

Social Networking Security: Awareness among Indian Users

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ABSTRACT

Social networking has become a very popular activity these days among all categories of people. Billions of people use it to meet old friends, make new friends, share and view information and fulfill their social needs to interact with people. But with these attractions, come the risks of exposing personal information to unknown people. This paper aims at studying the awareness about the importance and ways of having security and privacy checks while on these social networking sites. Respondents to this study belonged to different educational backgrounds, age and gender. Data was collected and then analysed based on the category of the questions related to basic awareness, technical awareness, advocacy and responsiveness towards the proper usage of social networking sites.

Key words - Cyber crimes, Internet Security, Social Networking

I. INTRODUCTION

Social Networking is a platform that is used to build social relations among people who are linked to each other in some way like having common interests, likes for similar activities, similar backgrounds or real life connections. In a typical social network service, each user has a profile, social links and various additional services. Users of social networking sites create their public profiles, add list of other users with whom they want to interact and view and share information with these set of users. These users can also interact with each other through instant messaging, e-mails etc.

Because of its ease to use and availability of cheap technology, social networking has become a popular medium of finding and interacting with new and old friends. For this purpose, many users of these social networking sites tend to disclose their personal information like name, gender, pictures, phone numbers, address and sexual preferences etc. [1]. What they do not realize is that providing personal information on the public platforms will not only put them in danger of opening up to total strangers who can misuse their personal information for purposes like identity thefts, applying for credit cards etc. but can also cause them physical harm. An empirical research in this field has shown that many of the people either do not have awareness regarding privacy or security issues associated with these social networking sites or they are not aware of the risks they are posing themselves to, in disclosing this information on public platforms [2].

One more important factor to be considered is that social networking is attracting people from all walks of life including teenagers and children as well.

These people do not understand the importance of security and privacy. Many of them post their real life pictures, addresses, mobile numbers name of their schools and other confidential information without adequate security settings. Parents too are sometimes too busy to monitor their children's online activities and hence with easy accessibility of gadgets and such platforms, teenagers and children fall prey to security and privacy attacks.

II. RELATED WORKS

One of the problems of social networking usage is that these sites are also being used for sexual crime offenders, in which youth are their main target [3]. This means that university and college students are within the target group of the offenders since they are usually aged between 17 to 30 years old. In terms of gender-based awareness, [4] found out that young women are more concern and being more protective towards their privacy in Facebook than their men counterpart. But that does not mean that women users are safer than their men counterpart. Based on a media report, women are more addicted to the usage of social networking sites than men [5]. It means that there will be more opportunity for women to be at risk when using the social networking sites since they are more likely to spend more time using the sites. Although in [3], authors clearly mentioned about the youth as being the target of crime offenders, however, youth in the literature is defined as between 7-17 years old, which is different than the target group of this paper. Other related literatures reviewed are focused on the students from other countries like Australia [6] the United States [4] [1] and Canada [7]. This paper however will focus on social

networking usage awareness in Internet users in India specifically in the region of tricity (Chandigarh, Panchkula, Mohali).

III. MATERIALS AND METHODS

The data of the study is based on a survey distributed to a total of 90 respondents in which it was distributed randomly in January 2014. All of them were returned, yielding 100% response rate. There were 14 questions focusing on the respondents' awareness of computer security from the perspective of social networking usage [8]. All surveys responses were recorded and used for statistical analysis. Descriptive cross tabulation method was used to conduct the data analysis and SPSS v20 is used. The respondents came from different academic background, age groups and gender background with the minimum education graduation and highest education level was PhD holder. In terms of age, the respondents were aged between 18 to 65 years old. 62% of the respondents were female, and the rest were male respondents. Figure 1, Figure 2 and Figure3 describe the composition of the respondents in details.

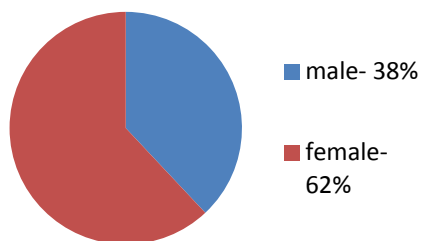


Fig 1: Respondents composition based on gender.

