

Measurement of Digital Security and its Impact on Personal Security I: Role of the Intermediary and the Government

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Abstract: Social media is an integral part of our daily -life and a main source of information as well as communication. Social media intermediaries maintain end-to-end encryption to secure the privacy of users. Our analysis indicates that well-educated users have fear of negative evaluations. Students' awareness on social media intermediarity, is well focused for their academic development. Unfortunately, poor students are not capable to operate social media. Social media videos on Wi-Fi facilities are helpful for conversions within restricted area for outsiders. There is also need of government attention to overcome the linguistic discrimination in administrative redress system.

Keywords: Social media intermediaries, Security of privacy, Social anxiety disorder.

1- Introduction

Social media platforms are used to document memories, learn, and form friendships [1]. Users access social media through web-based apps or custom apps on mobile devices. Social media can enhance and extend human networks [2]. Social media helps the development of online social networks by connecting a user's profile with those of other individuals or groups [3, 4]. Social media can be used to consume, publish, or share news. Social media curates content to encourage users to keep scrolling [5]. Currently, social media platforms implicated the policy of end-to-end encryption (E2EE) for conserving the privacy of their customers.

E2EE is a private communication system for the participation of only communicating users. The E2EE term originally only meant that the communication is never decrypted during its transport from the sender to the receiver. E2EE has been proposed as an additional layer of encryption for **Global System of Mobile Communications (GSM)** [6] or **Terrestrial Trunked Radio (TETRA)** [7]. The meaning of "end-to-end encryption" started to evolve when WhatsApp encrypted a portion of its network, [8] requiring that not only the communication stays encrypted during transport [9].

These technologies are increasing disparities among people. Homeless people who are living in poverty, elderly people, and those living in rural communities may have limited access to the internet; in contrast, urban middle class and upper-class people have easy access to the internet. Another divide is between producers and consumers of internet content [10, 11] which could be a result of educational disparities [12]. These disparities also introduce the massive increase in personal traits.

Personal traits such as sexual orientation, race, religious and political views, personality, or intelligence can be inferred on the basis of a wide variety of digital footprints, such as samples of text, browsing logs, or Facebook likes [13]. Locke believed that the government was responsible for protecting rights of life, liberty, and property so that individuals were guaranteed private spaces to practice personal activities [14]. These personal activities are protected by privacy laws as per the constitution of any Government. Social media intermediaries are also involved in such laws during their service and they do not store any type of data (chat/photo etc.) from their users.

Bailey and Bakos (1997) analyzed a number of case studies and identified four roles of electronic intermediaries including information aggregation, providing trust, facilitating and matching [15]. Due to protection policies of privacy, electronic intermediaries are widely used on various sectors of Governments, organizations and group of individuals.

2- Experimental Data Collection and Measurements

To understand the social spins of teachers and students towards the personal traits and shared information, we selected the data of academia from Kumaun University as per available their own website during April 2024 and various social media groups of students from Rajkiy Mahavidyalay Kanvaghata, Kotdwar. We found that most of them use 'WhatsApp' as social media intimidators.

We shared administrative information among students via their groups, as framed by administration of college. It noticed that approximate 81.87 percentage and 13.38 percentage of students are respective quick respondents and late respondents regarding shared information. A total of 4.73 percentage of the students were not interested in the matter of shared information.

Table 1: Measurement of student interest towards shared information.

