A Study on Importance of Cyber Security in Current Technical Era and Information Security Awareness among the Youth in Thane Region

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ABSTRACT

Today use of various online applications with emergence of the internet along with that the exposure to the social media platforms are evolving day by day, which can result into highly vulnerability by loss of valuable and personal information getting into wrong hands. Hacking, online fraud, cyber-bully, phishing attack, leaking of personal information are among those risks students are exposed to in their daily activities. To safeguard ourself from this type of attacks one has to aware about cybersecurity and adopt some easy habits to protect their personal info.

The intentions of this research is to inspect the students' awareness on basic knowledge of cybersecurity while using internet for daily task. For this study a quantitative approach is used for primary data collection using a set of designed questionnaires, this approach is used to examine the students' knowledge and awareness about cybersecurity, to conduct the survey I have collected responses total 100 students from Thane region. Finally results found from the research were analysed and it shows the students' cybersecurity awareness is at a satisfactory level and more than average of the students are not much aware about how to protect personal information on internet. The survey influence is, there is no cybersecurity awareness program organized by education ministry to education students how to deal with cybercrime.

Keywords: Cybersecurity, Awareness program, Information security, Online Platform, Cyber Attacks

INTRODUCTION

The use of internet is becoming gradually intwined in the routine life of everyone, every organisation and in all nations. Also, it has a positive effect on the way that people communicate it brings the world very closer. Apart from this it has also created new avenues for start-ups and contributed business growth worldwide and has open door of opportunity to govern online. However, even though cyberspace offers us an endless list of facilities and opportunities, it is also accompanied by numerous risks. One of these risks is cybercrime. The vast use of internet has given offenders a platform through which cases of fraud are increasing day by day. Because of the abstract nature of the Internet, it becomes very easy for the cyber attackers to go scot-free.

Children now a days spend a large amount of time online, for either entertainment or educational purposes in their age, it is difficult for them to assess the opportunities and risks of using the and digital ways, kids are unaware about their lives are which digitally recorded by potentially creating long-term effects on their safety and privacy. Even sometimes, young kids do not understand and identify the dangers or risks until it is too late. Resulting that they can easily fall victim to online abuses, fraud, mental harassment etc.

Moreover, it is observed that many users of the Internet are unaware of such threats; All users, irrespective of age, knowledge are daily come across to various security risks when spending significant time on the internet. It has been observed that victim of cybercrime themselves put their personal data, along with businesses and governmental assets and infrastructure on risk. In view of this, there is a need for awareness about cyber security and initiatives taken to promote cyber education from schooling itself which will endorse users well versed and more protective while dealing with the risk associated with the Internet. For that purpose, Cyber security consciousness is the best way to educate individual while carrying out daily activity on internet.

LITERATURE REVIEW

1. Title: Cybersecurity Awareness Among Students and Faculty

As per the study [1] it has been observed the increasing growth in the internet usage which has contributed organizational activities on tips than its use to be, the clients, team members and upper-level managers can interconnect anytime with their employee and also remotely, but on other hand this rise in use of technology has also taken a negative influence on some organization or individual where they faced cyber threats recurrently.

2. Title: Stalking in the Twilight Zone: Extent of Cyberstalking Victimization and Offending Among College Students

According to [2] they reported that 4.9% of students had experienced cyberstalking. Here the role of Cybersecurity awareness can be applied to help minimize some basic attacks to individuals by educating them in college itself, it has been observed that teenagers or young generation are more likely to suffer cyber-attacks.

3. Title: Information security: Management's effect on culture and policy

According to survey of the researcher [3] suggested that there is a stout relationship between defensive measures and information network security which help individual to protect personal information on internet and enhance security performance.

4. Title: A vocabulary test to assess information security awareness.

Whereas in research paper [4] it is recommended that the basic knowledge and act of an individual has a robust relationship when it comes to use of online platforms and cybersecurity threat mitigation. Therefore, students specially must have the knowledge and also aware and alert before dealing with cybersecurity.

