

AWARENESS OF COMMERCE POST GRADUATE STUDENTS ON CYBER CRIME AND CYBER SECURITY IN COIMBATORE DISTRICT

ABSTRACT

Aim -Internet consumption a growingly significant aspect of modern life. Everyone depends heavily on the internet, which opens up more opportunities for cybercrime. In the current environment, cybercrime is becoming a very serious problem. The internet becomes a staple in our life because it provides us joy and happiness, but it can also be a nightmare. Cybercriminals utilize many different methods to defraud people. Everyone is becoming an expert in the cyber world, from businesspeople to government officials, high school kids to college students, and adults to elders. Researchers want to know how college students feel about being aware of cybercrime and cyber security so they are looking into that.

Study design -This study focuses on identifying the awareness level among the commerce post graduate students on cyber crime and cyber security.

Methodology -The study has been conducted based on census method taking M. Com students from University in Coimbatore district to analyzing their level of awareness using descriptive statistics and Anova to check the difference with respect to their demographics.

Conclusion The results help us know that there is difference with some of the factors in case of cyber crime and some of the factors in cyber security while considering their demographic profile.

Keywords: Cybercrime, Crime Security, Post graduate students, Awareness level, Difference.

INTRODUCTION

Although the digitalization of the world has many more benefits, it has also created a two-edged sword that poses both a threat and a benefit, which has had some negative effects on people. India has embraced digitalization on all fronts as a strong nation. This cyber realm has long posed a hazard, potentially harming users' security and finances by gaining access to their personal data. Cybercrime is a today based scenario which causes severe loss to the victim which is taking place using internet. it orders to prevent such crimes and threat the cyber space has developed cyber security measures which gives

various safety measures in safe guarding the personal space of an individual. With the help of (I4C) of (Ministry of Home Affairs) cyber security antiquated developed.

REVIEW OF LITERATURE

Goel (2014) survey have been made on 120 B.Ed. undergraduates in the Sonipat region based on gender differences, the stream they were enrolled in—arts or science—and their place of residence—rural versus urban. According to the study's findings, streams and location have a bigger impact on cybercrime knowledge than gender does.

Prabhu (2015), In a study on students' knowledge of cybercrime conducted by the researchers found no discernible differences in students' awareness of cybercrime based on their stream of study.

Senthilkumar and Easwaramoorthy (2017) Students of (Tamil Nadu), have been taken to a survey on "Cyber Security awareness." An online survey questionnaire is employed in this study to collect data. By taking into account, the level of pupils' overall understanding of cyber security.

Spring Neetu (2018) a considerable variance between gender of pupils' awareness of cybercrime. Male have high awareness on cybercrime female students, according to survey.

Kumaravelu (2018) The awareness of cybercrime between different gender students and among pupils in rural and urban areas differs significantly. Men students were found to have a greater awareness on cybercrime than Women students, further urban pupils have huge awareness on cybercrime than rural pupils, according to the study.

Kumar Rajender (2020) The awareness of cybercrime among male, female pupil and different locality pupils shows a significant difference. Male and urban pupils show higher levels of mindfulness of digital misconduct

STATEMENT OF THE PROBLEM

Increasing technological development as well as advancement have paved way for the cybercrime which is an unlawful act which either targets the internet and computer. Apart from this there are cyber wars and cyber terrorism which is beaming in the global scenario. The increasing level of crimes through cyberspace is because of lack of awareness and understanding the issues associated with the internet form of threat which is leading to the cyber-attacks and threat. This study aims to focus on the young population in society in analyzing their awareness towards cybercrime and cyber security measures. the paper examines the awareness level based on the demographic factors which determines their understanding on cyber space which becomes necessary for the entire nation in preventing the threat.

The above problem is discussed using research questions:

- Are the post graduate students under commerce stream aware about the cybercrime and cyber space?
- If yes this there any difference among the students based their demographic factors?

AIM AND PURPOSE

- To analyze the level of awareness among Post Graduate students of commerce stream on cybercrime and cyber security in Coimbatore district based on demographic factor

HYPOTHESIS

- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Gender.
- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Course of Study
- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Year of Study.
- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Gender.
- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Course of Study
- There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Year of Study.

