Research Article

Cyber Etiquettes of Prospective Teachers: An Empirical Research

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Abstract

Cybercrime is a significant problem in cyberspace, but cyber etiquette empowers and helps users avoid it. This study was done with the prime objective of exploring the cyber etiquette of prospective teachers. The descriptive research method with the quantitative approach was adopted. 250 prospective teachers were selected randomly from the "Department of Education of the University of Delhi" and its Colleges. A standardized tool was administered to collect data. Concerning the data analysis, various statistical measures of descriptive and inferential statistics were applied. Raw scores were converted into the z-standard score to bring scores on a common standard scale and secure meaningful data interpretation. Mean, standard deviation, skewness, kurtosis, and standard errors were computed. The Shapiro-Wilk Test was applied to verify the normality. Independent t-tests and analysis of variance were applied to test the null hypothesis. The finding reveals that the majority of the prospective teachers had average-level cyber etiquette. Gender, types of family, habitat, and caste as factors were found to be significant factors in explaining the cyber etiquettes of prospective teachers, whereas stream could not create any variation.

Keywords: Cyber etiquette, Cybercrime, cyberspace, and social behaviour

Introduction

Digital technology is a rapidly growing domain of development. India has given a special focus on the development of digital technology. Digital technology has affected almost all domains of life and brought revolutionary changes in society. Although Digital Technology has numerous advantages, it is also a fact that Cybercrime has emerged as a challenge in society. "The share of cybercrime in India is bigger; more than 6 lakh complaints have been received regarding cybercrime, and 12776 FIRs have also been recorded", as reported by (the Home Ministry of India, 2021). Looking into the seriousness of Cybercrime in the country, the "Ministry of Home Affairs" (2022), in response to some questions in the Rajya Sabha, stated that various measures have been taken to control Cybercrime. "National Cyber Forensic Laboratory (NCFL)" has been set up. In addition, the "Indian Cyber Crime Coordination Centre" has also been set up to develop a good ecosystem, guidelines, and framework to deal with the cases of Cybercrime in the country. Most importantly, the "National Cyber Crime Reporting Portal" has also been launched to enable the public to register their cases regarding cybercrime, especially for women and children, which will automatically be routed to the concerned state or UTs for further enforcement of law and policies regarding Cybercrime. Further, the "Citizen Financial Cyber Fraud Reporting and Management System" is also functional for lodging online complaints in case of any financial fraud committed

by any fraudster. For training purposes, various MOOC programs on Cybercrime have been developed through the "CyTrain portal" to build the capacity of various judicial and police officers. Despite legal provisions and policies, many cyber crimes can still be observed in society. Cyber laws, policies, acts, measures, etc., will work in their own way according to rules and regulations. However, there is a big question of cyber etiquette/morality, ethics, and values to reduce Cybercrime. The importance of cyber etiquette increases much more for prospective teachers because, directly or indirectly, the cyber behaviour of their students will be highly influenced by the cyber etiquette of prospective teachers in the future. Considering this, it is one of the basic needs to acquaint the prospective teachers to be the guiding light in this unforgiving and unsettled sea with the practical details of the virtual world. As per Oral (2023), "Digital platforms are not environments where freedoms are experienced unlimitedly and without rules. It should not be forgotten that only the environment is virtual, but the people are real." Further, "there are expected social, behavioural rules or "etiquettes" that are equally applicable to the virtual classroom to both teacher and students, which helps to regulate the classroom environment. These rules and regulations are termed Cyber etiquette or Netiquette (net+etiquette) and may be described as the informal guidelines for the users of the internet for acceptable online behaviour" (Kaynay, 2004). If anything is implemented forcefully by law, then it has the possibility that the effectiveness is not likely to be as expected or desired, whereas if the people of the society accept anything (cyber etiquette) unanimously with their conscience, then the possibility of sustaining that behaviour increases and be accepted effectively. Therefore, the lack of awareness about cyber etiquette may cause many negative consequences and make it difficult to avoid various cyber crimes such as phishing, hacking, fraud, theft, health risks, and illegal/unauthorized access to contents that are protected. The prospective teachers needed to be groomed in a manner that would allow them to use these cyber etiquette not only in the classroom but also everywhere in cyberspace. Shea (2015) emphasized, "Cyberspace is the mass consensual hallucination in which humans all over the planet meet, converse, and exchange information". Hence, a pre-service teacher must be well-versed in cyber etiquette related to email, group formation, texting apps, virtual meetings, and social media, as well as digital ethics and digital security. It will help to raise the awareness of pre-service teachers and their future students towards cyber ethics, data security, data theft, cyberbullying, and coping strategies (Gümüş, Çakır, & Korkmaz, 2023; Arslan, 2023). The increasing amalgamation of the internet in our day-to-day life, easy access to smartphones, and the popularity of social media presents an ideal environment for Cybercrime against children, who are the most avid and naïve segment of Internet users (Bele, Dimc, Rozman, & Jemec, 2014). A survey done by "Satyarthi Global Policy Institute for Children" (2023) on Cybercrime against children in India confirmed that the incidents of Cybercrime against children increased fifteen times in the last five years, and the irony is that only one per cent of cases ended in conviction listed in 2021 under the POCSO act. School-going children are vulnerable to various types of Cybercrime, such as cyberbullying, sexual abuse and exploitation, cyber blackmailing, grooming, sexting, cyberstalking, online trafficking, etc. Due to a lack of proper knowledge of cyber etiquette, the roots of Cybercrime are becoming deeper in cyberspace day by day, which leads to a decreasing possibility of being safer

