

Sanctity of Digital Privacy and Personal Data during COVID-19: Are Youths Enough Digitally Literate to Deal with it?

Swagata Ghosh

p20200461@pilani.bits-pilani.ac.in

<https://orcid.org/0000-0003-4796-0482>

Birla Institute of Technology and Science–Pilani, Pilani, India

Gajendra Singh Chauhan

gsc@pilani.bits-pilani.ac.in

<https://orcid.org/0000-0003-3259-9532>

Birla Institute of Technology and Science–Pilani, Pilani, India

Renu Kotwal

p20200467@pilani.bits-pilani.ac.in

<https://orcid.org/0000-0002-7913-329X>

Birla Institute of Technology and Science–Pilani, Pilani, India

Abstract

The COVID-19 pandemic has fast-tracked the development of digital applications and inspired everyone to adapt to the technologies to curb the spread of outbreak. As this crisis intensifies, the rapid usage of digital devices and apps has echoed the serious concerns about civil liberties, privacy, and data protection. Considering the situation, this research aimed to explore the internet using habits of the youths of West Bengal, a state in eastern India, during COVID-19. Besides, the paper explored their experiences of using various digital applications, the fundamental digital literacy and how safely they protect data from breaches. Thus, the paper presents the results by conducting an online survey among the youths in West Bengal. The result, from 215 participants, highlighted that the increased use of these digital applications has not matched the demand for digital privacy literacy among the young generation of the state. While this pandemic has raised their concerns over digital privacy and data protection, yet they do not undertake any strong protection mechanisms to safeguard them digitally. Besides, this paper suggests suitable plans to raise awareness among this generation and form a healthy digital citizenship with a proper regulatory framework as it is the need of the hour.

Keywords

COVID-19, Digital Privacy, Personal Data Protection, Media Literacy, Youths, West Bengal.

I. Introduction

COVID 19, the global pandemic, has made a profound difference in our lives. The World Health Organization suggested avoiding crowded areas and encouraging close contact in order to stop the spread of the disease during the pandemic. Due to this, people were confined to their houses and were managing all activities from home. From communicating with dear ones to fulfilling job responsibilities and taking classes, the use of internet-based services became obvious for almost everything.

Therefore, due to the constant use and mandatory presence of a digital medium in our daily lives, it becomes important to ensure digital privacy and protect the data we share on the internet. Because on most occasions, we leave our digital footprints on the internet (Setyowati, 2016) by sharing our minute personal details, i.e., IP address, email id, date of birth, name, address, etc., as directed by the applications or websites. Consequently, the internet records all those details and tracks our online behavior through the applications and devices we use (Trninic & Vukelic, 2021). From the keywords we typed on search engines and the websites we visited, to cookies collecting browser history of the users, to online transaction details- every online activity of ours can now be analyzed to know personal information about ourselves (The Centre for Internet & Society, n.d.). Even the personalized suggestions of information and commercials we see on the internet are based on the algorithm archived on the websites and search engines we visit (Setyowati, 2016). That personalized information can create ideological isolation that confirms peoples' pre-existing beliefs and rejects opposing perspectives.

Along with internet surfing, social media plays a crucial role as an essential segment of our life. There were 467.0 million social media users in India as of January 2022 (Kemp, 2022). We often share personal information and our opinion on certain issues on social media sites which are often used to define our identity and are easily accessible to anyone. Yet, the powerful question is how much we are aware of its consequences? Although social media tech giants are taking baby steps, inventing new policies, and assuring end-to-end encryption, the transparency of their policies is somewhat questionable. Furthermore, some video conferencing apps are becoming so essential to have with us that it has become important to question the efficacy of the privacy policies of these applications. It is dubious as to how much we are secure with these apps.

It is not new that consumers are tracked by technologies and platforms whose business model is based upon collating and analyzing the personal data of users (Livingstone, 2018). However, the rapid emergence and growing reliance on technologies, as a result of COVID-19, exacerbated the protection of digital privacy globally in terms of youths who use a significant number of mobile communication devices (Acker & Bowler, 2018). Recently the Indian Government has introduced new Information Technology (IT) rules (Bhattacharya, 2021) to protect the sovereignty and integrity of India. As per the rules, social media tech giants need to track the originator of messages (Subramaniam, 2021). So, the crux is we ought to be more alarmed today about our internet activity.

The youth who are referred to as 'digital natives' (Halton, 2021) view social network engagement as an indispensable part of their life. For them, digital surroundings are equally important as physical (Agosto et al., 2012). So, the greater use of technology among this generation demands greater digital literacy to protect personal data and secure digital privacy. Recently National Education Policy (NEP) 2020 has emphasized on digital literacy education as one of the critical life skills (Ministry of Human Resource Development, 2020, p. 51). But there is a dearth of research in India about the level of digital literacy among youths. There are studies that represent youths' digital literacy levels in western countries, but there is underrepresentation in India. Hence the study focuses on the young adults of West Bengal (WB), a state between the Himalayas and the Bay of Bengal in eastern India.

According to the national youth policy, youths are defined within the age group of 15-29 (Youthpolicy, 2014). But this research focuses on the age group of 18- 29 years, excluding the minors. As they reach a sensible age group, it is essential to research about this age group to study their digital literacy education level regarding privacy and data protection to sensitize them about safe internet practices and apt social media behaviors.

The paper has explored youths' internet consumption habits and experiences while using digital applications during the pandemic when using the internet became mandatory. The study has also discovered the digital literacy level of youths who are prime internet users. It will give an overview to the education administrator of the state about the digital literacy level of youths as NEP (2020) has emphasized to include digital literacy skill in their curricula. Furthermore, based on the results, this study recommends how to achieve a better digitally secured society for youth. Moreover, this paper makes the young generation aware of the consequences of their online activities and warns them to be cautious about their online privacy.

II. Literature Review

a. Digital privacy and data protection

The concept of digital privacy has been a prevalent matter of concern for the authors since the time when data has not become "the new oil" for public, private, and third-sector organizations (Livingstone, 2018). In the mid-1980s, Mason (1986) pointed out some major problems which could grow with this Information Age. His concerns were about privacy, accuracy, property, and accessibility (PAPA) of our information because of the rapid use and advancement of Information Technology (Bélangier & Crossler, 1967). If we look at today's data-driven market and higher demand for mobile communication devices, the issue of digital privacy has become a global issue, as pointed out by Mason. Clarke (1999) has identified four dimensions of privacy - privacy of a person, personal behavior privacy, personal communication privacy, and personal data privacy. So, in the broader context, it applies that infringement of digital privacy includes intrusions into the private or personal space of someone, and access to personal information without consent (Trninic & Vukelic, 2021).

