

A Dimension-Based Evaluation of Online Scam Awareness among College Students in Dindigul

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Abstract - The present study assessed the level of online scam awareness among 250 college students in Dindigul, selected through stratified sampling, using a validated scale covering five dimensions: Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours and Defensive Actions. Overall awareness was found to be above the average level. Students scored above the theoretical average in Capturing Knowledge and Risk Perception, but their scores in Privacy Concerns, Social Behaviours and Defensive Actions remained below average. In other words, students are able to recognise scams and judge the risks, yet this knowledge is not reflected in their actual online habits. Among the demographic variables studied, gender alone produced a significant difference in all five dimensions and in total, with female students showing greater awareness than male students. A few partial differences were also observed with respect to residence, daily internet usage time and attendance of cyber-safety training, while nativity, stream of study, type of institution, number of friends, mobile phone usage and internet access made no significant difference. The first hypothesis, that awareness is above the average level, was accepted; the second hypothesis of demographic neutrality was minimally accepted, since nine out of ten variables showed no significant difference overall. The study suggests that awareness programmes for college students should move beyond information-giving and concentrate on building privacy-protective and defensive online behaviour through continuous, practice-based training.

Keywords - Online Scam, Cybersecurity Behaviour, Risk Perception, Privacy Concerns, Defensive Actions

I. Introduction

Entering the world of internet and online technologies, the lives of college students have been altered very fast. The Internet dealings, social networks, and digital communications have become a standard practice. This further heavier use of online platforms has also exposed them to more risk of being deceived by scams present online. The latest crime data in the world reveal a steep increase in online fraud: in 2024, the total amount of money that U.S. consumers have lost to the online fraud-enabled crimes reached up to 16.6 billion (FBI, 2024). According to consumer-protection investigations, over \$3 billion in financial damage more particularly occurred because of scams that started off internet-based (FTC, 2024). The subject exists on a prevalent global level: 42 per cent of adults in the United Kingdom said they had been targeted by a scam within a year (Williams, 2023), and in Singapore, more than 90 per cent of all reported cases of cybercrime were scams (Tan, 2024).

The vulnerable population in this growing digital threat situation include college students. They have very little financial experience, are extremely dependent on online banking, e-commerce, social media, and mobile apps, which further predisposes them to the victimhood of phishing, fake marketplace listing, investment and cryptocurrency fraud, impersonation, and romance scams. Rajput (2024) In previous studies, it is demonstrated that students usually face the internet threats, although their awareness level tends to be moderate or low. They do not always use the preventive measures in cyber-safety, including checking the URLs, having two-factor authentication, or notify about suspicious messages (Kumar and Sharma, 2022). Also, the newer forms of deception such as AI-created impersonation and deepfake scams are not well understood by young users (Lopez and Chen, 2021). In terms of the increasing financial, psychological, and security threat associated with online fraud, it is high time and necessary to evaluate with college students their awareness of such a scam. The world



surveillance measures still register numerous cases of scam, which means that the scale might be much bigger as not all these cases are reported (IC3, 2024). The proposed research will focus on assessing the awareness of the students regarding the prevalent and novel types of scams, discussing their previous experiences related to attempts of being deceived, and the variables that may stimulate their better awareness and defensive action. The knowledge of these patterns will indicate whether current awareness rates are in line with existing risks that students go through in present digital world or not (FBI, 2024; FTC, 2024).

II. Literature Review

The article by Datar, Tejashree D., Cole, Kelly A., and Rogers, Marcus K. (2014) is entitled Awareness of Scam E-mails: An Exploratory Research Study. A study conducted by Purdue University, USA analyzed the ability of individuals to recognize scam emails and real ones and the cues that individuals utilize. It sought to identify the factors that predict improved scam detection including age, frequency of email use, and pre-awareness, the signals that a user uses, including sender credentials, generic greetings, money offers, and requests of personal or financial information and whether user self-reports of awareness predict detection of scams better. Abugri and Mereku (2024) The researchers used a questionnaire and a sample of 163 participants surveyed too, and four actual emails (two are scams, two are legitimate). Desai (2024) They determined that only common email usage showed significant predictive evidence of proper identification by using descriptive statistics and logistic regression, no longer any age or self-reported awareness. Only a small percentage of the participants identified any realistic branded phishing email and the percentage that identified all four correctly was also very low. This disparity between confidence and competence indicates that there is a need to measure performance-based activities to evaluate the use of online scams among college students.

