An observational study on Privacy settings of the Asian Indian diaspora on Facebook.

What is the current level of trust in sharing information on Facebook in the public domain?

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Introduction

Facebook is an American online social media and social networking service founded by Mark Zuckerberg and his fellow roommates at Harvard University. The access to the initial versions of the website was limited to university students of Ivy League colleges in the United States, and then successively to most universities in the United States and Canada. Facebook’s popularity has been on the rise since its inception in 2004, and on September 26, 2006, Facebook opened to everyone at least 13 years old with a valid email address [1]. The total number of users as of this writing is reported to be 2.5 billion. If we look at the categorized number of users of Facebook by country, as reported by statista.com, 260 million unique visitors use Facebook from India alone.

During the creation of a Facebook account, users are asked to fill their personal information viz. gender, birthdate, personal summary, and other such information. Some of this information is demographic in nature, for example, current city, hometown, known languages and address. Although a lot of this information is not sensitive in nature, some personal information such as email, address, social links, and phone number, is highly sensitive, and its presence in the public domain of the internet poses a grave threat to the privacy of an individual.

Background

In the current day and age, when trust on social media websites like Facebook is decreasing, user behavior is expected to have had changed since the past few years. Sharing personal information on the internet has serious implications on an individual’s life, and awareness of this issue has been on a rise. Although there have been other studies on this topic many of these studies are old and, also not specific to the Indian (South-Asian) region. Having said that, there are some aspects that are consistent across all nationalities and cultures. For example, in one study [2], it is duly noted that being able to manage our reputations, and protecting our privacy, create a tension of sorts, thus making it difficult for the users not to lean on one side. There is another aspect to protecting one’s privacy, which is to stay vigilant and aware of the new changes that take place on the Facebook platform. It is stated in a study [3], that it is increasingly getting difficult for the users to keep up with the user interface changes that take place on the platform, especially related to privacy settings. Facebook users should always look into their security and privacy settings thoroughly and not assume that Facebook has its best interests for the user (sic) [3].

Methods and Data

A total of 50 profiles were selected to collect certain parameters. For the purposes of this study, the following parameters were collected by manually scraping the friends’ profiles on Facebook:

1. Geographical area: Eastern, Central, Western, Northern, and Southern; which are considered based on the administrative divisions of India [4].
2. Age group: Selected in multiples of 5, e.g. 26-30, 31-35.
3. Gender: Male or Female. Coded as M or F.

And the following parameters were collected in the form of binary notations, i.e. whether a certain parameter was shared or not. The parameters were seen from own account, and then the same parameters were seen from a new account with no friends in it. Essentially, we checked whether some information that was shared with friends was also shared with non-friends (allowing public access) or not. ‘Shared’ was coded with a ‘0’ and ‘not shared’ was coded with ‘1’. Those parameters are:

1. Current city: 0 or 1
2. Hometown: 0 or 1
3. Work: 0 or 1
4. Education: 0 or 1
5. Email: 0 or 1
6. Social links: 0 or 1
7. Birthday: 0 or 1
8. Gender\_visibility: 0 or 1
9. Languages: 0 or 1
10. Religious views: 0 or 1
11. Relationship: 0 or 1
12. About: 0 or 1

The unit of measurement is a user. Let’s take a look at the sample distribution of our unit of measurement by categories:

|  |  |
| --- | --- |
| Zonal distribution | |
| Division/Zone | Number of users |
| Eastern | 10 |
| Central | 9 |
| Western | 12 |
| Northern | 8 |
| Southern | 11 |

|  |  |  |
| --- | --- | --- |
| Gender distribution | | |
| Male | | Female |
| 25 | 25 | |

As can be seen from the above data, we have a pretty even spread amongst all the categories i.e. by zone and by gender. The mean of zonal category comes out to be 10. The mean of gender category comes out to be 25 which is exactly equal to the number of samples in each of the Gender category. This would help us minimize any sampling bias and unravel clear patterns in the data. Also, 88% of the users in this data belong to the age bracket of 26-30.