The definition of personal data is not static. The process of data to be produced, collected, combined, shared, stored, and analyzed on the internet is constantly changing and is redefining personal data every minute (The Centre for Internet & Society, n.d.). Every single invention of technology also brings a new way to look at the concept of privacy and think about it, from balancing the need to securing peoples' data. In the context of digital privacy, Setyowati (2016) argues that we also should be cautious in sharing others' personal information on social media and other online platforms. Sometimes, we share information cautiously by creating a profile and posting comments on social media, but in some cases, it is also done passively while browsing, texting, or online transacting. So, the archived online information of our online activities altogether encompasses our digital identity, which is also called digital fingerprints or digital tattoos. Our info-sphere is continuously shaped and affected by our digital tattoo, which is made by our online activity. Even the personalized suggestions of information and commercials we see on the internet are based on the algorithm archived on the websites and search engines we visit (Setyowati, 2016). Therefore, it becomes important to know the privacy policies of every application and utilize its settings to the fullest to secure online activity to become an informed consumer.

b. COVID- 19 and need for digital privacy and data protection

During COVID- 19, digital technologies play as a tool of social connectedness, enabling us to cope with lockdown loneliness (Shah et al., 2020). From the medical field to combat COVID- 19 to manage work, education, and daily activities – in every aspect, digital technologies have brought a recordable change in our lives. In every field, digital technologies like artificial intelligence (AI) and the video-based communication platform play a massive role during the COVID-19 pandemic (Vargo et al., 2020). Although it became the one-step solution in fighting against the situation caused by the pandemic, these technologies have posed various privacy questions. During the Pandemic time, approx. 49% within the age group of 15-65 used the internet, which is comparatively higher than previous years (Khanna, 2021). Moreover, during COVID-19, citizens' personal data became important in forming important policies and some applications like the Aarogya Satu App, a "contact tracing, syndromic mapping and self-assessment" mobile application developed by Indian Government during COVID- 19 for the public interest. As a result, our every minute personal information and data are in danger. Therefore, it is crucial to explore whether the pandemic has raised youths' concerns about digital privacy or not. Besides, it is also essential to observe whether they experienced any digital privacy violations during the pandemic or if they felt safe sharing their details sitting in their personal space. Additionally, it is to be seen that whether their personal life and professional life were jeopardized due to the virtual world, or they were able to keep a balance during the pandemic? These days, people are returning to their normal offline life, but technologies still play a prominent role in daily life. According to a survey, 82% of employers will allow employees to work remotely, and 47% of employers say that they allow employees to work remotely all the time (Arlington, 2020). Thus, even after the epidemic, our reliance on technology would not change.

c. Youth, digital privacy and data protection

Although the young generation sees the digital world as an important part of their lives, the greater use of the internet and lack of legitimate protection create privacy risks for the youths growing up in this digital age (Smith & Shade, 2018). The data youths share on the internet can easily be tracked, and this surveillance can serve personalized information. And this customized information can create an 'eco-chamber effect,' an online environment where repetitive exposure to the same content reinforces their own beliefs (Cerf, 2016). Besides, personalization can also create a 'filter bubble,' which is an idea that digital media algorithms and recommendation engines make ideological isolation by suggesting only the information which suits the user's profile (Pariser, 2011). Moreover, sharing information on social media platforms can bring negative impacts like infringement of online privacy, cyberbullying, phishing, shaming and hatred, identity theft, and different cybercrimes. Thus, in this age group, when digital media usage is rapid, knowledge about online privacy, repercussions of their actions, and how the internet functions are significant. Present research works focus on adults' perspectives on youth's online behavior and their safety on social media. Some studies have encapsulated adult's perspectives on the appropriate online activities of youths. There is a lacuna of research about youths' own concerns and experiences, what youth are doing online, and why. And for this reason, technopanics have emerged in society, and adults prevent youths from using media because of its negative impact (Wisniewski, 2018). But ignorance towards the new media can drag this young generation behind (Santar et al., 2021). Hence, it is vital to capture youths' own words about their activities. Several research studies have been done on youths of western countries. Older American teens are concerned about online privacy as they feel uncomfortable with unintended audiences seeing their personal information and sharing personal information with friends. Still, they are less concerned about their safety and do not employ protective measures (Agosto & Abbas, 2016). However, there is a knowledge gap regarding the perspectives of Indian youths towards digital

privacy. India has one of the youngest populations globally and also ranks second in terms of internet usage (Basuroy, 2022 ; Ministry of External Affairs, 2021). Thus, there is a strong need for research exploring youths' digital privacy knowledge, concern, and experiences to fill the gap.

d. Youths and virtue of digital literacy

The proliferation of digital media has randomized productive interaction, increased learning opportunities and employment, and amplified opportunities for expressions of identity, intimacy, and sociability. Still, it also brought risks related to privacy and safety (Adorjan & Ricciardelli, 2018). Since technology has become the one-stop solution, youths are moving with it very quickly. The young population (aged between 18 to 24) are active users of social media sites (Pragati, 2021). This is the age when people reach an important life stage where they become more independent and autonomous. Buckingham (2001) says about the youth that "both in public debate and in research, children are frequently seen to be most vulnerable to media influence; yet they are also seen to possess a confidence and expertise in their relations with media that are not available to the majority of adults. They are defined both as innocents in need of protection, and as a competent, media-wise generation" (p. 4). As this age group just enters into adulthood, they are not quite old enough to use the internet on their own (Wisniewski et al., 2022). One of the main reasons for that could be the lack of a proper education system in India to teach them how to drive in the digital media and how to perform in this digital world informedly (Jones et al., 2018). Digital literacy skill should be inculcated among youths to perform in this digital world informedly and take the best out of it. Therefore, it is necessary to study about the present digital literacy level of youths.

e. Digital literacy education in India

Nissenbaum (2004) described digital privacy as contextual integrity, which indicates that every person can share their personal information depending on the context, situation, and appropriateness of sharing. Moreover, people can decide to whom they will share their information and to what extent. Privacy violation will occur if the flow of personal information crosses the domain of sharing or if one shares his information outside of the context where it may not be needed. In such a manner, Nissenbaum pointed out the importance of digital literacy to stop the violation of digital privacy.