and good in cyberspace for others and safer and good for themselves. Hence, in the backdrop of all these examples and cases, there are big concerns and a lack of cyber etiquette. The findings of the previous research not only provide evidence about the dangerous outcomes of cybercrime and poor cyber etiquette but also the inconsistencies noticed in the findings, which are presented systematically below.

Literature Review

In the case of international research, high contradictions can be seen. As per the report of Pusey and Sadera (2011), teachers lack the ability and knowledge to teach different software and protective firewalls and different laws related to Cybercrime. At the same time, a study by Simanjuntak, Limbong, and Wardani (2023) claims that pre-service teachers acquired expertise in digital competencies but still lacked copyright and licensing issues. As per Milton, Giæver, Mifsud, Spain, and Gassó (2021), all the pre-service teacher respondents lack sufficient application knowledge of copyright and privacy rules in online setups. In addition, these students exhibit irresponsible behaviour toward posting images of friends on social media platforms. Regarding gender, there are inconsistencies and contradictions in the findings. In the case of the pre-service teachers, female participants exhibited more sensitivity towards cyberbullying and the danger posed by the Internet, while male participants were more knowledgeable in data security and digital ethics, as reported by (Gümüş, Çakır & Korkmaz, 2022; Yılmaz, Şahin, & Akbulut, 2016).

Similarly, Arslan and Aydin (2023) highlighted that female prospective teachers also possess higher cyberbullying coping knowledge than male teachers, but coping knowledge decreases with time spent on the internet. In contrast, Tarhan (2022) revealed that gender does not make any important difference in data security awareness. Similarly, Promsri, Chaigusin, and Tupmongkol (2019) found no notable variation in digital etiquette between male and female students. Likewise, Mehmet and Teker (2017) endorsed findings that male and female pre-service teachers were the same in the netiquettes. Concerning the knowledge of the netiquettes based on different subjects/programs, the contradictions in the findings also noticed as Iqbal, Hanif, Ali, Tahir, Minhas, Yasmeen, and Laique (2021) found that in-service teachers also lack the requisite knowledge of netiquette guidelines. Further, Gümüş, Çakır, and Korkmaz (2022) reported that the language, sports, and arts departments were better at digital data security than any other department. In contrast, Mehmet and Teker (2017) reported that foreign language pre-service teachers showed better netiquette behaviour than literature and physics programs. In addition, Mehmet and Teker (2017) reported that the netiquette behaviour of pre-service teachers increases with the grade level.

Regarding the type of Cybercrime and its adverse outcomes, researchers have dissimilar perspectives on their findings. Defamation and violence threats are the most common types, as investigated by (Näsi, Oksanen, Keipi & Räsänen, 2015), whereas internet theft and information sharing related to pornography, as reported by (Lu et al., 2006). Digital piracy, cyber harassment, and hacking as researched by (Donner, 2016). The study conducted by Näsi, Oksanen, Keipi, and Räsänen (2015) considers males at high risk of being cyberbullying victims as they are more active users. In contrast to this, Hutchings and Chua (2016) consider Cybercrime to be a male-dominated area**.** It is supported by Donner (2016) and Li (2006) that in the case of online harassment and

digital piracy, more men were involved, whereas Park, Na, and Kim (2014) do not find any gender difference among bullying, victimization and witnessing online.

Further, regarding the metro cities, Näsi, Oksanen, Keipi, and Räsänen (2015) reported that those who live in big cities, are not very social, and have less interaction with parents, are more prone to Cybercrime. Park, Na, and Kim (2014) inferred that frequent communication with parents and involvement in only online studies supported good netiquette behaviour to keep a check on cyber victimization. Similarly, Weijer, Steve, and Leukfeldt (2017) found out that those who are emotionally unstable and more curious youngsters are more vulnerable to Cybercrime. Virtanen (2017) found out that those who are disadvantaged in economic status, low in self-confidence, and women were more fearful of Cybercrime. Similarly, in the case of secondary victimization, the fear intensifies more in victims of low socio-status, whereas it is equal in males and females. In contrast, Navarro (2015) presented the fact that cyberbullying was an extension of school bullying, and it was more for those children, especially males, who diverged from normal stereotypical gender identity.