RESEARCH METHODOLOGY

The study is empirical in nature.

DATA AND MEASURES

Analysis is depending on Key (Primary) and Central (Secondary) references of data. Key information is accumulated using Questionnaire specially designed for the analysis. Central information is accumulated from Official website of (Ministry of Electronics and Information Technology), (Government of India), National Crime Records Bureau and also from various books and journals.

SAMPLING DESIGN

Census methodology is adopted to gather the information from 178 respondents Coimbatore District.

TOOLS FOR ANALYSIS

The data used for the tools are Reliability analysis, Validity Analysis and Anova.

INFERENCE AND ANATOMY

Table – 1 Enumeration of Participant Profile

| Elements | Variable | Number of Participants |
|-----------------|--|------------------------|
| Gender | Male | 52 |
| | Female | 126 |
| Age | 18-25 | 176 |
| | 25-30 | 2 |
| Course of Study | M.Com (Finance and Computer Application) | 52 |

| | | |
|---------------|--------------------------------|-----|
| | M.Com (Finance and Accounting) | 70 |
| | M.Com (Financial Technology) | 56 |
| Year of Study | I year | 76 |
| | II year | 152 |

The features of the participants are broken down in the table. The bulk of respondents—126, or 70.78 percent—are female, and 99.8 percent of them are younger than the age of 18–25. At 70, 39.32 percent of them are working towards their M. Com. (Finance and Accounting) degree. Additionally, their pursuit under the second year of study at 152 at 85.39 percent.

Table 2 Reliability Analysis for the Awareness level of Post Graduate Students on Cyber Crime and Cyber Security in Coimbatore District

| Reliability Statistics | |
|------------------------|------------|
| Cronbach's Alpha | N of Items |
| .891 | 11 |

Source: computed using spss

The Cronbach's alpha value of .891 is higher than the needed value, demonstrating good consistency among the items and the validity of the instruments created for the study. All variables are trustworthy and appropriate, it can be said.

Table 3 KMO and Bartlett Test for Goodness of Fit Awareness level of Post Graduate Students on Cyber Crime and Cyber Security in Coimbatore District

| KMO and Bartlett's Test | | |
|--|--------------------|-------------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | .850 | |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 1033.597 |
| | df | 55 |
| | Sig. | .000 |

Source: computed using spss

KMO statistic value is above .850, according to the table. it exceeds the threshold 0.5. The size of the sampling is sufficient for factor analysis, and Bartlett's test for sphericity yields a significant result of .000 that justifies running additional tests.

Table 4 Descriptive statistics for the Awareness level of Post Graduate Students on Cyber Crime in Coimbatore District

| Descriptive Statistics | | | |
|------------------------|-----|-------------|----------------|
| | N | Mean | Std. Deviation |
| Malware Attack | 178 | 2.38 | 1.203 |
| SQL Injection Attack | 178 | 2.90 | 1.434 |
| Website Spoofing | 178 | 2.12 | 1.175 |
| Ransomware | 178 | 2.91 | 1.367 |
| IOT hacking | 178 | 2.22 | 1.172 |

Source: computed using spss

The table displays descriptive statistics for the district of Coimbatore's postgraduate students' knowledge of cybercrime and cybersecurity. The SQL Injection Attack and the Ransomware Attack had the highest mean values, respectively, at 2.90 and 2.91.

Table 5 Descriptive statistics for the Awareness level of Post Graduate Students on Cyber Security in Coimbatore District

| Descriptive Statistics | | | |
|------------------------------|-----|-------------|----------------|
| | N | Mean | Std. Deviation |
| Cloud security | 178 | 1.75 | .966 |
| End Point Security | 178 | 2.52 | 1.294 |
| Mobile security | 178 | 1.73 | .820 |
| IoT Security Password Attack | 178 | 2.04 | 1.124 |
| Application Security | 178 | 2.06 | 1.158 |
| Zero Trust Security | 178 | 2.83 | 1.338 |

Source: computed using spss

The table presents descriptive statistics regarding postgraduate students' understanding of cybersecurity and cybercrime in the Coimbatore district. The highest mean values were for End Point Security and Zero Trust, with 2.52 and 2.83, respectively.