The definition of Digital literacy is "the skills associated with using technology to enable users to find, evaluate, organize, create, and communicate information; and developing digital citizenship and the responsible use of technology" ("Museum and Library Services Act," 2010, p. 3595). Digital literacy enables youths to participate in digital media in wise, safe, and ethical ways. Therefore, digital literacy incorporates issues of privacy, safety, and ethical use of technology (Pangrazio et al., 2020). And to bring digital literacy into society, educating people about the subject is very important. Since the early 1980s, media literacy has been an essential topic for learning in India; however, it was not added to the school curriculum. The National Curriculum Framework did not encourage schools to bring media in classrooms until 2010 (Kumar, 2019; National Council of Educational Research and Training, 2005, p. 140). Since that time to discuss media, several media clubs have developed in schools, but the practice of it falls short of expectations. Some private and public colleges in India provide mass communication courses in higher education, but these courses are based on job skills (Jayachandran, 2018). Although in the NEP (2020), digital literacy is mentioned as an essential and critical life skill for students (Ministry of Human Resource Development, 2020, p. 51), few initiatives were taken for digital literacy like 'Cybermohalla' and 'Compughar' projects. Additionally, a few schemes have been implemented by the Ministry of Electronics & Information Technology (MeitY) like 'Digital Saksharta

Abhiyan', and 'Pradhan Mantri Gramin Digital Saksharta Abhiyan' (Ministry of Electronics & Information Technology, 2022). Under the 'Digital India' Campaign, the government started some initiatives which aim to empower the citizens by making them capable of accessing digital interfaces (Ministry of Electronics & Information Technology, n.d.). But, initiatives to teach how to consume, interpret and analyze the information received from media are still untouched. Thus, digital literacy needs to be included in mainstream education in India. So presently, it is vital to research on digital media literacy among youths. It can pave the way to infer their understanding of digital privacy, its importance, and the mechanisms they apply to protect their privacy and data online. It also gives a broader view to policymakers and education administrators.

f. Data protection laws in India

Besides education, India needs strong legislation to protect the digital privacy and personal data of Indian Citizens because of the present condition and rising importance of data protection (Katarki et al., 2020). Right to privacy, including both online and offline sphere, is our fundamental right protected by article 21- fundamental freedom to life and liberty and article 19(1) (a) - right to free speech and expression of our Indian Constitution. At present, there are no such data protection acts in India that can protect and safeguard citizens' digital privacy and personal data. Currently, the only existing act in India is the Information Technology Act (ITA) 2000, which has some comprehensive legal provisions that can safeguard people's digital privacy. But still, some corrections had been indicated by the European Union in this act- these rules are only applicable to corporate bodies, government and an individual who is not engaged in a commercial or professional activity would be exempted from these rules ("Data secure status for India," 2013).

To make a more stringent law in data protection, the Ministry of Electronics and Information Technology (MeitY) introduced the Personal Data Protection Bill 2019 in Lok Sabha, but the government withdrew it. Besides to regulate access, quality, and use of data, the Ministry of Electronics and Information Technology has issued the draft National Data Governance Framework Policy (May 2022), which is still under finalization (Ministry of Electronics & Information Technology, 2022). In West Bengal, no other laws and acts have been introduced at the state level. So, considering this situation, citizens' critical thinking and digital literacy are very much needed to handle every challenge.

In a world where the effectiveness of consent, concepts like pseudonymization and anonymization are debatable (Fahey & Hino, 2020), and the digital safety of employees and students is in question because of the continuous monitoring (Faraj et al., 2021; Kashyap, 2021), there is a crucial need for awareness about digital technologies and its privacy policies among youths due to their excessive use of this medium. There is also a scarcity of studies among this age group about digital literacy, so there is an urgent need to do research that can provide a better understanding of the experiences, concerns, and digital literacy of Indian youths. Nevertheless, digital privacy issues among youth are underrepresented in the Indian context, so the authors have chosen West Bengal, an Indian state, to uncover the scenario. Moreover, this research can give an idea to policymakers to frame adequate policies and suggests how to raise awareness among young internet users. Thus, this paper explores the internet using habits of youths during the COVID-19 pandemic and youths' perspectives and experiences about the digital technologies they use, like to what extent the digital technologies that they use are safe in containing their data and protecting their privacy. Further, this study examines their digital literacy level by exploring their concern about digital privacy and the activities they generally undertake to protect their data from any data breach.

III. Methodology

a. Operational definition of digital literacy

There is a broad range of definitions of digital literacy from various disciplines. This research defines digital literacy as the set of knowledge on how to protect the personal data we share on the internet and secure digital privacy.

b. Research design

The present descriptive study was conducted on youths of West Bengal, India. A quantitative research approach was followed. Data were collected through a Google Form-based online survey. The study was conducted on the youths (age group: 18-29) of the state. The research applied to students as well as working professionals of private companies. An online questionnaire survey was designed for the research to give a detailed account of the objectives of this study. The survey was conducted using some dependent variables, i.e., internet using habits during the pandemic, digital technology, its privacy and safety, and digital literacy of youths. Internet using habits are measured by two components, spending hours using the internet and the purpose for which it is used the most during COVID- 19. The components which are studied under the variable 'digital technology and its privacy and safety' are the most used applications among youths amid pandemic, their views (in terms of safety, comfort, intrusion into personal space, and serving personalized information) regarding the digital applications, and also their experiences while using the applications. Digital Literacy is measured by their knowledge and concern about digital privacy, their awareness about basic privacy settings, and the protective mechanism they use to protect data and digital privacy on the internet and social media.

The main aim of this study was to inquire about the internet using habits and experiences of youths of West Bengal during the pandemic and also to explore their digital literacy level. The initial questions were about demographic details (i.e., age, sex, occupation), followed by one section based on the internet using habits of youths amid pandemic; next section was based on youths' perspectives and experiences about digital technologies followed by the last section about digital literacy. The ultimate objective of the survey design was to get sufficient and precise responses with relevant questions that could justify the very intent of the research.

c. Sample size and method

The research was conducted via online mode in West Bengal. The responses were collected during the summer of 2021, when the country witnessed an unprecedented lockdown scenario. Inclusive of both students and working professionals, a total of 215 responses, out of which 175 were students including research scholars, 27 were working professionals, and the rest were from the respondents who chose the option 'other', were recorded. The snowball technique was used to contact the respondents because of the countrywide lockdown. The online questionnaire survey was sent via email to some employees of private companies and asked to send it to their colleagues and friends. To collect students' responses, the questionnaire was sent via email to a college in West Bengal and asked to spread. The questionnaire was prepared in Google Form with a cover letter mentioning the purpose of the survey. The form has been restricted to multiple entries from an individual account.

d. Demographic data

The total respondents of the survey are 215 youths, of whom most are female (52.1%), and male is 47.9%. Most of them are students (81.4%), and working professionals are 13%. Most of the respondents belong to the 21-23 age group (Table 1).

Age group	18-20	21-23	24-26	27-29
Number	63	91	47	14
Percentage	29.4%	42.3%	21.8%	6.6%

Table 1. Age structure of respondents

IV. Findings

a. Internet using habits during the pandemic

Spending hours using the internet

According to the survey, 32.1% youths of total respondents spent time using the internet during the pandemic for 5-7 hours a day, 27% said that they used the internet for 8-10 hours a day, 11% said they used it for more than 10 hours, and 2.8% of respondents have said that they used it for one hour or less than one hour in a day. However, in response to the question of the internet using habits before the pandemic, 47% of respondents choose 2-4 hours a day, 27% choose 5-7 hours a day, and 8.4% choose 8-10 hours a day, 5.6%- 10-12 hours a day, 4.7%- 10 hours and 7.4% spend 0-1 hour a day. So clearly, indulgence in the virtual world has significantly increased during the pandemic (Figure 1).