Research studies that have been done on the international level are subject to different research methodologies and approaches, types of samples, subjectivity, and diversity in culture, environment, and location. All these factors reduce the possibility of generalizing the power of the above studies in the Indian context. However, these studies are helpful in understanding comprehensively the issues of cyber etiquette and Cybercrime on an international level.

Concerning the research gaps in the case of India, research on cyber etiquette is still scarce. Although research has been done on Cybercrime, there are contradictions. As per Dhar and Gayan (2022), the student teachers showed a shallow level of awareness about reference software, netiquette, copyright, etc, whereas regarding cybercrime awareness, no important variation occurs between male and female prospective teachers as investigated by (Shekhar & Nathyal, 2018; Sunder, 2018; Goel, 2014; Jha & Bhutia). In contrast, Kumaravelu (2018) established that female students possessed better awareness, whereas Kumar, Grewal, and Khosla (2021) found that male students have better cybercrime awareness. Whereas Rizal, Rusdiana, Setiawan, Siahaan, and Ridwan (2021) reported that in the case of digital literacy, male student teachers were found to be better than female student teachers, while those who have computers at home possessed better cybercrime awareness as supported by (Kumaravelu 2018; Bhutia, and Passah 2019; Jha & Bhutia, 2018). It shows inconsistent findings based on gender and indicates a lack of cyber etiquette. Further, concerning the stream of education, it is noticed that cybercrime awareness of science teachers was better than that of social science teachers (Sunder, 2018; Bhutia & Passah, 2019), whereas as per Jha and Bhutia (2018), teacher trainees in Mathematics exhibited favourable attitudes towards cyber resources.

In case of vulnerability to cyberbullying, women are more vulnerable, as reported by (Jain and Agrawal, 2020; Sandhu and Kaur 2017). In contrast, male participants are more cyberbullied than females as investigated by (Khawrin, 2022). Concerning perpetrators, Sandhu and Kaur (2022) provided evidence that those who are highly stressed, anxious, depressed, substance abuse, and antisocial behaviour are most likely to victimize others. Similarly, the

findings of Kaur and Saini (2023) exhibit that victims of Cybercrime generally exhibit aggressiveness, depression, strained relationships, and substance abuse. Apart from this, the victims may often exhibit suicidal tendencies, as researched by (Maurya, Muhammad, Dhillon & Maurya 2022; Rao, Bansal, and Chandran 2018). Concerning the relationship between netiquette and age, the absence of agreement is also noticed because Ghatak (2013) investigated and reported no relationship between netiquette and age, but in contrast, there is evidence from the findings of Dhar and Gayan (2022) that age influences the literacy of net ethics. Similarly, a higher sense of digital etiquette was reported in students of higher age groups (Kumar & Raj, 2020). Hence, at the national level, findings are also contradictory.

Justification

Teacher training programs are the most effective and powerful means not only for creating prospective teachers but also for developing those futuristic teachers who will shape responsible citizens and good human beings. Teachers deeply influence students and are the most effective component of human development in society. It is the reason that this skill of the teachers gives them a special place and status in society. In the age of technology, student-teacher relationships are not limited to the school's boundary wall. They stay connected by the social media platform and observe the activities of each other. If a student observes negative behaviour or unethical activity of teachers in cyberspace. Under such circumstances, students will get negative motivation. Hence, it is very much necessary that prospective teachers have such cyber etiquettes that leave an ethical impact on their students to follow cyber etiquettes in cyberspace so that students may be inspired to display good cyber etiquettes in cyberspace. The good etiquette of the teachers served as a safeguard for their students to stay away from the world of Cybercrime and adopt good digital citizenship in the future. The importance of cyber etiquette increases much more when the "International Society for Technology in Education" (2018) recognizes cyber etiquette as an essential competency not only for the teacher but also for the students for good digital citizenship. Hence, considering the above logic and arguments, exploring the status of cyber etiquette among prospective teachers is very significant. Besides, the aforementioned study will also examine whether different variables like gender, habitat, stream, and cast are important factors in explaining or making cyber etiquettes high or low among prospective teachers. Hence, based on outcomes, various interventions may be designed to improve the cyber etiquette of prospective teachers.

Statement of the problem

Cyber Etiquettes of Prospective Teachers: An Empirical Research

Objectives

1. To study cyber etiquettes of prospective teachers
2. To study cyber etiquettes of prospective teachers concerning gender
3. To study cyber etiquettes of prospective teachers concerning types of families.
4. To study cyber etiquettes of prospective teachers concerning stream
5. To study cyber etiquettes of prospective teachers concerning cast.
6. To study cyber etiquettes of

prospective teachers concerning habitat.

