International Journal of Law
ISSN: 2455-2194; Impact Factor: RJIF 5.12
Received: 06-11-2020; Accepted: 20-11-2020; Published: 08-12-2020
www.lawjournals.org
Volume 6; Issue 6; 2020; Page No. 169-176

Awareness and perception of cyber-crimes in lawyers, law and computer science students

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Abstract
Cyber-crimes have become the most popular and rising threat to the world. There is a high risk of cyber victimization when the person using the internet is not having the basic cyber security knowledge to fight this menace. For this purpose a research based survey to assess the level of knowledge, awareness and perception of cyber-crimes among lawyers, law and computer science students are conducted. By knowing the level of awareness, perception and knowledge of lawyers, law and CS students, it can be easily concluded that if the awareness level of lawyers and law students is not up to the level, of how to protect themselves in the online spaces then what can be expected of others. It is providing evidence that there is a need to legislate on cyber security. This study shows that there is a significant association between awareness and perception, awareness and knowledge, perception and awareness, perception, awareness and knowledge, awareness, perception with gender, awareness perception with age, awareness perception with occupation and education level. Results from this study shows that males are more aware than female. Respondents in age group 20-30 are less aware than others while those with increased experience, high education level and those who have studied this subject i.e. students of computer science have shown more awareness about cyber-crimes than lawyers and law students.

Keywords: awareness, computer crime, cybercrimes, cyber harassment, cyber security, technology

1. Introduction

The formation and increase in usage of World Wide Web and computer networking has made easy, modernized and changed our traditional lifestyle. It has changed our ways of shopping, banking, governance, education, to the planes we fly in, to the hospitals which keep us alive and also to the cars we drive in [1]. It has become a medium of exchange and sharing of information [2]. It has also transformed the way people used to socialize. Social networking websites to a large extent have replaced the norms of socializing with people, friends and colleagues. The emergence of computer networking has given rise to the interactions between humans and machines and has made our lives computer dependent.

Computers through the use of Internet have made lives easier. Nowadays data is transmitted just by clicking a button of your keyboard or through your smartphone. But do we know that the data which has been transmitted is received without any leakage of information? The question which lies here is safeguarding our private information and of computer security? [3].

It will not be wrong to say that technology is serving as the basis of our need satisfaction. With its benefits, it has also made people to compromise their privacy which is quite harmful for their social and economic life. It has encouraged other criminal activities like ATM fraud, phishing, credit card frauds, cyber bullying, stalking, identity theft and defamation [15]. It has also tremendously damaged the economy of the world [20].

The importance of cyber security can be predicted by considering some of the established and powerful organizations and individuals who have become victims of cyber-crimes. According to a BBC report published in 2017, computer systems of companies around the globe were shut down by a ransomware. It included main airport, Dannish Maersek, Russian oil Producer Rosneft, US food giant Mondelez, Pennsylvania hospital operator and Netherlands based shipping Company, TNT etc. The same year, a U.S, free credit card monitoring and identity theft protection company Equifax was exposed to a cyber-attack. The data breach exposed personal information of 147.9 million Americans. It is evident from the rising criminal activities in the cyber space that cyber-crimes cannot be reduced only through legislation. It can be minimized through education. People need to learn how to use computers in a right way because the reason behind victimization is lack of awareness among the masses and their perception of not getting victimized. A study showed that there is a deficiency of 1.8 million cyber security officials between now and 2022. Therefore it is necessary to attract students to take cyber security as their main subject like other fields of education because this is a fact that our world lacks the talent of cyber security. People are also not updated with the cyber security and its threats. They do not get any updates on it, the way they get updates on the Internet tools and apps [4]. Even the current cyber law of Pakistan i.e. Pakistan Electronic Crimes Act, 2016 [5] passed by the national assembly needs to be reformed from time to time and must be implemented. Law enforcing agencies need the help of people for fighting this menace. They want people to file complaints of cyber-crimes so that they are investigated and the culprits be punished for it [6]. These cases will set examples for many others who due to the fear of defamation and not getting justice do not file their complaints. If victims of cyber-crimes all over KP will start filing their complaints by giving accurate and complete information of the person who has tried to harass them online. It will sort out many cases. It is the job of the government officials to protect young