Based on parameters, we could then calculate the differences between the parameters of the same data point viz. friend and public domain. To start with an example, ‘Current city’ was shared by 46 users on a friend’s domain and 34 users on the public domain. Following table presents information on the number of users who chose not to share their current city:

|  |  |  |
| --- | --- | --- |
| Users who kept **location** information hidden only on public domain (by zone) | | |
| Division/Zone | Current City (Number of users) | Hometown (Number of users) |
| Eastern | 3 | 3 |
| Central | 2 | 3 |
| Western | 3 | 2 |
| Northern | 2 | 1 |
| Southern | 2 | 2 |

|  |  |  |  |
| --- | --- | --- | --- |
| Users who kept **location** information hidden only on public domain (by gender) | | | |
| **Current city** | | **Hometown** | |
| Male | Female | Male | Female |
| 5 | 7 | 5 | 6 |

Here the differences between the zonal categories don’t look that significant taking into account the fact that we have a small sample size and sampling bias could have big effects. But between males and females, females might be slightly more cautious when it comes to sharing their location information. However, these differences could also be attributed to a sampling bias. Whatever may be the case, the big picture remains that users are comfortable sharing their location information.

A total of 42 users shared their ‘Work’ information on a friend’s domain and 30 users shared it on a public domain. The break-up of this information by gender is given below:

|  |  |  |  |
| --- | --- | --- | --- |
| Users who kept **work** information **hidden** | | | |
| Friend’s domain | | Public domain | |
| Male | Female | Male | Female |
| 4 | 4 | 8 | 12 |

So, the female users are more inclined as compared to males towards tweaking their privacy settings in such a way that they don’t divulge much information about their work-place. Another important thing to note here is that users are slightly savvier when it comes to tweaking their privacy settings as the number of users not sharing their Work information more than doubled between the two categories viz. ‘friend’s domain’ and ‘public domain’.

Somewhat surprising results that were found in this study is with the trends uncovered related to the sharing of ‘Education’ information.

|  |  |  |  |
| --- | --- | --- | --- |
| Users who kept **education** information **hidden** | | | |
| Friend’s domain | | Public domain | |
| Male | Female | Male | Female |
| 3 | 0 | 7 | 13 |

Not a single female user chose to **hide** their education information with their friends as compared to male users, of whom 3 chose not to. But on a public domain, the number of female users more than doubled who chose to hide their education as compared to males. This shows that female users tend to trust their friends but not other users on the platform. A lot of previous research [5] amongst American online users support this observation, that female users are generally more cautious when it comes to privacy protections.

A total of 3 male users and 1 female user chose to share their **email** address on their friend’s domain, and no user (male or female) chose to share their email address on the public domain. This makes complete sense as an email address, if shared publicly could easily invite trouble such as unsolicited emails and potential hackers taking over users’ accounts. Also sharing this information with friends seems unnecessary because there seems to be no reason why friend need to see this information on Facebook profile when he/she can use Facebook messenger to communicate.

‘Social links’ comprised of information such as URLs to other social networking websites viz. Instagram, Twitter, or blogging websites, or personal websites. A total of 11 male users and 3 female users shared their ‘Social links’ information on a friend’s domain and a total of 2 male users and 0 female users shared their ‘Social links’ information on a public domain. For this parameter (sharing social information), the users did seem to be aware of protecting their privacy from prying eyes.

72% of total users shared their ‘Birthday’ information on a friend’s domain and only 14% shared on public domain.

|  |  |  |  |
| --- | --- | --- | --- |
| Users who shared **birthday** information (by gender) | | | |
| Friend’s domain | | Public domain | |
| Male | Female | Male | Female |
| 17 | 19 | 4 | 3 |

What’s little surprising is that female users had more inclination towards sharing their birthday information as compared to their male counterparts. The breakdown of birthday information by geographical area is given below:

|  |  |  |
| --- | --- | --- |
| Users who shared **birthday** information (by zone) | | |
| Division/Zone | Friend’s domain (Number of users) | Public domain (Number of users) |
| Eastern | 6 | 3 |
| Central | 6 | 1 |
| Western | 10 | 1 |
| Northern | 7 | 0 |
| Southern | 7 | 2 |

Here we can see yet another surprising finding that can be deduced from the about data. It seems like users living in ‘Western’ zone are most comfortable sharing their birthday information with their friends. And, they are cognizant enough to hide the same information in the public domain. Users from other zones are fairly, and almost equally skeptical in terms of sharing this information with friends and non-friends with the exception of eastern users who tend to share birthday information in the public domain with more than the users from other zones.

