim [22]-[24].

In some cases, gender has a significant impact on the ethicsof information technology, which can be due to local traditions, beliefs and cultural factors in Islamic countries. From a traditional and cultural point of view, women are expected to have different values than men; therefore, they have different moral behavior compared to men in different conditions. As reported in [25] and [26], women are expected to follow cultural and family values and obey tough constraints.

`In terms of intellectual property, the results showed that thepolicies of Internet Service Providers (ISPs) and, in general, the Internet and domestic policies in some countries, such as Iran, are different than other countries. In Iran, strict software policies are not enforced, and individuals can download software and related items freely, while these policies are strictin some countries and people cannot access these data easily. Also the effective codes of ethics as well as correct policies should also be considered. In this section, the research results are consistent with other researchers' findings [27]-[31].

Two points of view can be considered for copyrights; the first point is that copyrights are incentives for creative production. The second point is that copyright is considered asa commodity for the consumer, who seeks to use it for free or at a negligible cost. Using this argument, it can be concluded that developed countries are struggling to secure the first view to have the copyright of their own works; on the other hand, indeveloping countries there is an attempt to reach a second viewto have access to the copyright easier and at a lower cost.

As the results of this study suggest, the copyright in Iran is not to be respected as well, and individuals have free access to software and some other copyrighted works free of charge. This challenge also requires growth, education and cultural developments. Also, the infrastructures ness to be corrected and punishments should be considered for the violation of copyright. There are no significant differences regarding privacy issues at different points as well as gender which indicate that privacy is a concern for all individuals. The results of this studyalso confirm this issue. Of course, the study also shows that female students are more concerned about their privacy. IT professionals or computer and IT students, considering that they have more information on this subject, are more likely to respect privacy-related issues, which also refers to the trainingof individuals. In order to discuss the privacy of access to data,IT strategies, infrastructures and platform must be properly defined and implemented. Previous studies confirmed the results of this research in this regard [32], [33]. In this section a set of strategies and training for controlling unethical activities in the field of information technology are presented at the University of Zabol. It is hoped that considering the mentioned solutions in the previous section andthese strategies and trainings the ethical and social issues will be respected in the field of information technology and their challenges are reduced.

1) Addiction to social networks, cyberspace and computers:

To create real and effective recreation and entertainment instead of virtual entertainments for students.

To reduce addiction to social networks, cyberspace and computers at night, the false policies of some companies should be eliminated. For example the lower cost of the Internet at night should be eliminated by these companies and instead of free download at night, this feature is provided during the day at a lower cost rather than the night.

2) Family control and monitoring can also be an effective factor in this regard.

3) Addiction to online unethical sites:

- The most important and effective way to reduce addiction to unethical sites is to educate people about the dangers of addiction to it. If people become aware of the consequences and risks of being exposed to online unethical sites, the likelihood of such addictionis reduced significantly.
- There are conditions for non-access to such websites. In Iran, the filtering rule is an example of such conditions which is unfortunately not very successful.

4) Addiction to violent computer games

- Creating recreational activities, such as creating diverse sports halls, green spaces and parks, etc., is an appropriate solution to fill the students' leisure time or their lack of access to such games.
- Cultural development on the use of such games so that the hours spent on the computer games is limited.
- Localization of computer games, which means the production and presentation of domestic computer games rather than the supply of games by the other countries. This solution can be effective due to thematch between the computer games and the culture andbeliefs of the country of residence.

5) Secularization, anti-religious propaganda and blasphemy

- Informing people and teaching religious issues
- Confronting superstitions
- More monitoring and regulation and adopting stricterrules

6) Verbal attacks

- Non-imposition of beliefs: If people impose their opinions on a person in the real world, with respect to freedom of speech the oppressed person may fight withthese beliefs as verbal attacks.
- Lack of bias: Excessive bias may cause abnormalitiesamong people in cyberspace. Individuals in cyberspace must also respect each other’s ideas and avoid bias in their thoughts. “Whoever disagrees with your thoughts is not your enemy!”

7) Online theft and Copyright violation:

- Establishing state-specific rules: Unfortunately, in Iran, copyrights are not respected as they should. In this regard, the government must enforce strict rules and even take heavy fines from offenders.
- Crimes shall be considered for sources that allowillegal downloading or other online thefts.
- Cultural development; the necessary trainings are needed to raise the level of community culture in this field.

8) Negative behavioral and personality impacts:

- Families' education and attention: Families' education and attention to their children from childhood play an important role in reducing the negative effects of behavior and personality.
- In general, it is recommended to promote awareness of ICT ethics among students and individuals. To achieve this, a moral framework must be created and developed. In addition, in orderto promote ethics, universities, as well as schools, must actively develop ethical education in their curriculum to increase ethical awareness among students as the future representatives in the IT market.