Hamsaveni G (2025) undertook research on Awareness of Cybercrime Among College students: A Non-Doctrinal study. The study examines the effectiveness with which Indian college students are sensitized on cybercrime, particularly online scams despite the adoption of laws and other systems to report the same. It scales the knowledge of students, their indirect or direct victimization, and preventive behavior and consciousness of help-lines 1930 and cybercrime.gov.in portal and reveals discrepancies between knowledge and real-life safe behavior. The researcher employed a non-doctrinal and empirical research design that involved giving a structured survey through a Google Forms questionnaire with closed and mostly closed-ended questions to undergraduates and postgraduates. Frequencies, percentages, tables and charts were used to analyze data using descriptive statistics. A total of 150 students of different disciplines were chosen through the convenience sampling. The findings indicated that an approximate of 80 percent had heard of cybercrime but not many had direct exposure and those who had, underreported the crime. There was inconsistency in protective behaviors and only few always used two-factor authentication or changed passwords regularly, and others never checked or unchecked links, although they were aware of the official reporting procedures. The findings indicate the existence of a knowledge-practice gap and the necessity to conduct awareness campaigns, integration of curriculum, and use of student-focused awareness campaigns, which is why the study can be used in research on online scam awareness among college students.

III. Objectives Of The Study

1. To measure the level of Online Scam Awareness among College Students in Dindigul.
2. To measure the level of Online Scam Awareness with respect to the five dimensions involved in this study, viz., among College Students in Dindigul.

3. To find out whether there is a significant difference in Online Scam Awareness among College Students in terms of select demographic variables with respect to each of the five dimensions viz., Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions, and in-toto.

IV. Hypotheses Of The Study

1. Online Scam Awareness among College Students is above the average level.
2. Each of the demographic variables involved in this study does not exert a significant difference in the Online Scam Awareness among College Students in each of the five dimensions viz., Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions, and in-toto.

V. Research Design And Methodology Of The Study

This study utilized both primary and secondary data sources. Primary data were collected through a structured scale that was developed and validated based on specific dimensions. This scale served as the primary tool for gathering information from a stratified representative sample of 250 college students in Dindigul. The constructs were measured using a five-point Likert scale, ranging from "strongly disagree" (1) to "strongly agree" (5). For secondary data, the study reviewed previous research related to online scam awareness, as well as relevant newspapers, journals, and magazines.

VI. Analysis And Interpretations

Online Scam Awareness Among College Students

The empirical average score for online scam awareness among college students is 83.904, while the theoretical average is 72. This indicates that college students' awareness of online scams is above the average level.

In the dimension of Capturing Knowledge, the empirical average score is 23.436, compared to a theoretical average of 21. This shows that awareness in this area is also above average.

For the dimension of Risk Perception, the empirical average score is 21.492, while the theoretical average is 18, which again indicates above-average awareness among college students.

However, in the dimension of Privacy Concerns, the empirical average score is 9, whereas the theoretical average is 18. This means that awareness in this area is below the average level.

Similarly, in the dimension of Social Behaviours, the empirical average score is 12, compared to a theoretical average of 18. This indicates below-average awareness in social behaviours related to online scams.

Finally, in the dimension of Defensive Actions, the empirical average score is also 12, while the theoretical average is 18. This suggests that awareness regarding defensive actions against online scams is below average as well.

VII. Differential Studies

TABLE 1: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Gender-Wise

Variables	GENDER				‘t’ value	Significance at 0.05 level
	Male (N ₁ = 150)		Female (N ₂ =100)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	22.9267	5.2304	24.2000	4.6363	-2.020	Significant
Risk Perception	20.8667	3.9419	22.4300	3.8409	-3.120	Significant
Privacy Concerns	10.9600	2.2581	11.8700	2.1113	-3.246	Significant
Social Behaviors	13.6867	2.5858	14.6100	3.0974	-2.463	Significant
Defensive Actions	13.2600	3.3205	14.1000	3.1253	-2.030	Significant
In-toto	88.0533	11.1835	94.1300	11.9635	-4.038	Significant

It is evident from the above table that the calculated 't' values are found higher than the table value of 1.96 at 0.05 level of significance. This shows that there is a significant difference in Online Scam Awareness between the male students and female students in the five dimensions viz., Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions as well as in-toto.

It is further noted that Online Scam Awareness is found higher among female students than male students in the four dimensions viz., Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions as well as in-toto.