5. Title: Recommendations for information security awareness training for college students.

According to this survey [5] students of the business department at new England to regulate their attitude toward information and network security awareness, which will helps them to assist in manipulative an effective awareness training program, the survey analysis indicates that there is a the need of the awareness program as it upsurges their knowledge while handling cybersecurity.

6. Title: The Need for Effective Information Security Awareness

In other survey which was carried out by [6] to educate the security awareness of academic from the Arab continent, the survey was conducted for students and academicians, and the results show less insight on awareness and also didn't show any significant interest in how to reduce cyberattacks, however, it shows the strong need of active cybersecurity awareness program.

7. Title: Students Information Security Practices and Awareness

A survey was also conducted in California State University by [7] and it is observed that main problem is not the lack of basic knowledge but also the method which students practice it in real life, it also shows acquiescence with information security knowledge is which is less than understanding it.

RESEARCH METHODOLOGY
RESEARCH OBJECTIVES
The primary research objective is

1. To understand a cyber security awareness and education framework in Indian youth.

2. To explore whether students are alert while responding internet fraud.

3. To identify the consciousness of the user in terms of password security

Data Analysis and interpretation

Demographic data collection			
Demographics	**Particulars**	**Respondents**	**Percentage**
Age	17-21	81	81%
	22-26	13	13 %
	27-31	2	2 %
	32-36	4	4 %
Education	Undergraduate	81	81 %
	Graduate	10	10 %
	Post graduate	9	9 %
Field of study	Science student	58	58 %
	Others	42	42 %

Table 1: Demographic data

Table 1 shows the questionnaire based on demographic information and few topics related questions as the survey was based on awareness among youth so most of the responded are in the age bracket of 17 to 21 that is (81%). There are 13% of respondents who belong to age group between 22-26. As shown in table there are only approx. 4% of students above age group 30 years. When it comes to education most of the respondent are undergraduate that is 81% of total responses. Apart from this 58% percent of students belongs to science and 42% from another field.

Data Collection	
Question	Are you aware of the term Cyber security?
YES I am aware	66
Yes I am aware but not in detail	20

aware but with with very little knowledge	14
Never heard	0

Table 2: Opinion concerning awareness about term cyber security

Above table 2 represents the view of the respondent's concerning awareness of Cyber security' and opinion of the respondent clearly state that they are aware about it. As per responses received 66% of students says that yes they are totally aware about it. On the other hand, 20% of students says that they are somehow aware they don't have detail knowledge and 14% of students are having very little knowledge. Study also clearly shows that there is not a single student who is unaware about cyber security.

| Question	when you receive random message, you have won lottery and asked you to access link, how frequently you open link without any detail verification.
Always	3
%	3
Sometimes unknowingly I Open the link	11
%	11
Sometimes knowingly I Open the link	4
%	4
I ignore the message	47
%	47
Never open the link	30
%	30
Report Immediately to bank or Police station	5
%	5

Table 3: Responses of scenario-based question

The table 3 shows awareness among the students when it comes to cyber fraud the question was framed to know how students responds on fake message with link calming a lottery from banks and the results clearly states that 3% of respondents always open the link. 11% sometimes unknowing opens it. And the surprising fact is that 47% of people leave it attended by simply ignoring it. And Only 5% are aware about reporting this fraud to police station. Figure 1 show the analysis of the same.
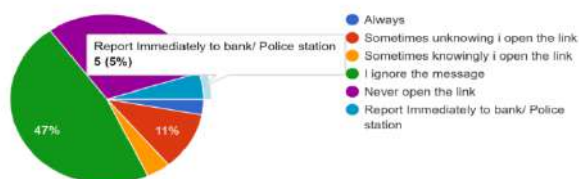
Figure 1