Next up, if the parameter ‘Gender\_visibility’ was shared with a friend by a particular user, we checked whether ‘Gender\_visibility’ information was also shared with a non-friend.

|  |  |
| --- | --- |
| **Gender visibility** | |
| Friend’s domain | Public domain |
| 92% | 84% |

Almost 92% of the total users (46) shared their Gender information with their friends and 84% of the total users (42) shared their Gender information in the public domain. This is not surprising, because Gender information is easily guessable from a user’s name or profile picture, so hiding that information did not make any logical sense. It was also found that out of those 92% users, and of those only 4 users chose to share this information on a friend domain but **not** on a public domain. Two of those users were male, and the other two were female.

Privacy settings related to Languages and religious views:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Users who shared (by zone) | | | | |
| Division/Zone | Languages (Number of users) | | Religious views (Number of users) | |
|  | Friend’s domain | Public domain | Friend’s domain | Public domain |
| Eastern | 10 | 3 | 3 | 0 |
| Central | 5 | 1 | 5 | 1 |
| Western | 5 | 2 | 4 | 0 |
| Northern | 5 | 0 | 3 | 0 |
| Southern | 4 | 1 | 4 | 0 |

A clear pattern has emerged from the above data. It seems that users from the Eastern zone are 100% inclined to share their information about their known Languages. Whereas users from zones other than Eastern zone are only 50% inclined on sharing information about their known Languages.

Regarding sharing information on Religious views, at least some users from Central zone are probably inclined towards sharing their religious views. It could also point towards a small sampling bias. But the overarching pattern is that no user wanted to share their religious views in the public domain.

Let’s look at the numbers obtained on ‘Relationship’ information:

|  |  |  |  |
| --- | --- | --- | --- |
| Users who shared **relationship** information | | | |
| Friend’s domain | | Public domain | |
| Male | Female | Male | Female |
| 16 | 13 | 5 | 5 |

People, in general, are very open about sharing their relationship status with friends and family. The above results can be corroborated with the results from another research on sharing private information on Facebook [6], which concludes that on average about 63% of users share their relationship status amongst their friends. In our case, this figure comes out to be 58% which comes very close to that figure. So maybe it is the case that prevalent culture no bearing on the tendency to share their relationship status. Users, whether they are male or female, are also equally likely to share their relationship status in the public domain.

An ‘About’ section on Facebook is a space where users can provide a glimpse of their views on the world, or a short description about themselves, or some interesting quote that they feel defines them, or some combination of these matters. Although it may seem to possess trivial importance in terms of privacy concerns.

|  |  |  |  |
| --- | --- | --- | --- |
| Users who shared an **about** section | | | |
| Friend’s domain | | Public domain | |
| Male | Female | Male | Female |
| 10 | 8 | 2 | 3 |

Again, the general trend in the data here is that users seem little concerned about posting their information publicly, and so took care of making the information limited to their friend’s domain with just 10% users not doing so.

**Discussion**

Some of the highlights of this paper are:

1. Facebook users who belong to the Western part of India are more inclined to share their birthdate with their friends.
2. Male users are twice likely to hide their Work information on public domain and female users are thrice likely to hide their Work information on public domain.
3. Female Facebook users were more inclined than male Facebook users towards sharing their Education information with their friends. Simultaneously, female users were cautious as compared to male users when it came to hiding the same information on public domain.
4. Facebook users who belong from the Eastern part of India are more inclined to share their information on known languages.

Although there could be deeper reasons to the trends that were identified in this paper, they won’t be discussed in this paper. Perhaps more research can be done on this front by researchers from fields such as sociology, psychology and other related fields.

**Conclusion**

At this point, we can conclude that most Facebook users in India are sufficiently aware of privacy issues and have the requisite command over manipulating privacy settings to their own advantage. However, it should be noted that the data collected for this study was extremely biased in the sense that, all the Facebook users used for measurements were college-educated and were 26 to 30 years old. Not all Indian users of Facebook meet that criteria and have varying degrees of internet literacy. A subsequent study should be conducted with more number of representative samples, to verify and/or refute the findings in this paper.

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