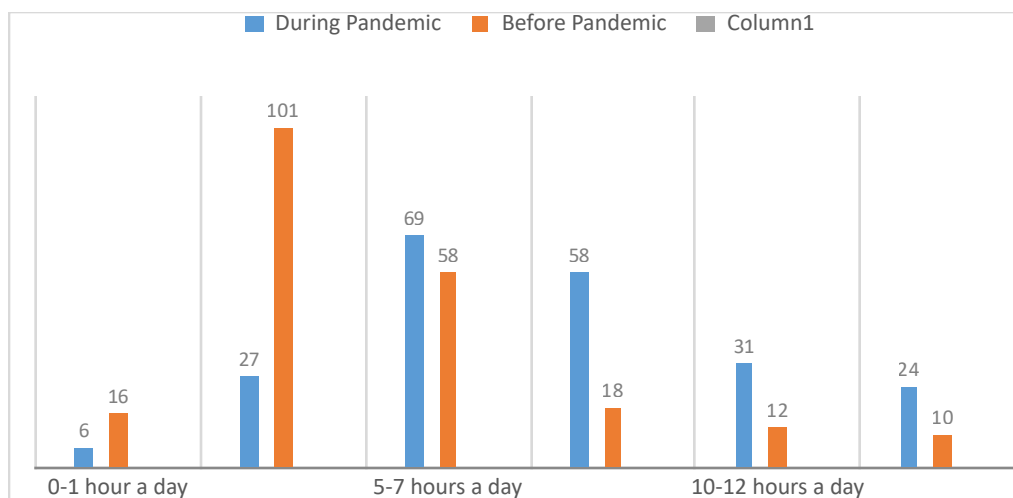


Figure 1. Comparison of Internet Using Time during and before the Pandemic

Purpose of the internet usage during the pandemic

The highest percentage of respondents, 73.5%, used the internet mostly for official work or attending online classes, followed by entertainment activities (watching web series, movies, playing games, accessing social media sites) -72.1%, then for searching and surfing (62.8%), online shopping (50.2%), reading news online (45.1%), then to connect with dear ones (43.3%). 19.5% used the internet for other essential services like medical consultation, financial services, etc., and 19.1% used it for creating and sharing their own content. Youths' internet habit has changed during the pandemic, which is supported by a maximum of respondents-85.1% of respondents think their internet habit has changed due to the pandemic. Moreover, 83.7% think they have become more dependent on technologies because of this pandemic. Besides, 67.8% of them said they want to switch back to offline mode once the pandemic is over, whereas 32.2% said they are comfortable with online mode.

b. Digital technologies, its privacy and safety

Media Apps mostly used, as chosen by the respondents, are as follows in order: WhatsApp (71.6%) followed by YouTube (61.4%), Google Meet (59.5%), Facebook (49.8%), Instagram (47.9%), Zoom (45.6%), Messenger (20%), Google Duo (13%), Twitter (9.8%) followed by Over-the-top (OTT) platforms like Netflix (25.1%), Amazon Prime (20.9%), Zee 5 (7.9%) [Options were given as per the popularity of the applications in India] (Figure 2).

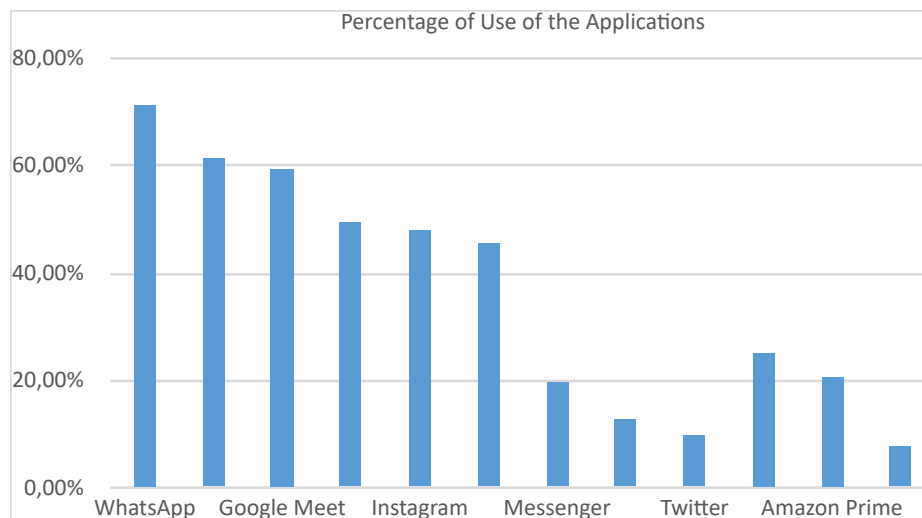


Figure 2. The Internet Applications which Youths Use the Most

In addition, 41.9% think that the applications they use in their daily lives are safe in keeping their personal information, 24.7% have said these are not safe, and 33.5% have said they did not think about it ever while using these applications. Moreover, 37.2% have said that video conferencing applications have intruded into their personal space, and they do not feel comfortable.

In addition, 65.1% of examinees felt their personal space had been compromised because of this virtual environment. So, they ought to limit their usage of these applications according to their needs and balance and utilize their time smartly. Maximum respondents (72.6%) have said they encountered personalized content on the internet according to their browsing activity, but 36.2% do not like this approach.

17.7% of respondents have experienced a different kind of violation of digital privacy, and the rest have never experienced any kind of digital privacy violation (Table 2).

Any of these ever happened to you in this pandemic	Frequency	Percentage
My profile or account has been hacked	10	4.7%
My personal details have been used without my permission	9	4.2%
My video and photograph have been used without my permission	8	3.7%
Google has recorded all my details even after clearing history	18	8.4%
Someone has made a fake profile of mine in social media	12	5.6%
My personal data got leaked in the time working and learning from home	2	0.9%
My video call has been hacked during class or work	1	0.5%
I was monitored by my employer without my consent	2	0.9%
I have been monitored by my teacher without my consent	1	0.5%
Online fraud case	2	0.9%
I have never experienced any kind of digital privacy violation	177	82.3%

Table 2. *Youths' Experience on Digital Privacy Violation*

c. Digital privacy literacy

62.3% of respondents have said that they know about digital privacy or privacy on the internet, 25.6% have said they heard this term but do not know what it is, and 12.1 % have said they do not know about this at all and never heard these things. So, 37.7% of respondents do not know about digital privacy. Whereas 73.5% of respondents said that it is important to save their data and protect their privacy digitally during this challenging time, 17.7% of respondents did not think about it, and 8.8% think there is no need for that. In addition, 82.3% of respondents are aware of the consequences of leaving personal information on the internet.