generation from becoming the victims of the high risk crimes [7]. For making laws and fighting this menace in Pakistan especially in KP, it is necessary to know the level of awareness, perception and attitudes of people in our province, about cyber safety, cyber security, cyber ethics and cyber laws. The only way to minimize this over growing threat in KP is to educate people especially students and lawyers about Internet crimes. Inclusion of lawyers raises a question of, why lawyers are included in the survey. Lawyers are the source of getting the information of how Internet crimes are different from the traditional crimes and how it can be reduced, tackled and dealt with. Cyber-crimes are committed in cyberspace where a person can be targeted from anywhere in the world. Taking a cyber-criminal behind the bars brings a question of jurisdiction, because the reason is that laws of the same crime in different states treat perpetrators and deal with the similar crime differently. That is why the criminal hardly get punished for his crime.

A study conducted by Chen at el. [19] identified that humans are involved in the process of security. They play a vital role in securing information. All breaches of security including hacking, identity theft, virus infections, etc. are due to the careless behavior of humans. When high level awareness of information security and cyber laws will be given to general home users, students, government officials, lawmakers and lawyers then a decrease in the occurrence of cyber-crimes will be seen. To make the fight against cyber-crimes effective, it is necessary to judge the level of awareness especially in young people by taking human factors in consideration like age, gender, profession, knowledge and skills. Their level of perception based on their knowledge of security and risks involved in cyber space should be addressed properly for getting better results. There are few studies conducted on the level of awareness, perception, knowledge and attitude of people of Pakistan, towards cyber-crimes. Hardly any initiative has been taken by the government of KP for enhancing the knowledge and awareness of the students, lawyers and legislators in KP. This study will focus on the level of awareness and perception of students and lawyers about information security, its risks and laws enacted for it. This study will also find the relation between the level of awareness and perception of the participants.

1.1. The Research Problem

Cyber-crime is a buzzword of the day, all over the world. Due to its connectivity worldwide and online activities, it has become a global concern and is spreading in a terrific volume. With the rapid increase in Internet usage, all our activities, services and operations which used to happen offline have become online. Like other activities, the number of crimes committed online has increased rapidly and are called cyber or Internet crimes. Cyber-crimes are criminal (unethical and unlawful) activities using the Internet facilities such as identity theft, transaction fraud, virus infections, hacking, defamation, software privacy, online harassment, cyber bullying etc. There is a high risk of becoming a victim especially if you are having no or low knowledge, understanding or awareness of cyber security. Perpetrators, as they are pros in this field rarely get caught and punished in developing countries like Pakistan. No one in Pakistan is educated on cyber ethics. There is no availability of resources and the departments, which are assigned the job of resolving the issues of cyberspace victims, lack its knowledge.

Most of the people get victimized because they are not having sufficient knowledge of securing their activities on the Internet. In a developing country like Pakistan where cyber laws have just got introduced and are hardly being practiced and implemented, it has been observed that in most of the cases, not only lawyers and judges but students who have studied this subject are not aware of cyber-crimes and its victimization. For minimizing this issue in our country, it is extremely important to identify the level of awareness and perception of individuals, industries and organizations for digging out this over growing problem from roots.

This study is designed to examine the relationship between perception and age, gender, profession, skills, and knowledge as well as the relationship between awareness and age, gender, profession and knowledge towards cyber-crime and cyber security. A survey has been conducted which comprised of include lawyers, law students, technology specialists, computer science students and general public with a structured questionnaire which will cover demographic information and most known cyber-crimes. This study will provide empirical evidence to the policy makers for preventing cyber-crimes, enhancing knowledge of cyber security, cyber ethics and cyber safety in Pakistan, especially in Khyber Pakhtunkhwa.

1.2. The purpose of the study

The purpose of this research is to identify the level of awareness and perception about crimes committed online and how these crimes can be controlled by increasing awareness in young people especially students and lawyers in Khyber Pakhtunkhwa. It will also show how crimes are influenced by age, gender, profession/occupation and knowledge.

