

# Issues and Challenges of Cyber Security for Social Networking Sites (Facebook)

Roshan Jabee

Department of Computer Science and  
Engineering, Jamia Hamdrad  
New Delhi, India

M. Afshar Alam

Department of Computer Science and  
Engineering, Jamia Hamdrad  
New Delhi, India

## ABSTRACT

Social networking websites such as Facebook, Twitter, Myspace, Google+, and LinkedIn are the popular social sites. Facebook is most popular social networking site. Social sites are most common platform to communicate with their other friends, family and share thoughts, photos, videos and lots of information. Social networking websites have become platforms for cybercriminals for cybercrime; cybercriminals exploit sensitive and personal information through social engineering and reverse social engineering. It is usual for the users of social websites to share information; however they lose privacy, while sharing information with strangers, they can fall in honey trap made by them. Privacy has become an important concern in online social networking sites. Users are unaware of the privacy risks involved when they share their sensitive information on the social network sites. The default settings share everything, users have to change their default privacy setting options to make their accounts and personal information more secure. Security attacks continue to be a major concern of all users. How to keep social networking sites more secure and more private are the challenges that have been concern for every user. It is difficult for social networking sites and users to make and adjust privacy setting to protect privacy without practical and effective way to identify measure and evaluate privacy. Maximum numbers of users are not aware of the security risk associated whenever they shared sensitive data on the social sites, so that privacy concern will be raised among those online communications if their personal data has been shared to other users. The users should be aware of their privacy quotient and should know where they stand in the privacy measuring scale. Unfortunately many users are not aware of this and become victim of privacy and identity breach. So we conducted a survey to find users view regarding security and privacy of social networking sites and regarding default privacy setting improvement particularly Facebook.

## Keywords

Social network privacy issues, security issues, default privacy setting privacy awareness, social networking sites.

## 1. INTRODUCTION

Cyber is a common term used for the computers interconnected in a network and we can say a cyber is related to a computer network. As the number of users in the network is increased which give rise to our concern about the security which we called as “cyber security”. Cyber security is defined as the security of data on cloud from theft, damage or unauthorized access. Now the questions arise from where the maximum security breaches occurs in the network? The more ambiguous is the users, the more there curiosity of accessing the information some may do knowingly and some unknowingly, from all this facts obviously our mind will drift towards the social networking sites. “Social networking sites”

is an online medium that allows users from different background to create a profile and interact with the other users on the same websites. Social networking sites such as Facebook, Myspace, twitter, Orkut etc. have become so popular among the people that they have started to share every single moment of their lives on these sites. Social networking sites are one of the easiest forms of communication these days and have become an unavoidable thing for youth. Every sectors of the society are dependent on these. But social sites have negative aspects also. Because of the growing popularity of these sites they serve as a target for cybercrime and attacks. It is mostly based on how users are using these sites like Facebook and many more. Attackers can easily access and gather their personal and sensitive information. Users are less aware and least concerned about the security setting. And they easily become victim of privacy and identity breach.

Lack of cyber knowledge is the main cause of above all facts due to which private photos and personal information are shared among the network. In this paper our main focus is towards how to come out of all the issues of security in social networking sites. We have tried to analyze and interpret data from all the views and opinion of ambiguous users from distinct background. The objective of identifying vulnerability with privacy and security system is to help to curb web crimes associated with privacy and identity breach on social networking sites. And also it aims to improve default security system of social networking sites-Facebook.

## 2. LITERATURE REVIEW

The interest of social sites has been increased and many research papers have been published. Some of them discussed the security issues of social networking sites, analyzing the privacy and the risks that cybercrimes the online social networking web sites.

Chewe et al. [1] focused on how personal information is being affected by internet and social media, and also discussed how the privacy become a risk and how to assign security awareness to prevent security breach. They highlighted the current situation on using social network and threats that can affect the users. Finally they stated some security awareness that can be practiced to be more aware of social network threats.

Gangopdhay and Dhar [7] have published a report in which they have mentioned that Social sites attract teenagers and allow them opportunities to get along with known and unknown people. Making friends with unknown people and adding them to their friends list might be considered as classy or as things that can be showed off. So they focused on how and to what extent the disclosing of personal information by users is secure. They also focused the security setting made by the social networking sites like Facebook, Myspace Orkut, twitter etc.