Hypothesis

1. There is no significant difference in cyber etiquettes of male and female prospective teachers.
2. There is no significant difference in cyber etiquettes of prospective teachers of joint and nuclear families".
3. There is no significant difference in cyber etiquettes of art, science, and commerce prospective teachers.
4. There is no significant difference in cyber etiquettes of general, SC, ST, OBC, EWS, prospective teachers
5. There is no significant difference in cyber etiquettes of rural, urban, and metro prospective teachers.

Operational definitions

Prospective Teacher

"Prospective teacher refers to those students who registered themselves in the B.Ed program (pre-service teacher training) of the University of Delhi".

Cyber Etiquette

Cyber etiquette refers to those manners or attitudes toward digital technology that help avoid unethical activity in cyberspace.

Research method

As this research was descriptive, therefore, a descriptive research method was adopted with the quantitative approach.

Population

All the prospective teachers who registered themselves in the B.Ed. The program of the University of Delhi was the population of this study.

Sampling

250 prospective teachers were selected randomly from the "Department of Education, Central Institute of Education (CIE), University of Delhi", and its affiliated colleges. The composition of the sample is presented in the table 1

Table-1: Sample Structure

Category	Description	Sample Size	Total
Gender	Male	126	250
	Female	124	
Family	Joint Family	84	250
	Nuclear family	166	
Stream	Arts	127	250
	Commerce	46	
	Science	77	
Social Category	General	112	250
	OBC	65	
	SC	31	
	ST	15	
	EWS	27	

Category	Description	Sample Size	Total
Habitat/Locality	Metro	148	250
	Urban	67	
	Rural	35	

Collection of Data

Description of tool

Concerning the data collection, the Cyber Etiquette Scale developed and standardized by Santhosh and Thiyagu (2022) was applied. This scale has 50 items, which are distributed into three dimensions, namely "Privacy and confidentiality", "Piracy and Plagiarism", and "Integrity and Politeness" The extraction of these three dimensions was done through factor analysis. Before the extraction of the dimensions, the sampling adequacy was examined by the "Kaiser-Meyer-Olkin test" (KMO). The adequacy of intercorrelation was also verified by "Bartlett's Test of Sphericity". These three dimensions have a 33.956 per cent explained variance in total. Overall, this scale has 29 positive items and 21 negative items. The cyber etiquette scale is a four-point scale. Respondents can record their responses by marking any option of the choice like yes, to a great extent, yes, to a large extent, yes, to a small extent, and no, Not at all. A minimum of 50 and a maximum of 200 scores are possible on the cyber etiquette scale. A higher score indicates a higher status in cyber etiquette, whereas a lower score indicates a low level of cyber etiquette. The discrimination power of the scale was determined. For this purpose, the t-test was applied. Only those items were retained in the scale that had the significant value of the t-test. Those items that didn't have the significant value of the t-test were dropped from the scale. The index of reliability was determined by Cronbach's Alpha and split-half method. The reliability coefficient by Cronbach's Alpha was 0.889, whereas the reliability index by the split-half method was 0.839. Hence, it shows that this scale is highly reliable. Concerning the validity, it has content as well as face validity, which provides evidence that this is a valid scale for assessing the cyber etiquette of prospective teachers. The administration of the Cyber Etiquette scale was done in small groups of prospective teachers.

Statistical Analysis

For scientific data analysis, various measures of descriptive and inferential statistics were applied. Under descriptive statistics, the mean was computed to determine the central tendency of cyber etiquette scores. The mean was also used to detect the significant difference among the means through the t-test. Deviation among the scores from the mean was explored by standard deviation. Further, standard deviation was also used to determine the standard error of the means. For the testing of the normality of the data set, skewness and kurtosis were computed. The Shapiro-Wilk Test was also used to verify the data's normality. In inferential statistics, a t-test was used to map the significant difference between the two means of different groups of cyber etiquette, such as gender (male and female) and types of family (nuclear and joint family). An analysis of variance was also computed to test the significant difference among more than two means concerning different groups based on cyber etiquette, such as stream (Art, Science, and Commerce), social categories (general, OBC, SC, ST, and EVS), and locality (Metro, rural, and urban). A t-test and analysis of variance were used to test the null hypothesis.

Table-2: Cyber Etiquette of Prospective Teachers

Z-score Rage	Level of Category	Total
+ 2.01 & above	Extremely High	1.20%
+ 1.26 to + 2.00	High	9.20%
+ 0.51 to + 1.25	Above Average	20.80%
- 0.50 to + 0.50	Average	38.80%
-1.25 to -0.51	Below Average	18.40%
-2.00 to -1.26	Low	9.20%
-2.01 to below	Extremely Low	2.40%

Concerning the cyber etiquettes of the prospective teachers, as mentioned in Table 2, it is noticed that the maximum prospective teachers have an average level of 38.80 per cent cyber etiquettes. Further, there is not too much of a gap in the above-average and below average categories because 20.80 per cent of prospective teachers had above average, whereas 18.40 per cent of prospective teachers possessed below-average cyber etiquette. In addition, 9.20 per cent of prospective teachers reported high and low cyber etiquette, respectively. Data also indicates that a few prospective teachers had extremely high 1.20 per cent and extremely low 2.40 per cent cyber etiquette, respectively.