TABLE 2: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Nativity-Wise

Variables	NATIVITY				‘t’ value	Significance at 0.05 level
	RURAL (N1= 167)		URBAN (N2=83)			
	Mean	S.D	Mean	S. D		
Capturing Knowledge	23.6766	4.9749	22.9518	5.1369	1.062	Not Significant
Risk Perception	21.5150	3.9741	21.4458	3.9824	0.129	Not Significant
Privacy Concerns	11.3054	2.1972	11.3614	2.3404	-0.182	Not Significant

Social Behaviours	14.1018	2.8148	13.9639	2.8816	0.359	Not Significant
Defensive Actions	13.7485	3.4146	13.2892	2.9323	1.103	Not Significant
In-toto	90.7844	12.0921	89.8795	11.4246	0.578	Not Significant

It is evident from the above table that the calculated 't' values are found lesser than the table value of 1.96 at 0.05 level of significance. This shows that there is no significant difference in Online Scam Awareness between rural students and urban students in the five dimensions viz., Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions as well as in-toto.

TABLE 3: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Residence-Wise

Variables	RESIDENCE				‘t’ value	Significance at 0.05 level
	HOSTELLER (N1= 83)		DAY SCHOLAR (N2=167)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	22.9036	5.3296	23.7006	4.8700	-1.145	Not Significant
Risk Perception	22.1446	3.5720	21.1677	4.1241	1.932	Not Significant
Privacy Concerns	11.7470	1.9181	11.1138	2.3629	2.271	Significant
Social Behaviours	14.6747	2.6737	13.7485	2.8659	2.518	Significant
Defensive Actions	13.4337	3.5482	13.6766	3.1206	-0.530	Not Significant
In-toto	91.8072	12.4425	89.8263	11.5404	1.214	Not Significant

It is evident from the above table that the calculated 't' values are found lesser than the table value of 1.96 at 0.05 level of significance. This shows that there is no significant difference in Online Scam Awareness between the hosteller students and day scholar students in the dimension of Capturing Knowledge, Risk Perception, Defensive Actions as well as in-toto.

But it is observed, there is a significant difference between two groups in the remaining dimensions of Privacy Concerns, Social Behaviours. It is further noted that Online Scam Awareness is found higher among the hosteller students than day scholar students in the dimensions of Privacy Concerns, Social Behaviours.

TABLE 4: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Stream Of Study-Wise

Variables	STREAM OF STUDY				‘t’ value	Significance at 0.05 level
	ARTS (N1= 170)		SCIENCE (N2=80)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	23.5412	5.0794	23.2125	4.9496	0.486	Not Significant
Risk Perception	21.5059	4.0048	21.4625	3.9166	0.081	Not Significant
Privacy Concerns	11.4118	2.2468	11.1375	2.2317	0.904	Not Significant
Social Behaviours	14.1353	2.9168	13.8875	2.6528	0.667	Not Significant
Defensive Actions	13.6824	3.3766	13.4125	3.0218	0.634	Not Significant
In-toto	90.9471	12.1793	89.5000	11.1594	0.928	Not Significant

It is evident from the above table that the calculated 't' values are found lesser than the table value of 1.96 at 0.05 level of significance. This shows that there is no significant difference in Online Scam Awareness between the Arts students and Science students in the dimension of Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions as well as in-toto.

TABLE 5: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Type Of Institution-Wise

Variables	TYPE OF INSTITUTION				‘t’ value	Significance at 0.05 level
	PRIVATE (N1= 158)		GOVERNMENT (N2=92)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	23.5759	4.8471	23.1957	5.3498	0.561	Not Significant
Risk Perception	21.5380	4.0845	21.4130	3.7829	0.244	Not Significant
Privacy Concerns	11.4810	2.0834	11.0543	2.4779	1.390	Not Significant
Social Behaviours	14.1456	2.9058	13.9022	2.7096	0.667	Not Significant

Defensive Actions	13.7278	3.2155	13.3696	3.3503	0.828	Not Significant
In-toto	91.0949	11.7954	89.4348	11.9599	1.064	Not Significant

It is evident from the above table that the calculated 't' values are found lesser than the table value of 1.96 at 0.05 level of significance. This shows that there is no significant difference in Online Scam Awareness between the private institution students and government institution students in the dimension of Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions as well as in-toto.