H_{01} = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Gender

Table 6 Test of Difference in the Awareness level on Cybercrime of post graduate students in Coimbatore district based on Gender

| ANOVA | | | | | | |
|-----------------------------|----------------|----------------|-----|-------------|-------|------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Malware Attack | Between Groups | 3.825 | 1 | 3.825 | 2.669 | .104 |
| | Within Groups | 252.198 | 176 | 1.433 | | |
| | Total | 256.022 | 177 | | | |
| SQL Injection Attack | Between Groups | .288 | 1 | .288 | .140 | .709 |
| | Within Groups | 363.891 | 176 | 2.068 | | |
| | Total | 364.180 | 177 | | | |
| Website Spoofing | Between Groups | .464 | 1 | .464 | .335 | .563 |
| | Within Groups | 244.058 | 176 | 1.387 | | |

| | | | | | | |
|-------------|----------------|---------|-----|-------|-------|------|
| | Total | 244.522 | 177 | | | |
| Ransomware | Between Groups | .301 | 1 | .301 | .160 | .690 |
| | Within Groups | 330.261 | 176 | 1.876 | | |
| | Total | 330.562 | 177 | | | |
| IOT hacking | Between Groups | 1.878 | 1 | 1.878 | 1.371 | .243 |
| | Within Groups | 241.133 | 176 | 1.370 | | |
| | Total | 243.011 | 177 | | | |

Source: computed using spss

The table displays the findings of a one-way ANOVA that compared postgraduate students in the Coimbatore district's gender to their awareness of cybercrime. Regarding awareness of cybercrime, the significant value is more than 0.05 for all the factors. Since there is no discernible difference between postgraduate students in the Coimbatore district's gender and their awareness of cybercrime, the hypothesis is accepted.

H_{02} = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Course of Study

Table 7 Test of Difference in the Awareness level on Cybercrime of post graduate students in Coimbatore district based on Course of the study

| | | ANOVA | | | | |
|----------------------|----------------|----------------|-----|-------------|-------|-------------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Malware Attack | Between Groups | 11.027 | 2 | 5.513 | 3.938 | .021 |
| | Within Groups | 244.996 | 175 | 1.400 | | |
| | Total | 256.022 | 177 | | | |
| SQL Injection Attack | Between Groups | 8.896 | 2 | 4.448 | 2.191 | .115 |
| | Within Groups | 355.284 | 175 | 2.030 | | |
| | Total | 364.180 | 177 | | | |
| Website Spoofing | Between Groups | 2.830 | 2 | 1.415 | 1.025 | .361 |
| | Within Groups | 241.692 | 175 | 1.381 | | |
| | Total | 244.522 | 177 | | | |
| Ransomware | Between Groups | .307 | 2 | .153 | .081 | .922 |
| | Within Groups | 330.255 | 175 | 1.887 | | |
| | Total | 330.562 | 177 | | | |
| IOT hacking | Between Groups | 10.789 | 2 | 5.395 | 4.065 | .019 |
| | Within Groups | 232.222 | 175 | 1.327 | | |
| | Total | 243.011 | 177 | | | |

Source: computed using spss

The one-way ANOVA that compares course of study of postgraduate students in the Coimbatore district to their knowledge of cybercrime are shown in the table. For elements like a SQL Injection Attack,

website spoofing, and ransomware, the significant value for awareness of cybercrime is above 0.05. The tentative statement is taken up as result since no appreciable difference between the postgraduate students' awareness of cybercrime and their course of study in the Coimbatore district is found. Malware attack and IOT hacking, however, have significant values below 0.05, which implies the tentative statement is disapproved and stated that student differences in cybercrime depend on their chosen academic path.