S. No.	Group-A (Total Users-30)				Group-B (Total Users-31)				Group-C (Total Users-16)			
	Epoch	Quick Read	Late Read	Not Read	Epoch	Quick Read	Late Read	Not Read	Epoch	Quick Read	Late Read	Not Read
01	10-01-24	27	02	01	01-01-24	19	10	02	10-01-24	12	03	01
02	23-01-24	27	02	01	09-01-24	19	10	02	24-01-24	13	02	01
03	29-01-24	25	04	01	19-01-24	14	16	01	02-02-24	12	03	01
04	02-02-24	27	02	01	27-01-24	26	03	02	17-02-24	12	03	01
05	06-02-24	26	02	02	02-02-24	23	06	02	25-02-24	10	05	01
06	17-02-24	25	02	03	17-02-24	24	04	03	04-03-24	13	01	02
07	29-02-24	21	06	03	25-02-24	25	06	00	18-03-24	13	02	01
08	05-03-24	23	04	03	04-03-24	28	03	00	22-04-24	12	03	01
09	14-03-24	22	05	03	18-03-24	26	05	00	30-04-24	13	02	01
10	24-03-24	22	04	04	24-03-24	30	01	00	11-05-24	13	02	01
11	30-03-24	24	03	03	31-03-24	29	02	00	21-05-24	11	04	01
12	21-04-24	25	02	03	02-04-24	25	06	00	30-05-24	14	01	02
13	24-04-24	28	02	00	21-04-24	31	00	00				
14	30-04-24	27	03	00	29-04-24	31	00	00				
15	04-05-24	28	02	00	01-05-24	21	10	00				
16	11-05-24	26	04	00	11-05-24	27	04	00				

					24							
17	21-05-24	26	02	02	21-05-24	26	05	00				
18	30-05-24	25	03	02	30-05-24	27	03	01				
19	06-06-24	26	01	03	06-06-24	28	01	02				

Above statistics indicated that the most of students are seriously ready to implicated instructions as delivered by their respective teachers. The activity of their action can easily be traced by blue ticks of WhatsApp in our study. This study concluded regarding feeling of students that their privacy can be saved by using social media intermediaries in normal mode and that they have no objection to shared information in favour of their better future. Similarly, we found that 71.62 percentage of faculty members at Kumaun University are users of social media intermediary apps and that the rest are not interested in the use of such apps. The statistics of the social media users are shown in Table 2. We attempted to connect with faculty members of Kumaun University for positive social welfare and shared information was associated with administrative conflict under the propagation of officials at Kumaun University. Our analysis indicated that faculty members are used very high security features (privacy setting, timer etc.) of social media intermediary. Social media intermediaries categorized our shared information as spam. It seems that they are fear negative evaluations from other people and this fear is triggered social anxiety disorder (SAD). It is common for those with social phobia to self-medicate in this fashion, especially if they are undiagnosed, untreated, or both; this can lead to alcohol use disorder, eating disorders or other kinds of substance use disorders. SAD is sometimes referred to as an illness of lost opportunities where "individuals make major life choices to accommodate their illness". [16, 17].

Table 2: Availability statistics of social media among various faculty members at Kumaun University

S. No.	Name of Department	Total Academia	WhatsApp User	User Percentage
01	Agriculture	08	07	87.50
02	Biotechnology	07	05	71.28
03	Botany	08	07	87.50
04	Chemistry	13	04	30.77
05	Commerce	12	10	83.33
06	Computer Science	06	04	66.67

07	Economics	09	08	88.89
08	Education	11	09	81.81
09	English	07	06	85.71
10	Forestry	09	07	77.78
11	Geography	09	04	44.44
12	Geology	07	06	85.71
13	Hindi	05	03	60.00
14	History	05	03	60.00
15	Home Science	03	02	66.67
16	Information Technology	02	01	50.00
17	Journalism and Mass Media	02	01	50.00
18	Law	05	03	60.00
19	Library and Information	01	01	100.00
20	Management Studies	07	06	85.71
21	Mathematics	07	05	71.28
22	Music	04	04	100.00
23	Political Science	07	07	100.00
24	Physical Education	03	02	66.67
25	Physics	11	09	81.81
26	Professional Studies	04	02	50.00
27	Sociology	05	04	80.00
28	Sanskrit	05	04	80.00
29	Statistics	03	02	66.67
30	Technology	16	10	62.50
31	Tourism and Hospitality	03	02	66.67
32	Visual Art	03	01	33.33
33	Yoga	03	03	100.00
34	Zoology	12	07	57.17
Total		222	159	71.62