Table-3: Descriptive statistics of cyber etiquettes of prospective teachers

			Statistic	Std. Error
TOTAL	Mean		156.6000	.86629
	95% Confidence Interval for Mean	Lower Bound	154.8938	
		Upper Bound	158.3062	
	5% Trimmed Mean		156.7422	
	Median		157.0000	
	Variance		187.614	
	Std. Deviation		13.69724	
	Minimum		118.00	
	Maximum		194.00	
	Range		76.00	
	Interquartile Range		19.00	
	Skewness		-.143	.154
	Kurtosis		-.157	.307

As shown in Table 3, the computed value of the skewness is -.143, which means that there is negative skewness in the data set, but this skewness index is very near to the normal index of the skewness, i.e. (0). Similarly, the index of kurtosis is -.157, which implies that computed kurtosis is very close to the normal index of the kurtosis, i.e. (0.263). Although slight deviation occurs in the index of the skewness and kurtosis but both values are very close to their normal values. Further, If the computed values of the skewness and kurtosis are divided by their standard errors, then the value of the skewness and kurtosis will be (0.92 and 0.511) respectively, which also fall between the normal span of the normal probability curve, i.e. -1.96 to +1.96 because both values neither below -1.96 nor greater +1.96. In addition to it, the Shapiro-Wilk Test was also computed for testing the normality of the data set. The computer value of the Shapiro-Wilk Test was 0.996, which is larger than 0.05 and is desirable to be called the data set normal in the distribution, as indicated in Table 4. This trend is also confirmed by Figure 1, which indicates that data falls exactly on a straight line with a very slight deviation. Hence, after being fully satisfied with the condition of the normal distribution of the data set, various measures of inferential statistics were applied.

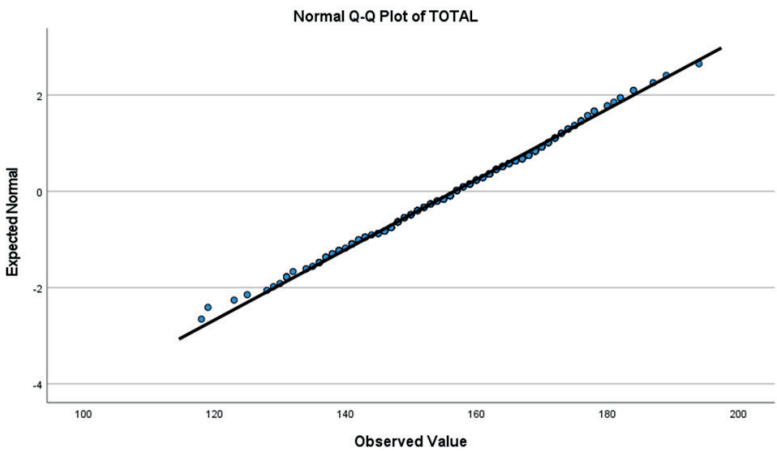

Figure-1:Normal Q-Q Plot of the Data Set

Table-4: Index of the Shapiro-Wilk Test

Statistic	Df	Sig.
.996	250	.831

Table-5: Group statistics and independent t-test of cyber etiquettes of male and female prospective-teachers

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
TOTAL	Male	126	153.7063	14.10536	1.25661
	Female	124	159.5403	12.66157	1.13704

Table-6: Independent t-test of cyber etiquettes of male and female prospective teachers

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p			Lower	Upper
TOTAL	Equal variances assumed	1.284	.258	-3.440	248	<.001	<.001	-5.83397	1.69614	-9.17465	-2.49330
	Equal variances not assumed			-3.443	245.937	<.001	<.001	-5.83397	1.69467	-9.17190	-2.49605

As indicated in Table 5, it is evident that the standard deviations and means of cyber etiquettes of male and female prospective teachers are (14.10536, 12.66157) and (153.7063, 159.5403) respectively. The equal variance assumed (0.258) is desirable as the obtained value is non-significant, as mentioned in Table 6. Further, the computer value of the independent t-test is (3.440), which is significant at <.001 level of significance for the degree freedom of 248. Therefore, the Null hypothesis, "There is no significant difference in cyber etiquettes of male and female prospective teachers", is rejected because the mean value (159.5403) of the female prospective teacher is absolutely larger than the mean value (153.7063) of the male prospective teachers. Hence, it can be concluded that gender is the significant factor that creates the difference between the cyber etiquettes of the male and female teachers, which are in favour of the females. In other words, female prospective teachers have significantly higher cyber etiquette than male prospective teachers while they are in cyberspace.