H0₃ = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cybercrime in Coimbatore district based on Year of Study

Table 8 Test of Difference in the Awareness level on Cybercrime of post graduate students in Coimbatore district based on Year of the study

| ANOVA | | | | | | |
|-----------------------------|----------------|----------------|-----|-------------|-------|-------------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Malware Attack | Between Groups | 7.412 | 1 | 7.412 | 5.247 | .023 |
| | Within Groups | 248.611 | 176 | 1.413 | | |
| | Total | 256.022 | 177 | | | |
| SQL Injection Attack | Between Groups | 3.135 | 1 | 3.135 | 1.528 | .218 |
| | Within Groups | 361.044 | 176 | 2.051 | | |
| | Total | 364.180 | 177 | | | |
| Website Spoofing | Between Groups | .000 | 1 | .000 | .000 | .997 |
| | Within Groups | 244.522 | 176 | 1.389 | | |
| | Total | 244.522 | 177 | | | |
| Ransomware | Between Groups | 11.969 | 1 | 11.969 | 6.612 | .011 |
| | Within Groups | 318.592 | 176 | 1.810 | | |
| | Total | 330.562 | 177 | | | |
| IOT hacking | Between Groups | 2.739 | 1 | 2.739 | 2.006 | .158 |
| | Within Groups | 240.272 | 176 | 1.365 | | |
| | Total | 243.011 | 177 | | | |

Source: computed using spss

The table displays the findings of a one-way ANOVA that related postgraduate students' knowledge of cybercrime to their year of the study in the Coimbatore district. For components like a SQL Injection Attack, website spoofing, and IOT hacking, the significant value for awareness of cybercrime is more than 0.05. Since there is no discernible relationship between the Coimbatore district postgraduate students' awareness of cybercrime and their degree of study, the tentative statement is the taken up for conclusion. It is determined that student disparities in cybercrime depend on their selected academic path because Malware attack and Ransomware, on the other hand, have significant values below 0.05, indicating the tentative statement is rejected.

H0₄ = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Gender

Table 9 Test of Difference in the Awareness level on Cyber security of post graduate students in Coimbatore district based on Gender

| ANOVA | | | | | | |
|-------|--|--|--|--|--|--|
|-------|--|--|--|--|--|--|

| | | Sum of Squares | df | Mean Square | F | Sig. |
|-------------------------------------|----------------|----------------|-----|-------------|-------|------|
| Cloud security | Between Groups | .036 | 1 | .036 | .038 | .846 |
| | Within Groups | 165.088 | 176 | .938 | | |
| | Total | 165.124 | 177 | | | |
| End Point Security | Between Groups | 4.679 | 1 | 4.679 | 2.822 | .095 |
| | Within Groups | 291.770 | 176 | 1.658 | | |
| | Total | 296.449 | 177 | | | |
| Mobile security | Between Groups | .985 | 1 | .985 | 1.469 | .227 |
| | Within Groups | 118.071 | 176 | .671 | | |
| | Total | 119.056 | 177 | | | |
| IoT Security Password Attack | Between Groups | 2.537 | 1 | 2.537 | 2.019 | .157 |
| | Within Groups | 221.104 | 176 | 1.256 | | |
| | Total | 223.640 | 177 | | | |
| Application Security | Between Groups | .257 | 1 | .257 | .191 | .663 |
| | Within Groups | 237.181 | 176 | 1.348 | | |
| | Total | 237.438 | 177 | | | |
| Zero Trust Security | Between Groups | 1.243 | 1 | 1.243 | .693 | .406 |
| | Within Groups | 315.701 | 176 | 1.794 | | |
| | Total | 316.944 | 177 | | | |

Source: computed using spss

The table displays the findings of a one-way ANOVA that compared postgraduate students in the Coimbatore district's gender to their awareness of cyber security. Regarding awareness of cyber security, the significant value is more than 0.05 for all the factors. Since there is no discernible difference between postgraduate students in the Coimbatore district's gender and their awareness of cyber security, the tentative statement is taken up for conclusion.

H_{05} = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Course of Study

Table 10 Test of Difference in the Awareness level on Cyber security of post graduate students in Coimbatore district based on Course of Study

| ANOVA | | | | | | |
|---------------------------|----------------|----------------|-----|-------------|-------|-------------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Cloud security | Between Groups | 12.226 | 2 | 6.113 | 6.997 | .001 |
| | Within Groups | 152.898 | 175 | .874 | | |
| | Total | 165.124 | 177 | | | |
| End Point Security | Between Groups | 2.442 | 2 | 1.221 | .727 | .485 |
| | Within Groups | 294.008 | 175 | 1.680 | | |
| | Total | 296.449 | 177 | | | |
| Mobile security | Between Groups | 2.135 | 2 | 1.068 | 1.598 | .205 |