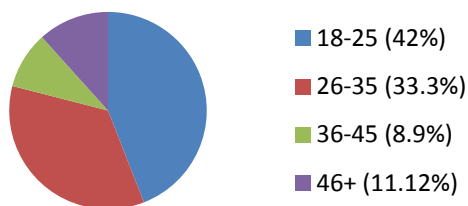


Fig 2: Respondents composition based on academic background.

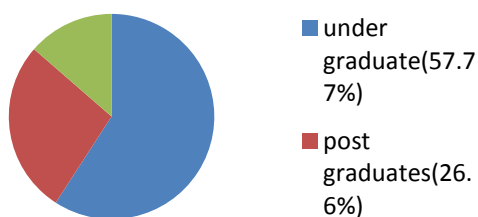


Fig 3: Respondents composition based on age.

IV. RESULTS AND DISCUSSION

The results are categorized based on several groups; basic knowledge on social networking usage awareness; technical awareness for secure social networking; social networking awareness advocacy and responsiveness towards incidents and suspicious profile over such sites. The findings are analyzed based on gender and also academic background of the respondents. The following sub-sections discussed the results obtained for each category.

Table 1: Social Networking Basic Awareness Survey Questions.

Code	Questions
Q1	Aware of pretenders and are very vigilant (in adding them as your friend)
Q2	Share or post your personal information such as your phone numbers, home/work address in your profile
Q3	Do you think before posting your photos (to avoid it from being exploited)
Q4	Share your password with anyone
Q5	Add people as friends to your site only if you know them
Q6	Meet someone whom you have first 'met' on social networking site

Table 2: Social Networking Basic Awareness Based on Gender.

Q.N.	Male		Female	
	Yes (%)	No (%)	Yes (%)	No (%)
Q1	70.58	29.41	85.71	14.28
Q2	58.82	41.17	25.00	75.00
Q3	64.70	35.29	78.57	21.42
Q4	29.41	70.58	25.00	78.57
Q5	88.23	11.76	85.71	7.14
Q6	11.76	88.23	10.71	89.28

Table 3: Social Networking Basic Awareness Based on Education Level.

Q.N.	Graduates		Post Graduates and Ph.D.	
	Yes (%)	No (%)	Yes (%)	No (%)
Q1	66.66	33.33	95.23	4.76
Q2	41.66	50.00	33.33	66.00
Q3	75.00	25.00	71.42	28.57
Q4	16.66	83.33	38.09	61.90
Q5	75.00	14.28	100.00	0.00
Q6	12.5	87.5	9.52	90.476

4.1 Basic Awareness

The survey has six questions that measures the basic awareness of the respondents (Table 1); Q1, Q2, Q3, Q4, Q5, and Q6. Questions Q2, Q4, and Q6

are questions which were asking whether the users will do negative actions on the social networking sites. These types of questions were expecting respondents to answer “No”, while other questions; Q1, Q3, and Q5 are questions that were expecting “Yes” answers. Table 3 shows the responds on the survey questions that measure the basic awareness on social networking usage.

Based on the result shown in Table 2, most of the respondents or more than 60% respondents for both gender answered “Yes” for questions Q1, Q3, and Q5. This shows that most of the respondents have good knowledge in basic awareness. However, male respondents produced 64.70% of “Yes” answers for Q3 compared to female’s 78.57%. This shows that male respondents were lacking in thinking before they post their status than the female respondents. Q2 shows a very significant difference in the opinions of males and females. As about 60% males share their phone numbers, home/work address in their profile but only 25% of females feel comfortable in sharing such information in their profile. In terms of questions Q4, and Q6, respondents from both gender gave over 70% of “No” answers. This shows that they are aware of the danger of sharing their personal information in the social networking sites. Female respondents again dominate the results by giving 78.57% and 89.28% for “No” answers respectively for all the questions while male respondents gave slightly lower percentage of “No” in all questions. Although most of the respondents gave high percentage of awareness regardless of their gender, based on the findings, female respondents showed higher awareness than the male respondents.