1.3. The objective of the study

- To find out the knowledge of lawyers, students of law and computer science in Khyber Pakhtunkhwa, Pakistan, relating cyber-crimes and cyber security in relation to their age, gender, professional skills and knowledge.
- To find out the perception that lawyers, computer professionals, students of law and computer science have in Khyber Pakhtunkhwa, Pakistan, relating cyber-crimes and cyber security in relation to their age, gender, profession, skills and knowledge.
- To find out the level of awareness which the lawyers, computer professionals, students of law and computer science have in Khyber Pakhtunkhwa Pakistan, relating cyber-crimes and cyber security in relation to their age, gender, profession, skills and knowledge.
- Finding the relation between perception and awareness of cyber-crimes

1.4. Significance of the study

This research provides an insight of knowledge of the lawyers, law and CS students in Khyber Pakhtunkhwa. This study has investigated awareness of cybercrimes and how these crimes are perceived by the respondents. If the community who is safeguarding the rights either constitutional or fundamental of the common masses, our future lawyers and those study the main subject which is

providing the basis of how to secure oneself from the heinous crimes of the modern world are not well aware of this disease then what can we expect from those who are not in this profession. This study will help in legislation of cybercrimes which has become the worst threat to the people of the world. This research will tell the audience about the factors which make them the victim of cyber-crimes. Most of the people are not aware of the facts that not updating software, anti-virus in their operating systems, sharing WIFI with others with no security measures, by not reading agreements before installing an app or software by allowing it to access our systems, by not using firewalls and VPN, by keeping same and weak passwords for their accounts, by not checking security setting before uploading any data on social media, by clicking on links of unknown origins, by sharing personal information and images with strangers can make them the victim of cyber-crimes. It has and will alert most of the audience who has never heard of these crimes before and it will make them take precautions from becoming victims of cyber-crimes. It will prevent cyber-crimes in most of the lawyers community. It will highlight the fact that our lawyer community is not well versed with the subject of cyber security and cyber-crimes. This research has already started an influence. Most of the lawyers specially the senior lawyers has suggested who happen to be lecturers in most of the well-known law departments of universities that this subject be made compulsory in LLB course. This will help the judicial academy to focus more on conducting trainings on this subject matter than on the traditional topics of law which will in return help lawyers and law students in enhancing their knowledge and awareness of cyber-crimes and digital security. This paper will help legislators to amend the laws by bringing harsh punishments. It will also help the social society and ngos that there shall be training on this subject for all students and people of all occupation. This research has revealed that most of population of our province lags behind in this area and there is a need to address it.

This research shows that age, gender and knowledge affects the awareness and perception of cyber-crimes. It also depicts that the district a person lives in has an effect on the perception of cybercrimes. From this research the audience will know how important it is to keep back up of your data as it can get compromised by just clicking on a link or by getting infected by a virus. This research show that by just educating people, updating software, keeping strong passwords, using anti-virus etc which are the basic security measures can prevent more than 80% of cybercrimes in our country and province. It shows that the number of women in both the fields i.e. law and computer science is less as compared to other fields and they must be encourage to step in the arena of these professions. It also shows that there are no or few women role models in this field. It shows that women are more vulnerable to cyber-attacks than men. It will help organizations and government to take steps in this regard and conduct training and workshops in which women are taught about cybercrimes for their safety online.

1.5. Scope of the study

This research is having a broad scope. It gives information about the major cybercrimes and how to deal with those, what security measure needs to be taken for combating cybercrimes. It is also providing information that how worst our lawyers and law students are on the subject of cybercrimes and cyber security. They are not even aware with the basic security measures to take before stepping in to the world of cyber space. It has brought our attention that HEC should include the subject of cyber-crimes in the course of LLB. It has taught us that there is a need to give trainings, workshops and awareness sessions to the people of our law community on cyber-crimes. It has also depicted that women in the field of law and CS are quite less as compared to other fields. This study has shown the perception of lawyers, law and CS students about cyber-crimes in almost all districts of KP. It reveals that ignorance of security related to cyber technology is equally harmful for lay man and lawyers.

1.6. Limitations

- Computer science students are taken from Peshawar only. Law students were from the colleges and law departments of Abbottabad and Peshawar. Students' selection is limited to two districts only.
- Number of Lawyer respondents from Peshawar as compared to lawyers from the other districts.
- Questionnaire was lengthy.

1.7. Sampling Setting

For the purpose of collection of data, questionnaire were distributed both in electronic and print/ hard form among lawyers, law and computer science students. A total of 10000 questionnaires were distributed, among which 935 were returned.

1.8. Sampling Technique

The sampling technique used in this study for analyzing the facts and figures is quantitative research technique. Data was analyzed through SPSS. Analysis and statistics tests i.e. Correlation test, regression analysis test and chi-square tests were used.