The researchers Gunatilaka et al. [8] have published a report in which they have mentioned that because of the increasing popularity of social networking sites, users have become a target for attackers. Social networking sites are based on social relationship among people. The people share maximum number of their personal and sensitive information in their social sites. Because of the personal information and easy accessibility, attacker is tracking users to initiate with them to perform some actions. Many sites attempted to avoid those misuses, but attackers are still able to overcome those security measures. They also contains the issues includes a survey on different privacy and security issues in social sites. The issues conclude privacy risk, identity steal, physical threats, and hacking, phishing, spamming and malware attacks.

Pesce and Casas [9] showed that social networking users knowingly and unknowingly post certain types of private and sensitive information that can cause huge damage, harm them. Shared news, photos, videos, private information and every movement of real life activities with family and friends are concern of user privacy. They also tried aware users the epochal breaches of their privacy and inform them the make of new privacy preserving setting of tagging photos on social sites.

Krishnamurthy and Wills [11] characterized and measured various privacy aspects across different SNSs using the concept of bits of shared information. They also exposed that, much like traditional websites, third-party domains track user's activities in Social Networking Sites. Contrary to widespread assumptions.

Boyd and Hargittai [10] mentioned that teenager do not care about privacy settings in social sites like Facebook.

Leitch and Warren [12] told in his a report; personal information can be acquired by anybody at any time and at any place through internet. The have allowed users to massage instantly post their feelings, share experience and much more interesting. But there are many issues regarding security within its environment. They explored several security vulnerabilities and threats associated with Facebook.

F. Stutzman and J. Kramer-Duffield [21] provide advice on how to enhance the privacy of users in social networking sites. To avoid identity theft, they suggest making users profiles private for friends only, which will reduce the information theft risks on Social Networking sites.

A. Verma et al. [22] proposed a decentralized and distributed architecture that preserves privacy and security of the users in social networking sites. They enhanced the privacy and security by the use of a cryptographic technique like (Random Sequence Algorithm) RSA and digital signature.

C. Marcum et al. [23] suggested that users may not understand the risks associated with sharing personal information or the potentiality to use this information to predict highly confidential data like social security numbers.

Yabing Liu, et al., (2011) tried to improve defaults and provide better tools for maintains privacy. However, they lamented that the full extent of privacy problem remained unknown and there was little quantification of the incidence of incorrect privacy settings or the difficulties users face when managing their privacy.

### 3. METHODOLOGY OF THE STUDY

- This study of the research used questionnaire-based survey method. A detailed and well-structured questionnaire was designed and distributed to the people of different background. This survey was conducted at following places.
- JamiaHamdard, Hamdard University, New Delhi
- JamiaMillia University, New Delhi

### 4. RESULTS AND DISCUSSION

The aim of the research is to focus on the issues and challenges user face while using social networking sites. So, the objective here is to analyze and identify vulnerability in privacy setting and to evaluate the risk associated with identity and privacy breach. So to study this, we collected the statistical data by conducting a survey among the different users having different background i.e. (student, employees, business man etc.).This questionnaire consists of 20 questions and a total of 170 social networking users were included in the survey. Different users have different opinion and the different level of usage. Firstly, we asked them about their education level among them 70(41.18%) are postgraduate, 2.94% had studied Standard 10, while there were 16 users (9.41) was in intermediate class, 50 people (29.41%) who had completed their under-graduation and 24 user (14.18%) were holding a Graduate and 70 user (41.18%) were holding a Postgraduate and 2.94% user in doctorate. Along with the education level we asked of their occupation i.e. their working status among them maximum number of users were students i.e. 92%, while 2.35% were business man, and Govt. (1.76%), non Govt. (3.53%). This means that maximum number of users were between the ages of 15 -25yeras.

#### 4.1 Facebook Users

A total 153(90%) users out of 170 were to be found Facebook user and 10% users were not having account on Facebook. Means Facebook is quite popular among people.