Table-7: Group statistics of cyber etiquettes of prospective teachers of the joint and nuclear families

Group Statistics

	TypesofFamily	N	Mean	Std. Deviation	Std. Error Mean
TOTAL	Joint Family	84	152.9405	15.00229	1.63688
	Nuclear Family	166	158.4518	12.63500	.98067

Table-8: Independent t-test of cyber etiquettes of prospective teachers of the joint and nuclear families

"Independent Samples Test"											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
	Equal variances assumed	2.7	0.102	-3.06	248	0.001	0.002	-5.5113	1.80411	-9.0647	-1.958
TOTAL	Equal variances not assumed			-2.89	143.95	0.002	0.004	-5.5113	1.90817	-9.283	-1.7397

As demonstrated in Table 7, the standard deviations and means of cyber etiquette of prospective teachers of joint and nuclear families are (15.00229, 12.63500) and (152.9405, 158.4518), respectively. The desirability of the

equal variance assumed (0.102) is fit as it is non-significant. Further, the calculated value of the independent t-test (3.055) is noteworthy at <.001 "level of significance" for the degree of freedom of 248, as indicated in Table 8. Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of prospective teachers of joint and nuclear families", is rejected. Hence, it can be concluded that the mean (158.4518) of prospective teachers of nuclear families is significantly greater than the mean (152.9405) of prospective teachers of joint families. In other words, the family as a factor is an important factor in generating the difference in the cyber etiquettes of joint and nuclear families prospective teachers, which is in favour of prospective teachers of nuclear families.

Table-9: Cyber etiquettes of art, science, and commerce prospective teachers.

ANOVA

TOTAL

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	221.397	2	110.698	.588	.556
Within Groups	46494.603	247	188.237		
Total	46716.000	249			

Concerning Table 9, the computed value of analysis variance is 0.588 which is not significant at 0.01 "level of significance for the degree of freedom" of (2, 247). Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of art, science, and commerce prospective teachers", is accepted, which means that the cyber etiquettes of Art, Science, and Commerce prospective teachers are the same. Further, stream as a factor could not create a significant variance in the cyber etiquettes of the prospective teachers. Therefore, the stream is not important in explaining the cyber etiquettes of prospective teachers.

Table-10: Descriptive statistics of cyber etiquettes of social categories.

Descriptives

TOTAL

	N	Mean	"Std. Deviation"	"Std. Error"	"95% Confidence Interval for Mean"		Minimum	Maximum
					"Lower Bound"	"Upper Bound"		
General	112	159.9911	13.89957	1.31339	157.3885	162.5936	123.00	194.00
O.B.C	65	154.4000	13.11583	1.62682	151.1501	157.6499	129.00	182.00
S.C.	31	155.0323	11.01358	1.97810	150.9924	159.0721	131.00	177.00
S.T.	15	152.3333	10.32104	2.66488	146.6177	158.0489	134.00	173.00
E.W.S.	27	152.0000	15.94220	3.06808	145.6935	158.3065	118.00	184.00
Total	250	156.6000	13.69724	.86629	154.8938	158.3062	118.00	194.00

Table-11: Cyber etiquettes of General, SC, OBC, ST, and EWS prospective teachers

ANOVA				
	"Sum of Squares"	df	Mean Square	F
"Between Groups"	2523.108	4	630.777	3.497
"Within Groups"	44192.892	245	180.379	
Total	46716.000	249		

As indicated in Tables 10 and 11, the statistics provide evidence that the computed analysis of variance is 3.497, "which is significant at 0.01 level of significance for the degree of freedom" (4, 249). Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of general, SC, ST, OBC, and EWS prospective teachers", is rejected and concludes that the four groups of prospective teachers that were developed on the ground of five social categories like general, SC, ST, OBC, and EWS, are not the same in their cyber etiquette and differ significantly. The significant variation is noticed based on the social categories, which makes social categories an important factor in explaining the cyber etiquettes of the prospective- teachers.