Figure 2

Figure 2 depicts another scenario-based question when respondent ask about while using any online selling platform how they deal with scanning of bar code when any random buyer ask them to scan a code and result is

showing that 63% of students are ready to scan the bar code after verifying user identity which is totally wrong and can lead to big financial fraud. Only 7% of the students are aware that they should report such cases in police station.
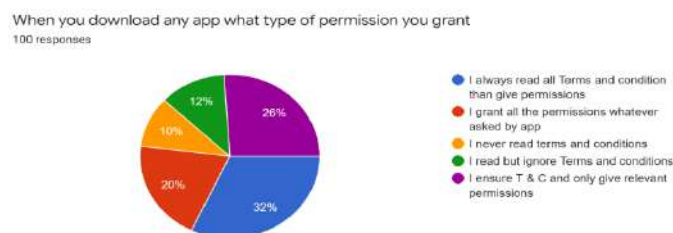

Figure 3

In another scenario shown in Figure 3 the question was framed to know awareness about app permissions about the permissions given by user to access the different folder like gallery, call records it has been observed that 32% respondents always reads the terms and condition and give access but they not understand it only 26% of the students are aware about they should aware about Terms and Conditions before giving permissions and after understandings terms and conditions only user needs to give only relevant permission not all. 20% of students grants the permissions whatever asked by app which is very serious threat to their private data in mobile phone.

Figure 4 shows that awareness about password as passwords are a first line of defence against many internet ills, but few people actually treat them lightly and keep same password for all accounts and the reason can be anything like it is easy to remember or simple to keep track of it. To know about password awareness among students 2 questions are framed and result are surprising more than 30% of students keep all passwords same as it is easy to memorize it which is quite dangerous.
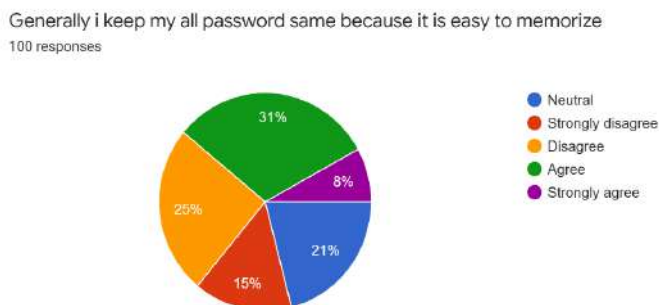

Figure 4

No one enjoys working with passwords, but they're necessary for keeping your accounts secure one should change their passwords after every few months. Below figure 5 shows that there is less awareness in youth while updating password it is observed that 30 % of youth are not aware about the same as they never change it.

Figure 5

Hypothesis Testing
Test 1

Objective 1: To understand a cyber security awareness and education framework in Indian youth.

H0: There is no awareness about cyber security among youth

H1: There is no awareness about cyber security among youth

Total Number of respondents (Sample size): 100

Level of significance: 5% (0.05) & Degree of freedom: 3

Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2(3, 0.05) = 7.81$

H0 is accepted if $\chi^2 \leq \chi^2(3, 0.05) = 7.81$

Data Collection	
Question	Are you aware of the term Cyber security?
YES I am aware	66
Yes I am aware but not in detail	20
aware but with with very little knowledge	14
Never heard	0

SCALE	Observed (O)		
YES I am aware	66		
Yes I am aware but not in detail	20		
aware but with with very little knowledge	14		
Never heard	0		
Expected(E)	**O-E**	**(O-E)2**	**(O-E)2/E**
25	41	1681	67.24
25	-5	25	1
25	-11	121	4.84
25	-25	625	25
		Total	98.08

Conclusion based on test 1.
Thus, $\chi^2 = 98.08 > 7.81$

Therefore, Reject H0 at 5% level of significance and accept H1.

Thus it is proved that there is a awareness about cyber security among students.

TEST 2
Objective 2: To explore whether students are alert while responding internet fraud.

H0: Students are alert while responding internet fraud

H1: Students are not alert while responding internet fraud.