Youths' knowledge about privacy settings

74% of examinees know about privacy settings on the internet and social media, 59.1% know about the incognito mode, 43.7% know what internet cookies are, and 54% know about the end-to-end encryption. Besides, how to clear history on the internet is known by 74.9% of respondents. So, they mostly know the basic privacy settings on the internet and social media, excluding the concept of internet cookies (Table 3).

Basic privacy settings	Frequency	Percentage
What privacy settings are (In internet and social media)	159	74.0%
What is incognito mode	127	59.1%
Some websites give option to disable cookie settings on their site	102	47.4%
What is end to end encryption	116	54.0%
How to update browser plugin	60	27.9%
What internet cookies are	94	43.7%
How to clear history in internet	161	74.9%

Table 3. Youths' knowledge about Basic Privacy Settings

Youths' measures for protecting the privacy and personal data

The records are as follows- 62.3% of respondents read terms and conditions before installing an application, 42.3% clear their browsing history from a website every time they browse, 33.5% use antivirus software on their devices, 53% do not accept all the cookies of every site they visit, 44.7% use google privacy settings, 40% do not use same username and password for every account, and 9.3% do not do anything to protect their privacy (Table 4). So, overall, less than 50% of Youths use any robust protection mechanisms on the internet.

Protective mechanisms on the internet	Frequency	Percentage
I read the settings every time I install an application	134	62.3%
I clear my browsing history from a website every time I browse	91	42.3%
I use antivirus software on the devices	72	33.5%
I don't accept all the cookies of every site I visit	114	53.0%
I always use google privacy settings	96	44.7%
I always enable Google's do not track option	53	24.7%
I don't use same username and password for every account	86	40.0%
I make my background blur when I do official video calls	24	11.2%
Other steps	20	9.3%
I don't do anything to protect my privacy	20	9.3%

Table 4. The Measures Youths Undertake to Protect Privacy and Personal Data over the Internet

76.7% use strong passwords in social media, 40.5% lock their profile, 53% use social media privacy settings, 53% do not use the same username and password for every account, 41.4% do not use the same username and password for every account, 58.6% respondents do not share personal information where it's not needed, 6.5% of them do not undertake any protective mechanisms in social media. So comparatively, most youths use some basic protection mechanisms in social media (Table 5).

Protective mechanisms on the social media	Frequency	Percentage
I make a strong password for my social media accounts	165	76.7%
I always lock my profile in social media	87	40.5%
I use social media privacy settings	114	53.0%
I don't accept friend request from unknown person	114	53.0%
I don't send friend request to unknown person	114	53.0%
I don't use same username and password for every account	89	41.4%
I don't share personal information where it's not needed	126	58.6%
I don't have any social media accounts	3	1.4%
Other Steps	14	6.5%
I don't do anything to protect my privacy	14	6.5%

Table 5. *The Measures Youths Undertake to Protect Privacy and Personal Data over the Social Media*

V. Discussion

The authors estimated and deduced from existing research that the COVID- 19 has made a profound change in everyone's life, especially in youths' lives. The usage patterns of young people on the internet during the pandemic was the first study question. COVID- 19 has made the internet an integral part of West Bengal youths' day-to-day activities. The result of the survey states that the youths of the state have used the internet mostly for accomplishing their daily activities during the pandemic. A large number of youths in WB used to engage on the internet approximately 2-4 hours a day which had increased to 5-7 hours a day due to the pandemic. Not only has their daily internet using schedule changed, but the purpose of using it has altered. The activities which they used to do physically had shifted into the digital environment multi-fold; one of the main reasons could be that we all were stuck in our homes due to the sporadic lockdowns and physical distancing norms. It sustained the argument of Vargo et al., (2020) that digital technologies play a massive role during the pandemic. The study states that youth used the internet to carry out their official duties and responsibilities and attend classes the most. Apart from this, they mostly used the internet for entertainment purposes (watching web series, movies, playing games, accessing social media sites, etc.), searching and surfing, online shopping, connecting with dear ones who are far away, and reading news online more than before. Since more than 80% of respondents agreed with the above findings, it is evident that this generation is currently becoming more dependent on digital

technologies. They said that they feel a dependency on digital technologies in their everyday lives. Where youths' internet habit has changed due to the pandemic, it poses a question of what they prefer between the online and offline modes when things are returning to normalcy. The result of the survey depicts that 67.8% of respondents (out of the 85.1% respondents, who think their everyday internet using habit and pattern has changed) want to switch back to the offline mode after the pandemic.

The second aim of the research was to explore their concerns about and experiences with the technologies they use. The most widely used digital applications of the youths of West Bengal are WhatsApp, YouTube, Google Meet, Facebook, Instagram, Zoom, Messenger, Google Duo, Twitter, followed by OTT platforms like Netflix, Amazon Prime, and Zee 5 as per the order of their preferences. Considering the business models of these digital tech giants and big OTT platforms, it is quite debatable that to what extent users' personal information, communication, and privacy are secured. Proliferation of digital media and continuous monitoring by tech giants are the major concerns about digital safety and privacy (Adorjan & Ricciardelli, 2018; Faraj et al., 2021; Kashyap, 2021). Although the young generation (41.9%) thinks that digital applications are safe in containing their personal data, 72.6% of respondents said they encounter personalized content on the internet, which is created by tracking the search history and data they put on the internet. Therefore, the results of this study indicate that there is a lack of critical thinking and digital literacy in most of the respondents. According to the results, the internet time has increased, which eventually would increase the share of personal data as directed by these applications. It will also increase the chances of data manipulation, which is a violation of digital privacy. So, at this stage, there is a need for a critical analysis of the business model of these applications. Some youths (37.2%) felt uncomfortable whilst using video conferencing apps sitting in their personal place where any of their personal information can be placed. Most of them also think that their personal space has been compromised because of this virtual environment during COVID-19. Thus, even after the epidemic, our reliance on technology would not change. These findings clearly prove that there is a need for a proper balance between the virtual and real world whenever the virtual world becomes a compulsion to fight any crisis. These digital technologies indeed help the 'digital natives' to cope with their loneliness, but also there is a need for personal space away from the virtual world. As Arlington (2020) reports that at the time of normalcy, employers will allow employees to work remotely. In such case, the present study suggests that there should be a proper balance of work and personal life and the flexibility in terms of working from home or returning to office, in a secured manner. It will help this generation to have a focused, productive mind with full potential and live the fullest without interruption. However, one of the interesting findings is that more than 70% of respondents think it is now important to protect their data and privacy digitally, as some respondents have experienced a different kind of digital privacy violation during the pandemic. So, it shows that somehow this pandemic has raised concern among the youths of WB about privacy on the internet.