Table-12: Post-ANOVA Tukey test of cyber etiquettes of General, SC, OBC, ST, and EWS prospective teachers

"Multiple Comparisons"							
						"95% Confidence Interval"	
	(I) Caste	(J) Caste	"Mean Difference (I-J)"	"Std. Error"	Sig.	"Lower Bound"	"Upper Bound"
Tukey HSD	General	O.B.C	5.59107	2.09418	.061	-.1642	11.3463
		S.C.	4.95881	2.72566	.365	-2.5318	12.4495
		S.T.	7.65774	3.69267	.235	-2.4905	17.8059
		E.W.S.	7.99107*	2.87945	**.046**	.0778	15.9044
	O.B.C	General	-5.59107	2.09418	.061	-11.3463	.1642
		S.C.	-.63226	2.93151	1.000	-8.6886	7.4241
		S.T.	2.06667	3.84712	.983	-8.5060	12.6393
		E.W.S.	2.40000	3.07502	.936	-6.0508	10.8508
	S.C.	General	-4.95881	2.72566	.365	-12.4495	2.5318
		O.B.C	.63226	2.93151	1.000	-7.4241	8.6886
		S.T.	2.69892	4.22421	.969	-8.9101	14.3079
		E.W.S.	3.03226	3.53545	.912	-6.6839	12.7484
	S.T.	General	-7.65774	3.69267	.235	-17.8059	2.4905
		O.B.C	-2.06667	3.84712	.983	-12.6393	8.5060
		S.C.	-2.69892	4.22421	.969	-14.3079	8.9101
		E.W.S.	.33333	4.32504	1.000	-11.5528	12.2194
	E.W.S.	General	-7.99107*	2.87945	.046	-15.9044	-.0778
		O.B.C	-2.40000	3.07502	.936	-10.8508	6.0508
		S.C.	-3.03226	3.53545	.912	-12.7484	6.6839
		S.T.	-.33333	4.32504	1.000	-12.2194	11.5528

It shows from multiple comparisons and outcomes of the post-ANOVA Tukey Test, as mentioned in Table 12, that cyber etiquette of different social categories such as general and OBC, general and SC, general and ST, OBC and SC, OBC and ST, OBC and EWS, SC and ST, SC and EWS, ST, and EWS are identical because the means of each category are not significantly greater from means of each other. In contrast, the mean of the cyber etiquettes of prospective teachers (159.9911) of the general category is significantly greater than the mean (152.0000) of the EWS category prospective teachers, which implies that general category perspective teachers have better cyber etiquettes than EWS category prospective teachers. Another important thing is to notice. Although the means of cyber etiquettes are proportional to increase higher as indicated in Table 10. However, it is only significant in the case of the general and EWS categories.

Table-13: Descriptive Statistics of cyber etiquettes of metro, urban, and rural prospective teachers

Descriptives								
	TOTAL							
					"95% Confidence Interval for Mean"			
	N	Mean	"Std. Deviation"	"Std. Error"	"Lower Bound"	"Upper Bound"	Minimum	Maximum
Metro	148	158.5608	13.74017	1.12943	156.3288	160.7928	125.00	194.00
Urban	67	154.6866	11.00580	1.34457	152.0020	157.3711	123.00	176.00
Rural	35	151.9714	16.63180	2.81129	146.2582	157.6847	118.00	187.00
Total	250	156.6000	13.69724	.86629	154.8938	158.3062	118.00	194.00

Table-14: Cyber etiquettes of metro, urban, and rural prospective teachers

ANOVA				
	"Sum of Squares"	df	"Mean Square"	F
"Between Groups"	1564.158	2	782.079	4.278
"Within Groups"	45151.842	247	182.801	
Total	46716.000	249		

It is noticed from Tables 13 and 14 that the determined value of analysis of variance is 4.278, which is "significant at 0.01 level of the significance for the degree freedom" (2, 247). Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of rural, urban, and metro prospective teachers", is rejected. This analysis indicates that the cyber etiquette of rural, urban, and metro prospective teachers is not the same, which implies that habitat is an important factor in explaining the cyber etiquette of prospective teachers because habitats create significant variation.

Table-15: Post-ANOVA Tukey test of Urban, Rural, and Metro prospective teachers

"Multiple Comparisons"							
						"95% Confidence Interval"	
	(I) Area	(J) Area	"Mean Difference (I-J)"	"Std. Error"	"Sig".	"Lower Bound"	"Upper Bound"
Tukey HSD	Metro	Urban	3.87424	1.99086	.128	-.8201	8.5685
		Rural	6.58938*	2.54126	.027	.5973	12.5815
	Urban	Metro	-3.87424	1.99086	.128	-8.5685	.8201
		Rural	2.71514	2.81980	.601	-3.9337	9.3640
	Rural	Metro	-6.58938*	2.54126	.027	-12.5815	-.5973
		Urban	-2.71514	2.81980	.601	-9.3640	3.9337

***. "The mean difference is significant at the 0.05 level".**

Concerning multiple comparisons post-ANOVA, the Tukey test was applied to detect significant variation among the means. The statistics, as reported in Table 15 that the cyber etiquettes of the prospective-teachers associated with metro and urban, urban, and rural were the same, as the means of these groups were not significantly greater than from each other. However, the mean value of rural (151.9714) prospective teachers was significantly less than the mean value of metro (158.5608) prospective teachers, which means that metro prospective teachers had better cyber etiquette than rural prospective teachers (refer to Tables 13 and 15). Hence, it can be concluded that habitat created a significant variance in the cyber etiquette of the prospective teachers, and it is important to explain cyber etiquette. In other words, It is noticed from Table 12 that the means from rural, urban to metro are proportional to increase, but variations in cyber etiquettes are important only for the prospective teachers of rural and metro areas.