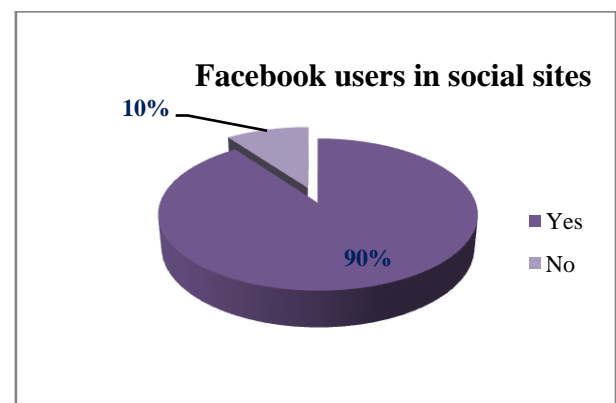


Figure 4.1: Pie chart of Facebook users in social networking sites

#### 4.2 Using Other Social Networking Sites Status

There are different types of social networking sites, which were used in the survey

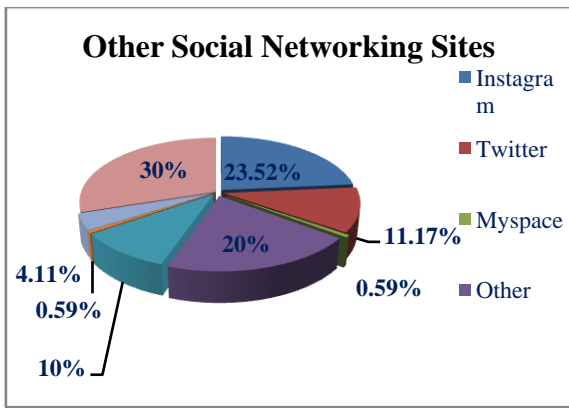


Figure 4.2: Pie chart of users are using other social networking sites

This study reveals apart from Facebook people are using different other social networking sites too. Among them the maximum number of users 23.52% of the total people were using the Instagram, 11.17% number of the users were using Twitter, A less number of users .59% were using Myspace, 20% users were using other sites, 10% of users was using both sites Instagram and twitter, .59% users were using Twit & Myspace both, whereas 4.11% of users were using Inst. Twit & Myspace all and 30% users they were not using these sites. So, this shows these are not as much as in use or poplar as Facebook.

### 4.3 History of using social network sites- Duration

Majority of the 170 respondents, 53 users (i.e. 31.18%) were using the Facebook for more than 5 years while minimum number (3.52%) of user were using Facebook since one year and 5.29% users were using from less than 1 year, 8.23% of users was using for more than 2 years, 10.59% of users were using for more than 3 years, 15.88% of users were using more than 4 years, whereas 15.29% of users were using the Facebook for less than 5 years, and 10% of users were not using Facebook.

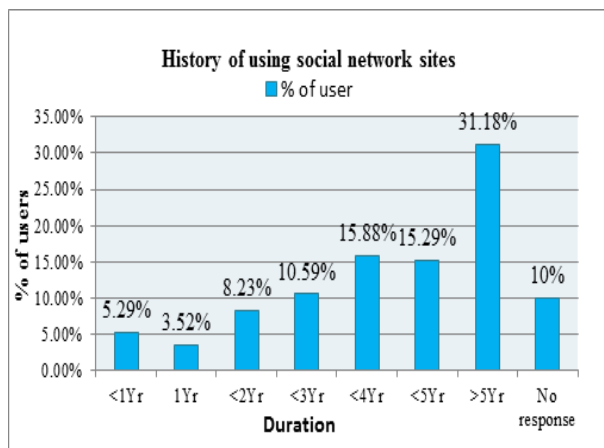


Figure 4.3: History of using social network sites- Duration

### 4.4 Users profile name

As per result, 83% users have real name on social networking sites whereas 5% users have partial name and 2.35% users have fake name.

### 4.5 Share contact details on social sites

The study result shows that majority (68.82%) of the users were not sharing personal details on social sites.