The third research question was to examine their digital literacy level. Approximately more than 50% of respondents know some basic internet privacy policies and settings (incognito mode, what end-to-end encryption is, how to clear history on the internet). But approximately less than 50% of respondents do not know about internet cookies and how to disable these cookie settings, which indicate that their browsing activity and personal information are in danger. Some websites can get to know about our very confidential information and passwords from these internet cookies. So, there is a strong need for digital literacy education among this age group. Adding to that, less than 50% of respondents do not use strong and basic protection mechanisms to ensure their privacy on the internet, i.e., clearing browsing history every time they browse, using antivirus software, not accepting cookies on every site, using google privacy settings, enabling Google's do not track option, not using the same username and password for every account, etc. Besides, 9.3% of the respondents

do not do anything at all to protect their privacy and personal information. This data depicts that most of the youngsters are not concerned about their online safety which is also aligned with the findings of Agosto & Abbas (2016) on American teens. One of the main reasons for that could be the lack of a proper education system in India which Jones et al. (2018) also emphasized. Comparatively, for social media, they are a bit more cautious about their privacy and personal data as more than 50% of respondents protect their privacy and personal data in social media in various ways, i.e., making a strong password for social media accounts, using social media privacy settings, not accepting a friend request from an unknown person, not sending a friend request to an unknown person, and not sharing personal information where it is not needed.

Finally, the authors have identified and discussed a few crucial points. Although the majority of respondents (82.3%) claim to be aware of the consequences of disclosing personal information online and the significance of protecting online privacy, the study reveals that most respondents lack experience protecting their data and privacy online. 37.7% of respondents do not know about the concept of digital privacy literacy, as it has never been taught in mainstream education in India. If it can be seen in the broader context, they are not cautious about their data protection as much as this generation is expected to be. The findings reveal that they know about some basic privacy settings, but they do not use them every time in their internet usage. For example, most of the respondents know how to clear browsing history (74.9%) but still do not use it in their everyday life (42.3%). One interesting fact is that, comparatively, they are more cautious about their privacy on social media. Still, they are unaware of their protection (or not having protection) from other internet data breaches. So, the results reveal that there is a need for awareness and media education for the young generation to meet the demands of the complex media environment, which was also emphasised by Jones et al. (2018).

VI. Conclusion

For the simple reason that overusing a media can be harmful to us and underusing it can make us fall behind in the world, every media needs a balanced engagement. It stands true with any generation but especially the young generation that is growing up in this digital age. But the question is where and how to draw a line while living in this virtual environment using these technologies? This question eventually leads to its most pressing solution: Digital Literacy.

Findings from this study indicate that the internet using habits of West Bengal youths had significantly transformed during the pandemic. In addition, they have become more dependent on digital technologies, started paying attention to online data protection and digital privacy in the wake of frequent occurrences of privacy violations amid pandemic. However, the requisite awareness and critical mindset to protect their personal data and privacy from their everyday digital applications are missing, and most of them do not undertake any robust mechanisms to protect their privacy. In this crucial time when the market is driven mostly by data, mass awareness about digital privacy is needed among this age group to decide where and how to share their personal data and to what extent. Although sometimes it is not possible to reap off the benefits of the internet without revealing personal information, it is advisable to be safe against any negative consequences of online activities and adopt some mechanisms to avert digital privacy violation.

Therefore, it is time to prioritize digital literacy education. There is a need to include digital literacy in the formal education system in our country to make the young generation digitally literate and inform them about their rights in protecting their privacy and personal data. And digital literacy education

should be started from the school level so that when students attain adulthood, they know how to perform informedly in this digital world. Recently in NEP (2020), digital literacy has been mentioned as an essential and critical life skill for students. Thus, there is a need to develop a strong curriculum at the school level to integrate digital literacy education. Digital literacy should not just be taught as a theoretical subject but also involve practical exposure. Before they have their first mobile phone, every student should undertake some digital literacy lessons as a part of their formal education to understand that their digital space and privacy are the key to their successful digital existence.

Besides formal education, the worth of digital literacy should be understood and supported by the families of the youths and society itself. Digital literacy is required at every level of society and in every age group to transport the importance of digital privacy to the younger generation for whom the digital environment plays an indispensable part. In addition to the efforts of schools and teachers to make students digital literate, individual efforts to develop critical mindset should also be encouraged.

Apart from education, there is an urgent need for time-bound work and study for the youths whenever digital media become a compulsion in any crisis situation. Indeed, the research also reveals that youths' personal space got compromised due to work-from-home situation during the pandemic. Therefore, a smart balance between work and personal life is advisable when people are working from home so that their personal and professional life can be managed well.

The paper strongly recommends to develop one stern data security law in the country, including greater transparency and accountability. One unified law is urgently needed to keep a balance between using advanced technologies and protecting personal data and privacy while using those technologies. Moreover, there is a need for a sense of responsibility among the tech giants to protect the users' privacy under prescribed law and the use of AI and block-chain technology for public benefits, e.g., using of high-fidelity AI humans in the time of online classes, proctoring online exams to keep trust between human-device relation (Ferreira & Cruz-Correia, 2021).

Lastly, the authors would suggest the youths to be more aware of their online activity, the surveillance business model of these tech giants, and all the privacy settings of every application as Livingstone (2018) stated that every action of this generation in the virtual environment can create significant consequences in every part of society and its change including politics, business models, market, regulatory framework and the direction of socio-technical change.

VII. Future Scope & Limitations

The present study and its outcome will guide the scholars to take up similar issues with new perspectives and solutions. The authors have included both students and working professionals as respondents in the research. Due to COVID -19 sustained lockdowns, snowball sampling was used to contact the respondents; ergo, the number of working professionals is less than the students in the survey. So, another study on working professionals' understanding and experience of digital privacy can strengthen the present research's findings. Physical data collection was not possible due to pandemic restrictions, so the online survey method was used. Likewise, studies using other qualitative methods may improve the generalizability of findings. In this study, the internet-using habit of youths during COVID-19 has been examined. Further comparative study could be conducted by measuring the internet using habits of people after returning to normalcy. Research on how to integrate digital literacy into mainstream education also needs to be explored.