3. Testing of Security of Privacy

In compliance with privacy and security standards, social media app (for example WhatsApp), allowed users to decide who can add them to groups. If, any user tries to add such users, then his activity comes under the spamming and he will temporary ban as per policy of social media intermediary. We tried to add faculty members of Kumaun University in a group, we found that faculty members of university do not allow unknown

person for adding them in any social group. Our test account was temporarily ban during measurement on date 08.03.2024 and 09.03.2024. WhatsApp also banned his users for bulk messaging. **Bulk messaging** is the dissemination of large numbers of SMS messages. For avoiding bulk messaging, we sent a social information one by one via testing account. If, many responding users are quickly blocking a single user, then activity of user also came under the category of spamming as per policy and norms of company. Targeted members were already informed by email under the intimation of officials of the University. Since, our testing account faced temporary banning on 12.03.2024 and 13.03.2024, therefore, it seems that they were directed to ban testing account of our group. Our testing account was permanently blocked on date 14.03.2024 by company due to continuous blocking. As per appeal, our testing account was not recovered. During algorithm of text messaging, we virtually reached with 81 members among 159 members. During the first three attempts, we also received 03 response among 63 members and we are incapable the receive any response from 18 members due to permanent ban in the terms of unrecovered chats. The summary of spamming activities is listed in Table 3.

Table 3: Social Media Statistics for spamming.

S. No.	Number of Users	Start Epoch in 24 h format (Date and Time)	Nature of Epoch	Time Duration	Mode of Ban
01	159	08 March 2024, 11:21	Group Making	07 h	Temporary
02	159	09 March 2024, 03:49	Group Making	07 h	Temporary
03	25	12 March 2024, 16:17	Text Messaging	09 h	Temporary
04	18	13 March 2024, 03:32	Text Messaging	09 h	Temporary
05	20	13 March 2024, 18:02	Text Messaging	12 h	Temporary
06	18	14 March 2024, 06:05	Text Messaging	04 Month	Permanent

4. The role of the Grievance Appellate Committee (G.A.C.)

The Government has come out with the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 to regulate the activities of Social Media Platforms. The details are as follows.

(i). The rules empower the users of Intermediaries and make the social media platforms accountable for users' safety. These rules also provide guidelines to be followed by all intermediaries as well as the additional due diligence to be followed by Significant Social Media Intermediaries (SSMIs).

(ii). It has been prescribed for due diligence by an Intermediary

(iii). The Rules, inter-alia, provide for the removal of any unlawful content.

(iv). A robust grievance redressal mechanism has been setup in view of the above, the matter may please be taken up with the grievance officer of the respective Social Media platform.

Any person aggrieved by a decision of the Grievance Officer may prefer an appeal to GAC within 30 days of receipt of communication from the Grievance Officer. The Grievance Appellate Committee (GAC) is established under the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 (IT Rule), made under the Information Technology Act, 2000. The GAC deals with the appeals of users (Digital Nagriks) aggrieved by decisions of Grievance Officers of social media intermediaries.

Whereas the information technology (Intermediary guidelines and digital media ethics code) rules, 2021 and its amendments made thereunder empowers the Central Government established Grievance Appellate Committee to issue orders for an intermediary and every order passed shall be complied with by the intermediary concerned and a report to that effect shall be uploaded on its website, if it is satisfied that it is necessary or expedient so to do, in the appeal made by any person aggrieved by a decision of the Grievance officer.

Whereas the Grievance Appellate Committee has examined the appeal bearing appeal no. 1258/2024 against the intermediary WhatsApp and the response provided by the intermediary in this regard for restoring of chats etc., pertaining to the appellant's account on WhatsApp platform.

Whereas the Grievance Appellate Committee in its wisdom and based on the substantial information provided by the appellant and the intermediary, observe that the said account of the appellant is deleted as it is non-existent now. The intermediary has also stated and confirmed that it cannot help restore chats, documents, media files, etc., from deleted accounts. As such, the Committee is satisfied that the relief sought for any appellant is technically not feasible.