1.9. Hypotheses

H1: There is a significant relationship between awareness of cyber-crime and knowledge
H2: There is a significant relationship between perception of cyber-crime and knowledge
H3: There is a significant relationship between perception of cyber-crime and Awareness.
H4: There is a significant relationship between perception of cyber-crime and Awareness and Knowledge.
H5: There is a significant association between awareness and perception of cyber-crime and age group
H6: There is a connection between awareness and Peception of cyber-crime and gender
H7: There is a significant association between awareness and perception of cyber-crime and education level.
H8: Awareness and Perception of cyber-crime depends of the occupation.
H9: Awareness and Perception of cyber-crime depends of the experience.

2. Research methodology

This research is based on quantitative data. The reason for choosing quantitative research is to judge awareness, perception and knowledge of cybercrimes of our lawyer community, law students and computer science students in Khyber Pakhtunkhwa. For this purpose data was collected through a questionnaire from respondents. The

questionnaire was distributed both in printed and electronic form in almost all bar associations which come under the umbrella of Khyber Pakhtunkhwa bar council. Students of computer science and law were requested to fill the forms online via Google docs. Some law students who could not be accessed for filling forms online were handed over the questionnaire in printed form which were filled and submitted by them on the same day and few among them submitted it on the other day.

2.1 Data collection

The source of data collection for this study is questionnaire distribution. Questionnaire was circulated in the above mentioned Bar Associations of KP, Law and Computer science departments of the above mentioned Universities. Questionnaire for the research based survey was designed in a simplified way. As the same questionnaire was used for all the respondents comprising of respondents from two different fields, it was kept it mind to design the questionnaire in a way which is understandable for all the respondents. The questionnaire consists of closed ended questions which were to be answered in a likert scale. Only two questions in the demographic section were open ended. The reason for keeping district and Bar Association/University question open ended was to meet the target of completing 1000 respondents collectively from almost all the districts of KP. It would have been very difficult to meet the required target of 1000 if some districts from Kp were targeted for the survey. The main purpose of the questionnaire is to deliver the facts in graphical and numerical manner.

2.2 Respondents

Cyber Crime Awareness and Perception among lawyers, law and computer science students were completed by 935 respondents. The sample was obtained by random selection. Respondents were not offered incentives and it was difficult to convince most of the respondents to take the survey and fill the questionnaire. Approximately 1000 questionnaires in printed form and the questionnaire designed in Google docs was shared, circulated and distributed among the eminent, influential, senior and Presidents of all bar associations. They were requested to distribute, circulate and share the same in their community of lawyers and return the same within a week or approximately ten days' time. On the other hand Principals, lecturers and students specially CRs (Class Representatives) of the law and computer science departments/ colleges of the Universities were requested to ask their college mates to fill the questionnaires online and those who were not having the internet facility filled the forms in hard form.

Following is the list of respondents from which the data has been collected:

1. **Bar Associations**

   Peshawar, Charsadda, Mardan, Swabi, Nowshehra, Mansehra, Abbottabad, Kohat, Bannu, Swat, Timeragaras, Lower Dir, Upper Dir, Chitral, Hangu,Tangi Charsadda, Shabqadar Charsadda, Thall, Karak, Behrain.

2. **Law Colleges**

1. Law Department/Khyber Law College, University of Peshawar
2. Islamia Law College and University, Peshawar
3. Frontier Law College, Peshawar
4. Supreme Law College, Peshawar
5. Abbot law College, Mansehra
6. Law department Edwardes College, Peshawar

3. Computer Science departments of Universities:

7. University of Engineering & Technology, Peshawar
8. Computer Science Department, University of Peshawar
9. IMSciences, Peshawars
10. City University, Peshawar
11. Iqrass University
12. Cecos University
13. Edwardes College, Peshawarssss

2.3 Population of the study

Population in this research is defined as the total number of individuals from which some sample is drawn. Population of this research is composed of lawyers from almost all districts of Khyber Pakhtunkhwa Bar Council, graduate and Post graduate Students studying in the law and computer science departments in the above mentioned universities of Khyber Pakhtunkhwa.

2.4 Sample size

Having the large number of population and the fact that this population is spread all over KP, only 1000 respondents from the whole province was selected for conducting this study. Among these 1000 respondents, there are 763_lawyers, 117 law students, and 55 computer science students. All computer science students belong to Peshawar city while law students are from Peshawar and Abbottabad. Lawyers' category in this study covers almost all the districts of KP registered with KP Bar council. The bar associations, Universities from which the lawyers and students were selected for completing this survey are mentioned above.