References

- Acker, A., & Bowler, L. (2018). Youth Data Literacy: Teen Perspectives on Data Created with social media and Mobile Devices. *51st Hawaii International Conference on System Sciences*, 9, 1923–1932. <https://scholarspace.manoa.hawaii.edu/server/api/core/bitstreams/1169ca6c-5cbb-45f6-b8a2-8fd88c3dd29a/content>
- Adorjan, M., & Ricciardelli, R. (2018). *Cyber-risk and youth: Digital citizenship, privacy and surveillance*. Routledge. <https://doi.org/10.4324/9781315158686>
- Agosto, D., Abbas, J., & Naughton, R. (2012). Relationships and Social Rules: Teens' Social Network and Other ICT Selection Practices. *Journal of the American Society for Information Science and Technology*, 63(6), 1108–1124. <https://doi.org/10.1002/asi.22612>
- Arlington, V. (2020). *Gartner Survey Reveals 82% of Company Leaders Plan to Allow Employees to Work Remotely Some of the Time*. Gartner. <https://www.gartner.com/en/newsroom/press-releases/2020-07-14-gartner-survey-reveals-82-percent-of-company-leaders-plan-to-allow-employees-to-work-remotely-some-of-the-time>
- Agosto, D. E., & Abbas, J. (2016). “Don’t be dumb—that’s the rule I try to live by”: A closer look at older teens’ online privacy and safety attitudes. *New Media & Society*, 19(3), 347–365. <https://doi.org/https://doi.org/10.1177/1461444815606121>
- Basuroy, T. (2022). *Internet usage in India - statistics & facts*. Statista. <https://www.statista.com/topics/2157/internet-usage-in-india/>
- Bélanger, F., & Crossler, R. E. (2011). Privacy in the Digital Age: A Review of Information Privacy Research in Information Systems. *MIS Quarterly*, 35(4), 1017–1041. <https://doi.org/10.2307/41409971>
- Bhattacharya, D. (2021). The Information Technology (IT) Rules. *Manohar Parrikar Institute for Defence Studies and Analyses*. <https://www.idsa.in/idsacomments/it-rules-2021-dbhattacharya-040621>
- Buckingham, D. (2001). *Media Education: A Global Strategy for Development. A policy paper prepared for UNESCO Sector of Communication and Information*. UNESCO. https://www.researchgate.net/publication/228730180_Media_Education_A_Global_Strategi_for_Development_A_Policy_Paper_Prepared_for_UNESCO_Sector_of_Communication_and_Information
- Cerf, V. G. (2016). Information and misinformation on the internet. *Communications of the ACM*, 60(1), 9. <https://doi.org/10.1145/3018809>
- Clarke, R. (1999). Internet Privacy Concerns Confirm the Case for Intervention. *Communications of the ACM*, 42(2), 60–67. <https://doi.org/10.1145/293411.293475>.
- Data secure status for India is vital: Sharma on FTA with EU. (2013). *Business Standard*. https://www.business-standard.com/article/economy-policy/data-secure-status-for-india-is-vital-sharma-on-fta-with-eu-113090300889_1.html
- Fahey, R. A., & Hino, A. (2020). COVID-19, digital privacy, and the social limits on data-focused public health responses. *International Journal of Information Management*, 55(2020), 102181. <https://doi.org/10.1016/j.ijinfomgt.2020.102181>
- Faraj, S., Renno, W., & Bhardwaj, A. (2021). Unto the breach: What the COVID-19 pandemic exposes about digitalization. *Information and Organization*, 31(1), 1–7. <https://doi.org/10.1016/>

j.infoandorg.2021.100337

- Halton, C. (2021). *Digital Native Definition*. Investopedia. Retrieved June 10, 2021, from [dathttps://www.investopedia.com/terms/d/digital-native.asp](https://www.investopedia.com/terms/d/digital-native.asp)
- The Centre for Internet & Society. (n.d.). *Internet Privacy in India*. <https://cis-india.org/telecom/knowledge-repository-on-internet-access/internet-privacy-in-india>
- Jayachandran, J. (2018). Media Literacy and Education in India During Times of Communication Abundance. *Journal of Creative Communications*, 13(1), 73–84. <https://doi.org/10.1177/0973258617743625>
- Jones, P. C., Diagne, A., Finlay, A., Gaye, S., Gichunge, W., Onumah, C., Pretorius, C., & Schiffrin, A. (2018). MEDIA LITERACY TEACHING AROUND THE WORLD. In *Misinformation Policy in Sub-Saharan Africa: From Laws and Regulations to Media Literacy* (pp. 31–34). Westminster Press. <https://www.jstor.org/stable/j.ctv1v3gqw5.9>
- Kashyap, K. (2021). Are we crossing boundaries while digitally monitoring employees? *HRkatha*. <https://www.hrkatha.com/technology/are-we-crossing-boundaries-while-digitally-monitoring-employees/>
- Katarki, S., Viswanath, N., Chatterjee, I., & Varanasi, R. R. (2020). *The Personal Data Protection Bill, 2019: Key Changes And Analysis*. Mondaq. <https://www.mondaq.com/india/privacy-protection/880200/the-personal-data-protection-bill-2019-key-changes-and-analysis>
- Kemp, S. (2021). *DIGITAL 2021: INDIA*. Data Reportal. <https://datareportal.com/reports/digital-2021-india>
- Khanna, M. (2021). 61% Indians Use Internet In 2021, Up From Just 21% In 2017 Says Report. *India Times*. <https://www.indiatimes.com/technology/news/india-internet-usage-report-554181.html>
- Kumar, K. J. (2019). *Media Literacy in India*. In *The International Encyclopedia of Media Literacy*, 1–6. <https://doi.org/10.1002/9781118978238.ieml0152>
- Livingstone, S. (2018). *Children's data and privacy online Growing up in a digital age*. The London School of Economics and Political Science. <https://www.lse.ac.uk/media-and-communications/research/research-projects/childprivacyonline>
- Mason, R. O. (1986). Four ethical issues of the information age. *MIS Quarterly*, 10(1), 5–12. <https://doi.org/10.4324/9781315259697-8>
- Ministry of Electronics & Information Technology. (2022). *Digital Literacy*. <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1812277>
- Ministry of Electronics & Information Technology. (2022). *National Data Governance Framework Policy*. <https://pib.gov.in/PressReleasePage.aspx?PRID=1845318>
- Ministry of Electronics & Information Technology. (n.d.). *Di- Initiatives*. <https://digitalindia.gov.in/services/>
- Ministry of External Affairs. (2021). *One of The Youngest Populations in the World – India's Most Valuable Asset*. <https://indbiz.gov.in/one-of-the-youngest-populations-in-the-world-indias-most-valuable-asset/>
- Ministry of Human Resource Development. (2020). *National Education Policy 2020*. https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Museum and Library Services Act. (2010). <https://www.imls.gov/sites/default/files/1996.pdf>