Based on the respondent’s educational background, the result shows that, respondents with higher educational background are more aware on social networking security than respondents with lower educational background.

Based on Table 3, it shows that post-graduates and Ph.D. respondents gave more than 70% of “Yes” answers to questions Q3 and more than 95% yes for Q1 and Q5. While there were only 66.66%, 75% and 75% of “Yes” answered by respondents with graduation degree and below for the same set of questions. In terms of questions Q2, Q4, and Q6, similar trend repeated when respondents with higher educational background recorded higher percentage of basic awareness. Ph.D. Degree holders and post graduates responded 66.6%, 61.90% and 90.47% of “No” answers for this set of questions. While respondents with the lower educational background recorded 50%, 83.33% and 87.5% which are slight lower than the other group. It can be concluded that respondents with higher educational background have basic awareness of using social networking sites.

However, in general, regardless of educational background, most of the respondents have basic awareness in social networking sites usage.

Table 4: Social Networking Technical Awareness Survey Questions.

Code	Questions
Q8	Use privacy setting of the social networking site
Q9	Install monitoring software to monitor online activities
Q13	Enable privacy setting to restrict who can post and access information on your children websites

4.2 Technical Awareness

Technical awareness of the respondents has also measured. Technical awareness refers to the settings that have been changed and used by the respondents to have a secure social networking site. In this study, the technical changes are the privacy setting of the social networking sites to make its page or status can only be viewed by users who are connected to them. Another technical mean that have been measured in this study is the use of 3rd party monitoring software to monitor the usage in the social networking sites. Table 4 describes the questions used in the survey for measuring technical awareness for social networking users. Based on the acquired data about the technical usage on their social networking sites, the technical awareness of the users is then measured.

Table 5: Social Networking Technical Awareness Survey Response based on Gender.

Q.N.	Male		Female	
	Yes(%)	No(%)	Yes(%)	No(%)
Q8	88.23	11.76	82.14	17.85
Q9	11.76	88.23	10.71	89.28
Q13	58.82	41.17	78.57	21.42

Table 6: Social Networking Technical Awareness Survey Response based on Educational Background.

Q.N.	Graduates		Post Graduates and Ph.D.	
	Yes(%)	No(%)	Yes(%)	No(%)
Q8	95.83	4.16	71.42	28.57
Q9	12.5	87.5	9.52	90.47
Q13	58.33	41.66	85.71	14.28

Table 5 shows the percentage of the awareness survey based on gender. Based on the table, respondents of both gender showed majority of them uses some technical measures that include networking settings, but maximum people do not install software for secure social networking activities. Majority the respondents are also aware of

the privacy settings of the social networking sites. This is shown in the result where more than 50% of the respondent, answered “yes” to Q8 and Q 13, regardless of the gender. The result also showed that the percentage of awareness in terms of more advance approach as described in Q8 and Q13 are higher than in Q9. This reflects that most of the users are not keen to explore further the security mechanism in social networking sites. Table 6 shows the percentage of the technical awareness survey based on academic background. In general the results showed that for each questions, majority of the respondents from all education category aware of technical awareness for social networking sites except the case of installing monitoring software

Table 7: Social Networking Awareness Advocacy Survey Questions.

Code	Question
Q10	Educate them on what information should be kept private and not shared
Q11	Tell them to inform you if someone asks or talks about sensitive issues that makes them uncomfortable
Q12	Tell them that information posted online cannot be taken back

Table 8: Social Networking Security Awareness Advocacy Survey Response based on Gender.

Q.N.	Male		Female	
	Yes(%)	No(%)	Yes(%)	No(%)
Q10	82.35	17.64	78.57	21.42
Q11	64.70	35.29	53.57	46.42
Q12	58.82	41.17	35.75	64.28

Table 9: Social Networking Security Awareness Advocacy based on Educational Background.

Q.N.	Graduates		Post Graduates and Ph.D.	
	Yes(%)	No(%)	Yes(%)	No(%)
Q10	62.5	37.5	100.00	0.00
Q11	58.33	41.66	57.14	42.85
Q12	41.66	58.33	47.61	52.38

4.3 Advocacy

In the survey, questions regarding security advocacy on social networking sites usage have also been asked. The advocacy of security for social networking is regarding the effort of the users to teach, educate and advocating people around them especially their siblings, family members or their children on security measures and issues for social networking usage. The questions for this category are shown in Table 7.