TABLE 6: Statistical Measures And Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Number Of Friends -Wise

Variables	NUMBER OF FRIENDS				‘t’ value	Significance at 0.05 level
	LESS THAN 3 (N ₁ = 66)		3 & ABOVE (N ₂ =184)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	22.6970	5.3117	23.7011	4.9138	-1.343	Not Significant
Risk Perception	21.1970	3.9893	21.5978	3.9672	-0.701	Not Significant
Privacy Concerns	10.9545	2.1586	11.4565	2.2612	-1.600	Not Significant
Social Behaviours	14.1364	2.8224	14.0272	2.8427	0.269	Not Significant
Defensive Actions	12.9091	3.5070	13.8424	3.1453	-1.905	Not Significant
In-toto	88.3636	11.8758	91.2446	11.7928	-1.694	Not Significant

The table clearly shows that the calculated 't' values are lower than the critical value of 1.96 at the 0.05 level of significance. This indicates that there is no significant difference in Online Scam Awareness between students with fewer than 3 friends and those with 3 or more friends in the areas of Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions, and overall awareness.

TABLE 7: Statistical Measures And The Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Mobile Phone Usage- Wise

Variables	MOBILE PHONE USAGE				‘t’ value	Significance at 0.05 level
	YES (N1= 138)		NO (N2=112)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	23.5072	5.1888	23.3482	4.8504	0.250	Not Significant
Risk Perception	21.4203	3.9073	21.5804	4.0595	-0.315	Not Significant
Privacy Concerns	11.3188	2.2507	11.3304	2.2396	-0.040	Not Significant
Social Behaviours	14.0362	2.8806	14.0804	2.7839	-0.123	Not Significant
Defensive Actions	13.4928	3.3248	13.7232	3.1969	-0.557	Not Significant
In-toto	90.4420	11.8629	90.5357	11.9080	-0.062	Not Significant

The table above clearly indicates that the calculated 't' values are lower than the critical value of 1.96 at the 0.05 significance level. This suggests that there is no significant difference in Online Scam Awareness between students who use mobile phones and those who do not across several dimensions, including Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions, and overall awareness.

TABLE 8: Statistical Measures And The Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Internet Access- Wise

Variables	INTERNET ACCESS				‘t’ value	Significance at 0.05 level
	YES (N1= 115)		NO (N2=135)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	23.7217	5.2894	23.1926	4.8059	0.822	Not Significant
Risk Perception	21.2261	3.8207	21.7185	4.0916	-0.983	Not Significant
Privacy Concerns	11.1913	2.2159	11.4370	2.2641	-0.865	Not Significant
Social Behaviours	14.0348	2.6389	14.0741	2.9966	-0.110	Not Significant

Defensive Actions	13.6087	3.3865	13.5852	3.1679	0.056	Not Significant
In-toto	89.8870	11.0078	90.9926	12.5576	-0.742	Not Significant

The table clearly indicates that the calculated 't' values are lower than the critical value of 1.96 at the 0.05 level of significance. This suggests that there is no significant difference in Online Scam Awareness between students with internet access and those without, across the dimensions of Capturing Knowledge, Risk Perception, Privacy Concerns, Social Behaviours, Defensive Actions, and overall awareness.

TABLE 9: Statistical Measures And The Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Daily Internet Usage Time – Wise

Variables	DAILY INTERNET USAGE TIME				‘t’ value	Significance at 0.05 level
	LESS THAN 2 HRS (N ₁ = 122)		2 HRS AND ABOVE (N ₂ =128)			
	Mean	S.D	Mean	S.D		
Capturing Knowledge	23.9918	4.3093	22.9063	5.5987	1.723	Not Significant
Risk Perception	21.0820	4.3401	21.8828	3.5530	-1.592	Not Significant
Privacy Concerns	11.4836	2.4231	11.1719	2.0509	1.095	Not Significant
Social Behaviours	14.1803	3.1439	13.9375	2.5059	0.673	Not Significant
Defensive Actions	14.1148	3.1074	13.1016	3.3434	2.483	Significant
In-toto	91.4426	12.3195	89.5703	11.3766	1.247	Not Significant

The table clearly indicates that the calculated 't' values are less than the critical value of 1.96 at the 0.05 level of significance. This suggests that there is no significant difference in Online Scam Awareness between individuals who use the internet for less than 2 hours daily and those who use it for 2 hours or more. This lack of difference is observed across various dimensions, including Capturing Knowledge, Risk Perception, Privacy Concerns, and Social Behaviours, as well as in total.

However, a significant difference is noted in the dimension of Defensive Actions. Specifically, Online Scam Awareness is found to be higher among students who spend less than 2 hours online each day compared to those who spend 2 hours or more in this dimension.