2.5 Method of Data Analysis

SPSS Version 20 is used for data analysis. For analysing variable and tables simple percentages, frequencies were used and for testing hypotheses Regression Analysis, Pearson Correlation and chi square statistical models were used.

2.6 Level of significance

Level of significance is 5% which means we are 95% confident that the decision taken is accurate.

2.7 Data representation and Analysis

2.7.1 Circulation and return of data

Questionnaires were distributed in two forms i.e. in hard form by printing questionnaires and handing them over to respondents by hand and secondly through internet by designing the same questionnaire in Google docs. A total of 1000 questionnaires were distributed and circulated among the respondents but only 935 among them were returned.

2.7.2 Demographic Analysis

Table shows the demographic analysis of all the factors. Total population of the survey consists of 935 respondents. There are 782 male which is 83.6% and 153 female which is 16.4% of the total population which means male gender is in majority of the respondents in this survey.

There are 598 respondents which become 64 percent of 100

are in the age bracket of 20-30 years, 174 respondents which is 18.6 % belongs to 31-40, 105 respondents which is 11.2% falls in 41-50 while 58 which is 6.2% comes under the category of above 50 years. There are 843 respondents which is 90%, comes under the category of graduates. The remaining 92 respondents which are 9.2% of the total respondents are post graduates.

481 respondents which is 51.4%of the total is having less than 1 year of experience. 207 respondents which are 22.1% belong to category of 1-5 years' experience. In 5-10 years' experience, there are 142 respondents which is 15.2 while in above 10 years' experience, there are 105 which is 11.2% of the total respondents. There are 763 lawyers which are 81.6%, 117 Law students which are 12.5% and 55 CS students which is 5.9% of the total respondents. There are 619 single which is 66.2% and 316 married which is 33.8% of the total respondents in the survey.

The following graph shows the number of participants from each district of Khyber Pakhtunkhwa.

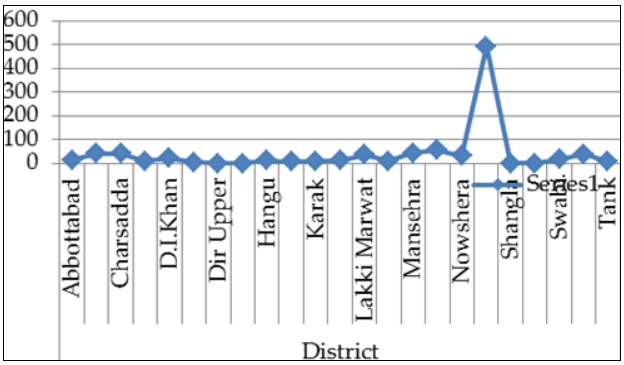

Fig 1: Demographic Analysis.

2.8 Reliability Analysis

Reliability test is applied on awareness, perception and knowledge. From the table given below, the values of cronbach's alpha are above 0.50. It shows that this data is reliable. Hence the variance shown in the table above for awareness is highly reliable.

Table 1: Reliability of awareness, Perception and knowledge

Reliability statistics	Cronbach's Alpha	N of Items
Reliability of awareness	0.762	12
Reliability of perception	0.643	11
Reliability of knowledge	0.931	18

3. Results and discussions

3.1 Testing of Hypothesis no.1

H1: There is a significant relationship between awareness of cyber-crime and knowledge the co-efficient of correlation R is 0.378, showing that there lay a significant relationship between Awareness and knowledge of cyber-crimes. Value of R indicates that the variables change together by 31.6%. There is a significant relationship between the two variables (R=0.378, n=100, p<0.05 i.e. 0< 0.05) It means that by providing awareness, the knowledge of cybercrimes will increase in the respondents. Hypothesis one was developed to find out the association between Awareness of cyber-crimes with the knowledge of offences and threats and the result shows association between these two variable so hypothesis one is accepted.

Table 2: Co-efficient of hypothesis 1

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.182	.055		57.417	.000
	Q3_Know	.183	.015	.378	12.467	.000
a. Dependent Variable: Q1_Aware						

3.2 Testing of Hypothesis no.2

H2: There is a significant relationship between perception of cyber-crime and knowledge level.