Table 8 shows the results for technical awareness among the respondents based on gender. It shows that more than half of the respondents answered yes for all questions asked regardless of their gender. Male respondents showed better percentage in terms of advocacy where they responded 82.35%, 64.70% and 58.82% percents to all three questions respectively. Women respondents recorded lesser percentage of advocacies with 78.57%, 53.57% and 35.75% respectively. It shows that men are more aware of advocating security in social networking sites usage.

In terms of educational background, survey results showed in Table 9 showed that, 100% of post graduate and Ph.D. holders educate people around them about what information should be kept private and not shared. More than 50% respondents tell to others to talk to them if they (others) feel uncomfortable due to sharing information on sensitive issues. But only less than 50% people (irrespective of education level) tell others that information posted online cannot be taken back.

Table 10: Social networking responsiveness.

Code	Question
Q7	Do you respond to harassing or threatening comments posted on your profile?
Q14	Do you respond if you have reasonable belief that someone is a scam artist or sexual predator on the social networking site?

Table 11: Social Networking Responsiveness based on Gender.

Q.N.	Male		Female	
	Yes(%)	No(%)	Yes(%)	No(%)
Q7	23.52	76.47	32.14	60.71
Q14	47.05	52.94	46.42	53.57

Table 12: Social Networking Responsiveness based on Educational Background.

Q.N.	Graduates		Post Graduates and Ph.D.	
	Yes(%)	No(%)	Yes(%)	No(%)
Q7	37.5	62.5	28.57	71.42
Q14	29.16	70.83	66.6	33.33

4.4 Responsiveness

Responsiveness describes the action of the social networking sites users towards any incidents or suspicious profile account on the sites. Question Q7 refers to the respond of the users, positive or negative in any approach (comment, message) to the person who are writing harassing or threatening comments on their profile (Table 10). Question Q14 refers to the respond by users through reporting to the authority

(police, MMC) on suspicious account that may be administered by scam artist or sexual predators.

Table 11 describes the responds by the respondent on the given survey questions based on gender. Based on the result, majority of the respondents from both gender are not responsive towards harassment and threats that are happening in the social networking sites with the men are the least responsive. Female users recorded higher responsive percentage towards such incident on the sites with 32.14% while men respondents only obtained 23.52%. In terms of reporting on suspiciously scam profile on the social networking sites, majority of the users responded negatively with 47.05 % responded by male users while 46.42% female users will report for the scam profile incident.

Table 12 describes the responsiveness percentage in terms of incidents on social networking sites based on educational background. More than 60% respondents irrespective of their education background are negative in terms of responsiveness towards harassment and threat over social networking sites with only 37.5% (graduates and below) and 28.57%(post graduates and above) respondents answered "Yes" for question Q7. But more people (66.6%) with higher education background report if they believe that someone is a scam artist or sexual predator on social networking site.

V. CONCLUSION

The primary motivation of this paper was to measure the security awareness on social networking sites usage. The awareness is divided into three categories; basic, technical, advocacy. The results of the present study can be categorized based on gender and education level. In terms of gender-based user category, women respondent are more aware of social networking usage than the men users. These results are congruent with the work by [4] that has also found that women are more aware than their men counterpart in terms of using the social networking sites.

Most of the respondents regardless of their education background are reluctant to meet new friend that they engaged in their networking sites. However, the respondents with higher academic qualification are aware of pretenders and are vigilant. They also educate their children on proper use of social networking sites. As a conclusion, this study gives an outlook upon the need for social networking users in India high awareness when dealing with the usage of the sites in order to combat the increase of cyber security incidents.

Limitations of this study were that the respondents belonged to the urban India and of the limited demographic area. Also, it is seen that social

networking usage is increasing in the children as young as 7 years. These children were not included as respondents. Future work may include large number of respondents including wider range of age groups, demographic location and academic qualifications

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