Level of significance: 5% (0.05) & Degree of freedom: 5

Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2(5, 0.05) = 11.07$

H0 is accepted if $\chi^2 \leq \chi^2(5, 0.05) = 11.07$

Question	when you received random message, you have won lottery and asked you to access link, how frequently you open link without any detail verification.
Always	3
%	3
Sometimes unknowingly I Open the link	11
%	11
Sometimes knowingly I Open the link	4
%	4
I ignore the message	47
%	47
Never open the link	30
%	30
Report Immediately to bank or Police station	5
%	5

SCALE	Observed (O)	Expected(E)	O-E	(O-E)2	(O-E)2/E
when you received random message, you have won lottery and asked you to access link, how frequently you open link without any detail verification.					
Always	3	25	-22	484	19.36
Sometimes unknowingly I Open the link	11	25	-14	196	7.84
Sometimes knowingly I Open the link	4	25	-21	441	17.64
I ignore the message	47	25	22	484	19.36
Never open the link	30	25	5	25	64.2
Report Immediately to bank or Police station	5	25	-20	400	128.4
				Total	256.8

Conclusion based on test 2

Thus, $\chi^2 = 256.8 > 11.07$

Therefore, Reject H0 at 5% level of significance and accept H1.

Hence, from above information it is clear that respondents are not much aware while dealing with cyber fraud.

TEST 3
Objective 3: To identify the consciousness of the user in terms of password security.

H0: There is consciousness is found among the user while dealing with the password.

H1: There is no consciousness is found among the user while dealing with the password.

Level of significance: 5% (0.05) & Degree of freedom: 4

Decision Criterion:

H0 is rejected if $\chi^2 > \chi^2(4, 0.05) = 09.488$

H0 is accepted if $\chi^2 \leq \chi^2(4, 0.05) = 09.488$

Questions	Generally, I keep my password same because it is easy to memorize
Neutral	21
Strongly Disagree	15
Disagree	25
Agree	31
Strongly agree	8
SCALE	Observed (O)
Neutral	21
Strongly Disagree	15
Disagree	25
Agree	31
Strongly agree	8

Expected(E)	O-E	(O-E)2	(O-E)2/E
25	-4	16	0.64
25	-10	100	4
25	0	0	0
25	6	36	1.44
25	-17	289	11.56
		Total	17.64

Conclusion based on test 3

Thus, $\chi^2 = 17.64 > 09.488$

Therefore, Reject H0 at 5% level of significance and accept H1.

Hence, from above information it is found that there is no consciousness among the user while dealing with the password

SCOPE OF THE STUDY

In this era with increase the use of digitalization and high dependences on online platform for entertainment, work, study, shopping, payment and hang out purpose and by looking the immediate negative impact related to cyber security the research has been conducted to understand how much youth is aware while using technology. The scope of the study is limited to recruiting 100 volunteers between the ages of 18 and 32. Which will be conducted via google forms.

Significance of the study

We are living in an era where information technology has bridged the gap between countries. Either it can be any organisations or individuals, everyone now is storing their personal data on world wide web which means that digital footprints are growing on a large scale. This dependency on internet has open the door for hackers and can misuse technology for their advantage.

Source of Data Collection

Primary Data: The form of the survey was created using Google forms and was distributed through WhatsApp groups for students to get access to it. The survey took one month for entire research, a total of 100 valid responders were able to fill the survey without missing data, This sample is sufficient for the analysis of my research topic in their paper where a total 16 questions and are designed. The estimated time required to completely fill google form is 10 to 12 minutes

LIMITATION OF THE STUDY

1.The study is based on only 100 responadent so Sample size small

2.The Data collection is through google forms only as are different ways to collect data like interviews, face to face communication, case study, etc. but here its only via google form

FINDINGS AND CONCLUSION

Cybersecurity awareness is need of today's lifestyle when most the things are going digital at all level, this is more important for Students as well since they are going to be the future of nation most them will work in IT organizations so it is important to educate them about how to handle internet carefully as they use the internet at their daily activity so, some basic cybersecurity knowledge is needed for every individual. The result of this research indicated that even though the students shown a high level of awareness in some questions like in confidentiality and privacy but they are lacking basic knowledge on the aspect of password management system, phishing, and Two Factor Authentication. This research also shows there is strong need of cyber security related subject included in school curriculum itself.

FUTURE SCOPE

The future scope of this research is to create cybersecurity awareness programs and also implement it specially for youth. It has been observed that the participants as the results show they are more vulnerable to cyber-attacks so if they slightly pay attention they can move quite safter side.

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