The co-efficient of correlation R is 0.23, showing that there lay a significant relationship between Perception of cybercrimes and knowledge level. Value of R indicates that the variables change together 23%. Therefore is a significant relationship between the two variables (R=0.23, n=100, p<0.05 i.e. 0< 0.05). It means that perception changes with the increase in the level of knowledge about cybercrimes in respondents.

Hypothesis two was developed to find out the association between Awareness of cyber-crimes with the knowledge of offences and threats and the result shows association between these two variable so hypothesis one is accepted.

Table 3: ANOVA of Hypothesis 2

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.844	1	7.844	48.891	.000b
	Residual	149.695	933	.160		
	Total	157.539	934			
a. Dependent Variable: Q2_Percep						
b. Predictors: (Constant), Q3_Know						

3.3 Testing of Hypothesis no.3

H3: There is a significant relationship between perception of cyber-crime and Awareness.

The co-efficient of correlation R is 0.436, showing that there lay a significant relationship between Perception and Awareness of cybercrimes. Value of R indicates that the variables change together 43%. Therefore there lies a significant relationship between the two variables (R=0.43, n=100, p<0.05 i.e. 0< 0.05). It means that perception changes with the increase in awareness about cybercrimes in respondents.

Hypothesis number three was developed to find out the association between Perception of cybercrimes with Awareness about cyber-crimes and the result shows association between these two variables so hypothesis three is accepted.

Table 4(b): ANOVA of Hypothesis 3

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.999	1	29.999	219.456	.000b
	Residual	127.540	933	.137		
	Total	157.539	934			
a. Dependent Variable: Q2_Percep						
b. Predictors: (Constant), Q1_Aware						

3.4 Testing of Hypothesis no.4

H4: There is a significant relationship between perception of cyber-crime and Awareness and Knowledge. The co-efficient of correlation R is 0.441, showing that there lay a significant relationship between Perception of cyber-

Crimes with Awareness and knowledge. Value of R indicates that these variables change together 44%. Therefore there lies a significant relationship between the two variables (R=0.441, n=100, p<0.05 i.e. 0< 0.05). It means that perception changes with the increase in awareness and knowledge level about cyber-crimes in respondents. Hypothesis 4 was developed to find out the association between Perception of cyber-crimes with Awareness and knowledge about cyber-crimes and the result shows association between these three variables so hypothesis four stands accepted.

Table 5(c): Model Co-efficient of Hypothesis 4

Model			Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.221	.114		19.551	.000
	Q1_Aware	.408	.032	.411	12.933	.000
	Q3_Know	.033	.015	.068	2.140	.033
a. Dependent Variable: Q2_Percep						

3.5 Testing of Hypothesis no.5

H5: There is a connection between awareness and Perception of cyber-crime and gender

We got chi-square value-= 5.131 while the P value is0.07. P value which is 0.07 > 0.05 which means hypothesis stands accepted. From the graph, it can be seen that there are total 782 male out of which 651 answers agrees, 58 disagree and 73 answered indifferent about the knowledge of cyber-crimes. Similarly there are 153 female respondents out of 935 respondents in which 138 answers agrees, 5 disagree and 10 answered indifferent about the knowledge of cyber-crimes.

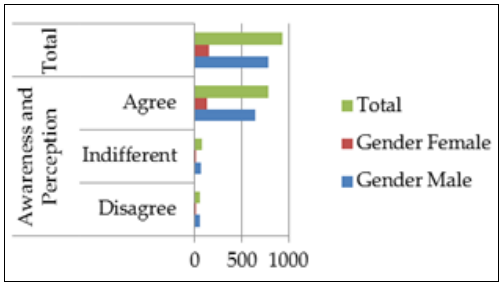

Fig 2: Awareness and perception of cybercrimes with Gender

3.6 Testing of Hypothesis no.6

H6: There is a significant association between awareness and perception of cyber-crime and age group. It was observed that respondents in the age group 20-30 years were more aware than the respondents of other age groups.

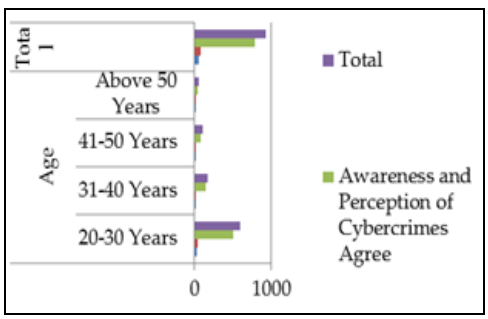

Fig 3: Age Table of Hypothesis 6

3.7 Testing of Hypothesis no.7

H7: There is a significant association between awareness and perception of cyber-crime and education level.