VII. CONCLUSION

In this study the ethical and social issues in the field of information technology is evaluated. Ethical issues in the fieldof information technology are ranked by the results of statistical analyses. According to the students' opinion, anti- religious propaganda had the highest prevalence in cyberspace among the indices that With Informing people, teaching religious issues, more monitoring and determine the correct rules it can be reduced. Also hacking was also ranked in the last place. According to the conducted studies and the results obtained from this study, it can be concluded that ethics in information technology can be trained. Therefore, mandatory syllabus for students in bachelors and master and PhD course on ethical issues in information technology seems essential to cope with the ethical challenges of IT. Finally, a set of strategies and training for controlling unethical activities in thefield of information technology was presented with the hope that their challenges are reduced.

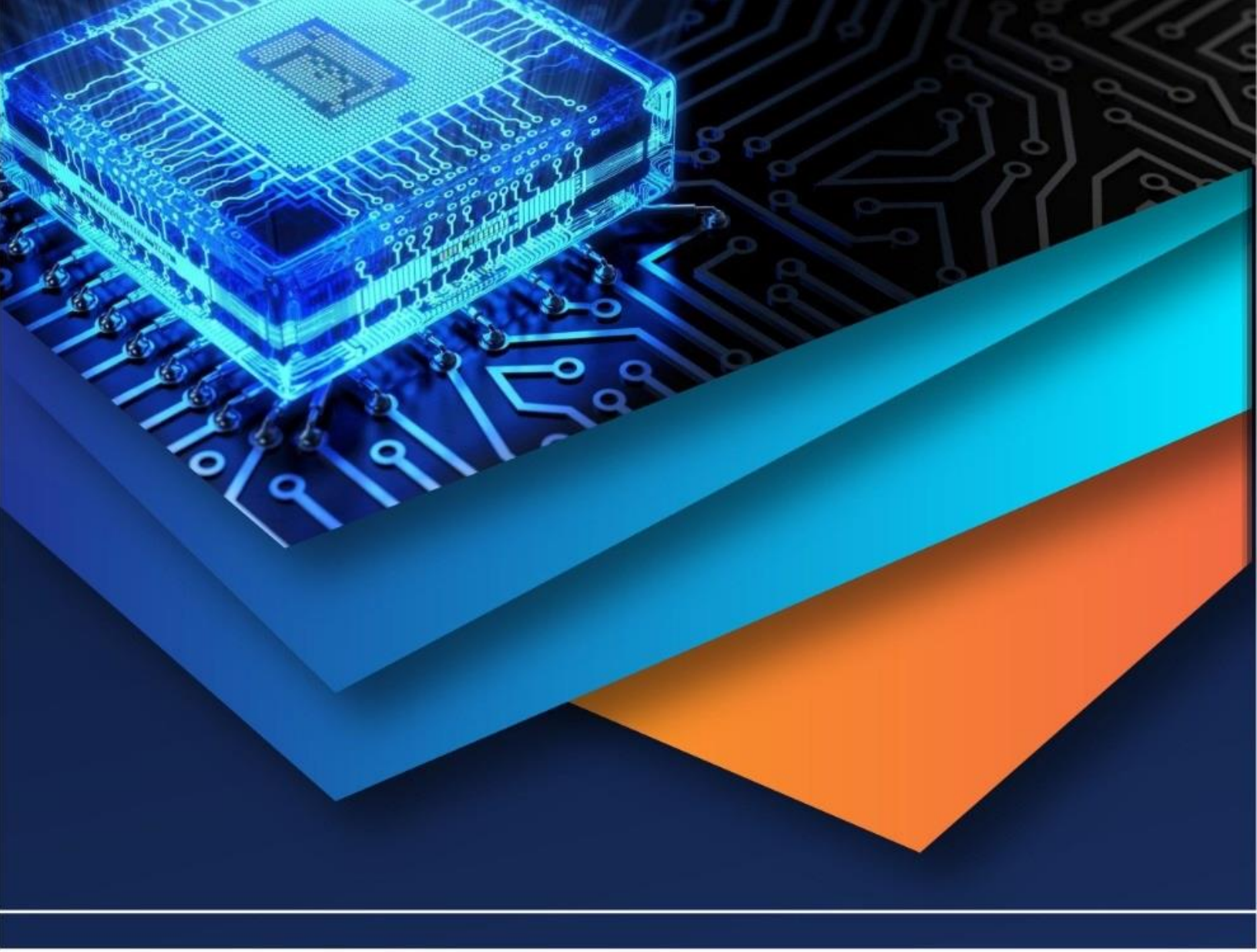
VIII. FUTURE RESEARCH

As noted earlier, this study has studied public awareness of some ethical issues in information technology among students, but the age related issues have not been addressed. Further research can consider on cultural differences, the gender based conditions, intellectual property rights and also user privacy behaviors in social network.

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