- National Council of Educational Research and Training. (2005). *National Curriculum Framework*. <https://ncert.nic.in/pdf/nc-framework/nf2005-english.pdf>
- Nissenbaum, H. (2004). Privacy as contextual integrity. *Washington Law Review*, 79(1), 119–157. <https://digitalcommons.law.uw.edu/wlr/vol79/iss1/10>
- Pangrazio, L., Godhe, A. L., & Ledesma, A. G. L. (2020). What is digital literacy? A comparative review of publications across three language contexts. *E-Learning and Digital Media*, 17(6), 442–459. <https://doi.org/10.1177/2042753020946291>
- Pariser, E. (2011). *The Filter Bubble: What The Internet Is Hiding From You*. Penguin Press.
- Pragati. (2021). Social media statistics in India. *Talkwalker*, 1–25. <https://www.talkwalker.com/blog/social-media-statistics-in-india>
- Santar, N., Manago, A., Starks, A., & Reich, S. M. (2021). Early Adolescents' Perspectives on Digital Privacy. *Algorithmic Rights and Protections for Children*. <https://wip.mitpress.mit.edu/pub/early-adolescents-perspectives-on-digital-privacy/release/1>
- Setyowati, L. (2016). *Digital Life, Digital Tattoo and The Filter Bubble: raising the awareness and the cautions on online activities through information literacy education*. Conference on Science Mapping, Yogyakarta, Indonesia. https://www.researchgate.net/publication/305682940_Digital_Life_Digital_Tattoo_and_The_Filter_Bubble_raising_the_awareness_and_the_cautions_on_online_activities_through_information_literacy_education
- Shah, S. G. S., Nogueras, D., van Woerden, H. C., & Kiparoglou, V. (2020). The COVID-19 Pandemic: A Pandemic of Lockdown Loneliness and the Role of Digital Technology. *Journal of Medical Internet Research*, 22(11), 1–7. <https://doi.org/10.2196/22287>
- Smith, K. L., & Shade, L. R. (2018). Children's digital playgrounds as data assemblages: Problematics of privacy, personalization, and promotional culture. *Big Data and Society*, 5(2), 1–12. <https://doi.org/10.1177/2053951718805214>
- Subramaniam, N. (2021). Twitter And WhatsApp Vs India's New IT Rules. *Inc42 Media*. <https://inc42.com/buzz/why-twitter-and-whatsapp-have-not-made-peace-with-indias-new-it-rules/>
- Trinic, D., & Vukelic, A. K. (2021). Privacy On The Internet Concerning Generation Z In Bosnia And Herzegovina. *Media Literacy and Academic Research*, 4(1), 180–199.
- Vargo, D., Zhu, L., & Benwell, B. (2020). Digital technology use during COVID-19 pandemic: A rapid review. *Human Behavior and Emerging Technologies*, 3(1), 13–24. <https://doi.org/10.1002/hbe2.242>
- Wisniewski, P. (2018). The Privacy Paradox of Adolescent Online Safety: A Matter of Risk Prevention or Risk Resilience? *IEEE Security and Privacy*, 16(2), 86–90. <https://doi.org/10.1109/MSP.2018.1870874>
- Wisniewski, P. J., Vitak, J., & Hartikainen, H. (2022). Privacy in Adolescence. In: Knijnenburg, B.P., Page, X., Wisniewski, P., Lipford, H.R., Proferes, N., Romano, J. (eds) *Modern Socio-Technical Perspectives on Privacy*. Springer, Cham. https://doi.org/10.1007/978-3-030-82786-1_14
- Youthpolicy. (2014). *Definition of Youth*. Retrieved June 10, 2021, from <https://www.youthpolicy.org/factsheets/country/india/#:~:text=Definition of Youth,constitutes 27.5%25 of India's population>

La privadesa digital i les dades personals durant la COVID-19: els joves estan prou alfabetitzats digitalment per afrontar-ho?

Resum

La pandèmia de la COVID-19 ha accelerat el desenvolupament d'aplicacions digitals i ha inspirat tothom a adaptar-se a les tecnologies per frenar la propagació del brot. A mesura que aquesta crisi s'intensifica, l'ús ràpid de dispositius i aplicacions digitals s'ha fet ressò de les greus preocupacions sobre les llibertats civils, la privadesa i la protecció de dades. Tenint en compte la situació, aquesta investigació pretenia explorar els hàbits d'ús d'internet dels joves de Bengala Occidental, un estat de l'est de l'Índia, durant la COVID-19. A més, el document explora les seves experiències d'ús de diverses aplicacions digitals, l'alfabetització digital fonamental i la seguretat amb què protegeixen les dades de les infraccions. Així, l'article presenta els resultats realitzant una enquesta en línia entre els joves de Bengala Occidental. El resultat, de 215 participants, mostra que l'augment de l'ús d'aquestes aplicacions digitals no ha coincidit amb la demanda d'alfabetització sobre la privadesa digital entre la generació jove. Tot i que aquesta pandèmia ha plantejat preocupacions sobre la privadesa digital i la protecció de dades, el joves no empen cap mecanisme de protecció sòlid per protegir-se digitalment. A més, aquest article proposa plans adequats per conscienciar aquesta generació i formar una ciutadania digital sana amb un marc normatiu adequat a la necessitat del moment.

Paraules clau

COVID-19, Privadesa digital, Protecció de dades personals, Alfabetització digital, Joves, Bengala Occidental.

La privacidad digital y los datos personales durante la COVID-19: ¿los jóvenes están suficientemente alfabetizados digitalmente para afrontarlo?

Resumen

La pandemia de la COVID-19 ha acelerado el desarrollo de aplicaciones digitales y ha inspirado a todos a adaptarse a las tecnologías para frenar la propagación del brote. A medida que esta crisis se intensifica, el rápido uso de dispositivos y aplicaciones digitales se ha hecho eco de las graves preocupaciones sobre las libertades civiles, la privacidad y la protección de datos. Teniendo en cuenta la situación, esta investigación pretendía explorar los hábitos de uso de internet de los jóvenes de Bengala Occidental, un estado del este de la India, durante la COVID-19. Además, el documento explora sus experiencias de uso de diversas aplicaciones digitales, la alfabetización digital fundamental y la seguridad con la que protegen los datos de las infracciones. Así, el artículo presenta los resultados realizando una encuesta online entre los jóvenes de Bengala Occidental. El resultado de 215 participantes muestra que el aumento del uso de estas aplicaciones digitales no ha coincidido con la demanda de alfabetización sobre la privacidad digital entre la generación joven. Aunque esta pandemia ha planteado preocupaciones sobre la privacidad digital y la protección de datos, los jóvenes no emplean ningún mecanismo de protección sólido para protegerse digitalmente. Además, este artículo propone planes adecuados para concienciar a esta generación y formar a una ciudadanía digital sana con un marco normativo adecuado a la necesidad del momento.

Palabras clave

COVID-19, Privacidad digital, Protección de datos personales, Alfabetización digital, Jóvenes, Bengala Occidental.

Date of publication: 30/06/2023

The articles published are under a [Creative Commons Attribution-NonComercial-NoDerivs 4.0 Spain License](#). Authors retain all rights.