The graph shows that out of 843 graduate respondents, 711 answered in agree, 73 in indifferent and 59 answered in disagree. While 78 answers in agree, 10 in indifferent and 4 in disagree out of 92 postgraduate respondents.

The chi-square value-= 1.323 while the P value is 0.516. P value which is 0.516 > 0.05 which means hypothesis stands accepted.

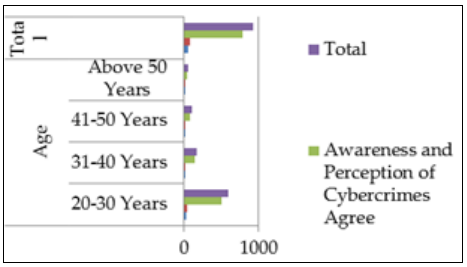

Fig 5: Education table of hypothesis 7

3.8 Testing of Hypothesis no.8

H8: Awareness and Perception of cyber-crime depends of the occupation.

The graph depicts that among 763 lawyers 636 answered in agree, 74 in indifferent and 53 answered in disagree. Where among 117 law students 98 answered in agree, 9 in indifferent and 10 in disagree. All 55 students of Computer science agreed with the proposition.

Chi-square value-= 11.661 while the P value is 0.020. P value which is 0.020 > 0.05 which means hypothesis stands accepted.

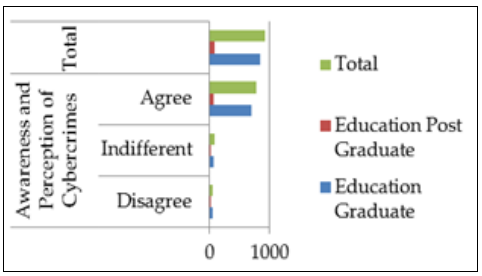

Fig 5: Occupation table of Hypothesis no.8

3.9 Testing of Hypothesis no.9

H9: Awareness and Perception of cyber-crime depends of the experience.

Most of the respondents agrees that awareness and perception of cybercrimes depend on the experience people have with cybercrimes

The chi-square value-= 14.186 while the P value is0.077. P value which is 0.077 > 0.05 which means hypothesis stands accepted.

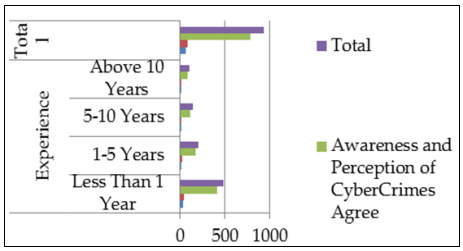

Fig 6: Experience table of Hypothesis no 9

4. Conclusion

Results drawn from the hypotheses proved that awareness, perception and knowledge of cyber-crimes have a great impact on the gender, age, occupation, experience and education level. This study can be used as the basis for law makers to legislate on the matter by including the subject of cyber-crimes mandatory in the curriculum of law students. The reason for this has been proved in the analysis as the level of awareness in lawyers and law students is less than that of computer science students. Similarly it has been noticed that women have low knowledge and awareness about cyber-crimes than male participants.

During conducting this study, many other findings have been derived. It has been noticed that there are few women in both these fields. There is a need to motivate and encourage women to join these male dominated professions. Most of the respondents do not update anti-virus in their systems. The practice of keeping back up data is not generally found. People must know where and whom to report when they become victims of cyber-crimes. There is a need to spread awareness of cyber-crimes, their punishments, PECA and cyber security to students and lawyers. Collection of digital evidence is a big challenge. Forensic labs are needed for investigation of proper digital evidence in all major cities of Pakistan.

5. Acknowledgments

Authors acknowledge the continuous support and encouragement of Mian Muhibullah Kakakhel, Senior Advocate, Supreme Court of Pakistan. They are also grateful to Dr. Iftikhar, Dr. Imran Khalil of CSIT department of UET Peshawar, Prof. Dr. Iqbal of statistics department, University of Peshawar and presidents of all bar associations of Khyber Pakhtunkhwa for their support in filing the questionnaires by the lawyers' community

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