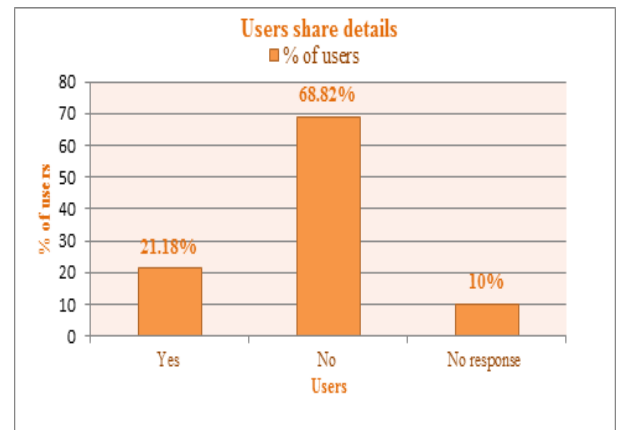


Figure 4.4: user share contact detail on social network

### 4.6 Users satisfied with privacy setting

The result shows that 23% users were not satisfied with privacy setting of social sites and 77% users were satisfied with the default privacy setting however they also stated that default privacy setting needed improvement.

### 4.7 User trusts the privacy setting and share photographs on Facebook

The result shows that 41% users did not trust security setting of social sites and 49% users trusted the Facebook security setting while 10% of the users did not response. Because of their trust, they share photographs and 49% user share photographs. Almost 75% of users do not read the privacy policy and maybe that is the reason that of them does not trust the Social networking sites provider in protecting their personal information.

### 4.8 User experienced privacy breach and identity theft

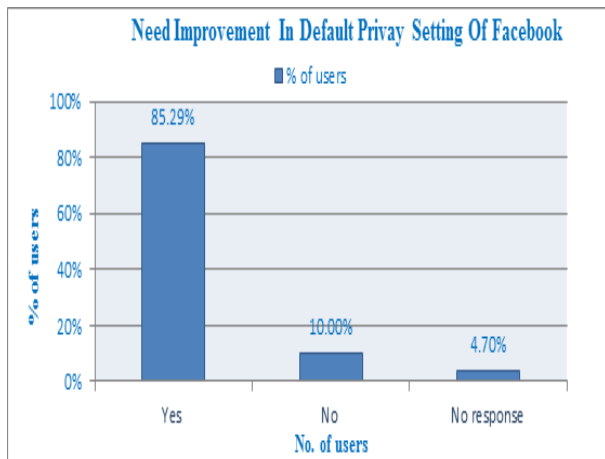
Still 25% people have experienced privacy breach and identity theft in social networking sites and 10% user did not response. When we asked them about their identity theft among them, 31% user answered in yes.

### 4.9 Default privacy setting of Facebook need improvement

Abbot 85% users want improvement in default privacy setting of Facebook. And 84.7% users said there are many scope of improvement in security setting of Facebook.

Table 1: default privacy setting of Facebook need improvement.

Response	No. of users	% of users
Yes	145	85.29
No	17	10
Depends	8	4.70
Total	170	100



**Figure 4.5: default privacy setting of Facebook need improvement**

## 5. CONCLUSION AND FUTURE SCOPE

This study highlights the need of improvement of default privacy setting of Facebook to prevent cyber-attacks and disclose of personal information publically. The growing popularity of these sites has become target for cybercrime and attacks. As per survey report, 92% of users are student, and maximum numbers of users belong to age group 15 -25years. 77.05% of the total users are satisfied with the default security setting but they also stated that default privacy setting needed improvement in Security settings. 49% users trust Facebook security settings whereas 40% don't trust. 24% users still have experienced privacy breach. Users are not aware about the privacy setting and use default setting as it is and are least bothered to change it. In total 85% users want improvement in default privacy setting. This study strongly recommends the users should be more aware and more concerned about the security setting of social sites. In conclusion our result states that users should be aware of their privacy quotient and Facebook should work forward towards their security settings in order to save their users from privacy breach and various cyber-attacks.

Future work includes conducting this survey at a big scale using a large sample size, more detailed security related questionnaire and on other SNS also so that more details are covered about the security aspects of social networking sites. Apart from this still there is a lot of research work is required in the field of privacy and security of SNS's.

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