TABLE 10: Statistical Measures And The Results Of Test Of Significance Of Difference Between The Mean Scores Of Online Scam Awareness: Attended Cyber Safety Training - Wise

Variables	ATTENDED CYBER SAFETY TRAINING				‘t’ value	Significance at 0.05 level
	YES (N1= 62)		NO (N2=188)			
	Mean	S.D	Mean	S.D		

Capturing Knowledge	23.8548	5.8333	23.2979	4.7456	0.681	Not Significant
Risk Perception	21.0806	4.3544	21.6277	3.8362	-0.883	Not Significant
Privacy Concerns	10.7581	2.4674	11.5106	2.1357	-2.151	Significant
Social Behaviours	13.2419	2.2520	14.3245	2.9553	-3.023	Significant
Defensive Actions	13.5806	3.6778	13.6011	3.1258	-0.039	Not Significant
In-toto	88.8548	10.9213	91.0213	12.1325	-1.317	Not Significant

The table above indicates that the calculated 't' values are lower than the critical value of 1.96 at the 0.05 level of significance. This suggests there is no significant difference in Online Scam Awareness between students who attended cyber safety training and those who did not, specifically in the dimensions of Capturing Knowledge, Risk Perception, Defensive Actions, and overall.

However, a significant difference was observed between the two groups in the dimensions of Privacy Concerns and Social Behaviours. Notably, students who did not attend cyber safety training exhibited higher levels of Online Scam Awareness in both Privacy Concerns and Social Behaviours compared to those who participated in the training.

VIII. Hypotheses Verification

Hypothesis 1

“Online Scam Awareness among College Students is above the average level.”

The Awareness of online scam among college students is **above the average level**. Hence, the **hypothesis is accepted**.

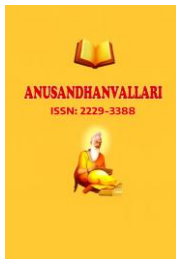
Hypothesis 2

“Each of the demographic variables involved in this study does not exerts a significant difference in the Online Scam Awareness among college students”.

Out of ten variables associated with this study nine variables did not show significant differences in the Online Scam Awareness. Hence, the null hypothesis is minimally accepted.

IX. Discussion

Students do not apply their knowledge in relation to online scams despite the fact they have a sound knowledge of the scams. The fact that they scored high at Capturing Knowledge and Risk Perception means that they are able to recognize various forms of scams and evaluate the risk associated with them. This is in line with the previous studies that revealed students to be cognitively conscious but mostly inactive concerning the knowledge (Hamsaveni, 2025). But the low score in Privacy Concerns, Social Behaviours and Defensive Actions indicates that one has not been cautious regarding sharing personal information, and internet communication as well as taking poor precautionary safety norms. The gap in knowledge is also representative of the trends in other researches where students comprehend the theory but fail to turn it into preventive behaviour (Datar et al., 2014; Kumar and Sharma, 2022).



The difference between gender reveals that females are more aware, which is probably explained by their increased caution and the sense of vulnerability on the Internet as per cyber-safety literature. On the other hand, there is no notable difference between such variables like nativity, study stream, and institution type, as well as mobile/internet use, which means that online experience and risk of being scammed are common among various groups. Interestingly, cyber-safety training itself does not seem to make a large impact in terms of make students aware of the matter; in some aspects, students who have not undergone cyber-safety training also perform better. This could be evidence of shallow training, training that is stale or simply inefficient training.

Altogether, the results highlight that in spite of the fact that students already have the basic understanding to identify the signs of threats on the internet, they need to undergo behavioural interventions on a continual basis, consistent training, as well as real-life simulations to develop safer behaviour on the internet.

X. Conclusion

The research concludes that college students in Dindigul have above average general awareness of online frauds and this is particularly with respect to the type of scams and awareness of related risks. Their poor performance in Privacy Concerns, Social Behaviours and Defensive Actions point at the lapses in behavioural and practical online-safety skills. Gender is of great importance; female students are more conscious in all aspects. Demographic factors, including the nativity, residence, stream, and institution type and the usage of the internet do not have any significant effects on the level of awareness, and thus online scams vulnerability is relatively consistent among college students. The partially accepted second hypothesis emphasizes the fact that only in the circumstances of relevance interventions should be demographic sensitive, but also emphasizes on the necessity of the universality of better online-safety education. Proactive defence measures and privacy maintaining behaviours should also be strengthened in order to protect students against the emerging digital scams.

XI. Scope Of Future Research

This study offers a number of directions for further investigation into online scam awareness:

1. Future studies can include students from more areas to compare awareness levels in different places.
2. Researchers can talk directly with students through interviews or group discussions to understand their real experiences with online scams.
3. Studies can check whether cyber-safety training actually helps students stay safer online.
4. New awareness programmes or activities like workshops or scam-simulation exercises can be created and tested.
5. Future research can explore how students' behaviour, confidence, and decision-making affect their chances of falling for online scams.

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