However, the Grievance Appellate Committee hereby dismiss the appeal vide its order dated 13/05/2024 for the reasons mentioned above and the relief sought is not granted. After 3 months of above said order, said WhatsApp number was unblocked.

5. Comparative analysis of social media and User Sim

Social media is an excellent tool to share information and documents with confidential and safety way. Social media is based on consumption of Internet and depends only availability of Internet. Since, the Government of India has issued restrictions on the use of outside prepaid SIM cards in Jammu and Kashmir, therefore, it is needful to use a local prepaid SIM card when travelling to Kashmir. For testing the utilization of social media during 10 April-12 April 2024, one member (Gireesh C. Joshi) of our group visit Jammu and

Kashmir. He was not used local sim during his visit and kept switch on his mobile phone. Wi-Fi technology may be used to provide local network and Internet access to devices (i.e. mobile phone) that are within Wi-Fi range of one or more routers that are connected to the Internet. Hotels of Jammu and Kashmir are providing the facility of Wi-Fi networks. Thus, anyone can access the internet facilities in his phone without sim during their stay on hotels. Accounts of social media apps are based on mobile number. Their IDs are similar to real mobile number after user verification. A **mobile Internet device (MID)** is a multimedia capable mobile device providing wireless Internet access. An outsider prepaid SIM cards in Jammu and Kashmir is not useful due to restriction, but their virtual digital copies of Social Apps are well working with available Internet facility.

6. Digital and Physical Security during travel

Closed-circuit television (CCTV), also known as **video surveillance**[18] is the use of closed-circuit television cameras to transmit a signal to a specific place, on a limited set of monitors. Since, access control methods are used to monitor and control traffic through specific access points and areas of the secure facility, they are not capable for monitoring intermediary events between access points. Electronic access control systems provide secure access to buildings or facilities by controlling user transport. These systems include access credentials, access control panels, card readers, door locking hardware, request to exit devices, alarms, access levels and event logging. Security personnel perform many functions: patrolling facilities, administering electronic access control, responding to alarms, and monitoring and analyzing video footage [19]. During the returning Journey with emergency, some luggage from the co-passenger of the GCJ was lost and noticed after completing Journey. The Co-passenger of GCJ requested for needful action. Our team decided to test this event in the term of passenger security. GCJ vide reference number 2024041405095 and 2024041500021 intimated railways regarding the loss of luggage. We found that written reply was given in a different language than of language of complaints. Linguistic ideology is defined as the conception or feeling that how a person speaks a certain language can imply social status [20]. This concept further demonstrates that linguistic discrimination derives from the stereotype and cognition of how certain populations speak the language [21]. Research has shown that countries with assimilation policies result in higher stress [22]. The opportunities of civilians are very limited when the language of communicated information is a different from their understanding. In countries where a variety of languages exist, it is difficult for people to obtain basic social services such as education and health care [23] along with social security and justice. In our experience, the complaint redress system of the Indian railway seems to be fulfilled with linguistic discrimination.

7. Discussion and Results

Social media is based on end-to-end encryption. In view of the applicability of social media, criticisms include platform capabilities, content moderation and reliability, [24] impact on concentration, mental health, [25] content ownership, and the meaning of interactions, and poor cross-platform interoperability, decreases in face-to-face interactions, cyberbullying, sexual predation, particularly of children, and child pornography [26, 27]. We concluded that social anxiety disorder seems to be a trigger among well-educated people. Social media is also available via Wi-Fi facilities within restricted areas. Physical security is a basic requirement for travelers. In this connection, surveillance systems are installed in various places (administrative places, public places, airports, exit and entrance points of railway stations and bus stations etc.). The possibility of surveillance in the instance of the Panopticon meant that a prisoner had no choice but to conform to the prison's rules [28]. Owing to the enormous infrastructure of India, many places are uncovered by surveillance systems and existing surveillances of India are also manually operated. The availability of electricity and other technical issues are also affected the quality of surveillance. Our analysis indicated that the complaint redress system of Indian railway seems to be fulfilled with linguistic discrimination. Government attention is required for overcoming these issues.

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