Results

The following results are obtained:

- Prospective teachers neither possessed extremely high nor extremely low cyber etiquette. Maximum prospective teachers possessed a moderate level of cyber etiquette.
- Male prospective teachers had lower cyber etiquette than female prospective teachers. Therefore, the null hypothesis, "There is no significant difference in cyber etiquette of male and female prospective teachers", was rejected.
- Cyber etiquettes were found to be greater in prospective teachers of nuclear families than in joint families. Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of prospective teachers of joint and nuclear families", was rejected.
- In the background of streams like art, science, and commerce, prospective teachers found the same in their cyber etiquettes. Therefore, the null

hypothesis, "There is no significant difference in cyber etiquettes of art, science, and commerce prospective teachers", was retained.

- Based on different social categories like general, SC, ST, OBC, and EWS, prospective teachers were found to be significantly different in their cyber etiquettes. Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of general, SC, ST, OBC, EWS prospective teachers", was rejected. It was noticed from the group-wise comparison that general class prospective teachers possessed significantly greater cyber etiquettes than EWS prospective teachers, and the rest had similarities in their cyber etiquettes.
- Similarly, habitat also created variation in the cyber etiquettes of rural, urban, and metro prospective teachers. Therefore, the null hypothesis, "There is no significant difference in cyber etiquettes of rural, urban, and metro prospective teachers", is rejected. Metro prospective teachers possessed significantly better cyber etiquette than rural prospective teachers.

Conclusion

The analysis provides certain conclusions about the cyber etiquettes of prospective teachers. Gender, types of family, caste as a social category, and habitat are significant factors in explaining the cyber etiquettes of the prospective teachers because, based on these variables, there was significant variation noticed in the cyber etiquettes. However, based on academic streams like art, science, and commerce, no variation was found. Therefore, the stream is not an important factor in explaining the cyber etiquette of prospective teachers. Concerning the magnitude of the cyber etiquettes, the maximum prospective teachers had average-level cyber etiquettes, whereas very few prospective teachers possessed extremely high or extremely low cyber etiquettes.

Discussion

This study was carried out with the prime objective of exploring the cyber etiquettes of students- and teachers, and the findings provide great insights about the cyber etiquettes. Some research findings from the literature endorse the findings of this research, but on the other hand, some research is inconsistent with this research. It was found that female prospective teachers had better cyber etiquette than male prospective teachers. The probable reasons for such findings can be analyzed in the context of the accessibility of digital equipment, freedom, and opportunity for utilization and observation. In Indian society and culture, girls using mobile phones and being in cyberspace before marriage is seen as a risk factor. Due to such reasons, generally, not only family members but also known/nearest persons keep monitoring and vigilance about girls being in cyberspace, especially on social media. In addition, girls are expected to be more cultured and disciplined, whereas in the case of males, generally, they are less monitored and have more opportunity and time in cyberspace. Apart from this, males are more active users, as reported by (Näsi, Oksanen, Keipi, and Räsänen 2015). Hence, it may be the possible reason that all these factors cumulatively have made girls more conscious about cyber etiquette while they are in cyberspace. This research finding is inconsistent with the finding as reported by Mehmet and Teker (2017) that male and female pre-service teachers were the same in netiquette.

Similarly, Tarhan (2022) also reported that gender does not make any

difference. However, male participants had more digital ethics as investigated by (Gümüş, Çakır & Korkmaz, 2022; Yılmaz, Şahin, & Akbulut, 2016). Further, the prospective teachers of the nuclear family had much better cyber etiquette than the joint families. There may be a probable reason for such a finding: Due to nuclear families, parents are more conscious not only about the careers of their sons and daughters but also more vigilant about their mobile internet usage and the adverse outcomes of cybercrime. It may also be that parents have been giving constant feedback and training about Cybercrime and being more ethical in cyberspace.

Further, different streams like art, science, and commerce could not make a difference in the cyber etiquette of the prospective teachers. This finding has contradiction with the finding of Mehmet and Teker (2017) who investigated that foreign language pre-service teachers showed better netiquette behavior than literature and physics programs which means that stream is the significant factor in creating the variation in the cyber etiquettes of the prospective teachers. Looking into the average level of cyber etiquette, it is suggested that the feasibility of the inclusion of cyber etiquette in the syllabus of the teacher training program should be explored so that proper training may be provided to secure the better development of good cyber etiquettes among prospective teachers.

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