| | | | | | | |
|-------------------------------------|----------------|---------|-----|--------|-------|-------------|
| | Within Groups | 116.921 | 175 | .668 | | |
| | Total | 119.056 | 177 | | | |
| IoT Security Password Attack | Between Groups | 13.071 | 2 | 6.536 | 5.432 | .005 |
| | Within Groups | 210.569 | 175 | 1.203 | | |
| | Total | 223.640 | 177 | | | |
| Application Security | Between Groups | 6.061 | 2 | 3.031 | 2.292 | .104 |
| | Within Groups | 231.377 | 175 | 1.322 | | |
| | Total | 237.438 | 177 | | | |
| Zero Trust Security | Between Groups | 23.836 | 2 | 11.918 | 7.116 | .001 |
| | Within Groups | 293.108 | 175 | 1.675 | | |
| | Total | 316.944 | 177 | | | |

Source: computed using spss

The table displays the findings of a one-way ANOVA that examined postgraduate students' courses of study and their understanding of cyber security in the Coimbatore district. The significant value for cyber security awareness is greater than 0.05 for components like End point security, mobile security and application security. Since there is no discernible difference between the postgraduate students' knowledge of cyber security and their course of study in the Coimbatore district, the tentative statement is the taken up conclusion. It is found that student disparities in cyber security depend on their selected academic path because cloud security, IOT security password attack, and zero trust security all have significant values below 0.05, indicating that the null hypothesis is rejected.

H_{06} = There is no significant difference in the level of awareness among Post Graduate students of commerce stream on cyber security in Coimbatore district based on Gender

Table 11 Test of Difference in the Awareness level on Cyber security of post graduate students in Coimbatore district based on Year of Study

| ANOVA | | | | | | |
|-------------------------------------|----------------|----------------|-----|-------------|-------|-------------|
| | | Sum of Squares | df | Mean Square | F | Sig. |
| Cloud security | Between Groups | 1.773 | 1 | 1.773 | 1.910 | .169 |
| | Within Groups | 163.351 | 176 | .928 | | |
| | Total | 165.124 | 177 | | | |
| End Point Security | Between Groups | 2.638 | 1 | 2.638 | 1.580 | .210 |
| | Within Groups | 293.811 | 176 | 1.669 | | |
| | Total | 296.449 | 177 | | | |
| Mobile security | Between Groups | 3.585 | 1 | 3.585 | 5.464 | .021 |
| | Within Groups | 115.472 | 176 | .656 | | |
| | Total | 119.056 | 177 | | | |
| IoT Security Password Attack | Between Groups | 7.930 | 1 | 7.930 | 6.471 | .012 |
| | Within Groups | 215.710 | 176 | 1.226 | | |
| | Total | 223.640 | 177 | | | |
| Application Security | Between Groups | 1.372 | 1 | 1.372 | 1.023 | .313 |
| | Within Groups | 236.066 | 176 | 1.341 | | |
| | Total | 237.438 | 177 | | | |

| | | | | | | |
|----------------------------|----------------|---------|-----|-------|------|------|
| Zero Trust Security | Between Groups | 1.782 | 1 | 1.782 | .995 | .320 |
| | Within Groups | 315.162 | 176 | 1.791 | | |
| | Total | 316.944 | 177 | | | |

Source: computed using spss

The one-way ANOVA that linked Coimbatore district postgraduate students' understanding of cyber security to their year of study. The significant value for cyber security awareness is greater than 0.05 for components like Cloud security, End point security, Application security, and Zero Trust Security. The tentative statement is the taken up result because there is no obvious correlation between the Coimbatore district postgraduate students' awareness of cyber security and their year of study. Because mobile security and IOT security password attacks, on the other hand, have significant values below 0.05, suggesting the tentative statement is refused, it is found that student differences in cyber security rely on their chosen academic path.

FINDINGS OF THE STUDY

- The highest mean values were 2.90 and 2.91 for the SQL Injection and Ransomware Attacks, respectively.
- With 2.52 and 2.83, respectively, the highest mean scores were for End Point Security and Zero Trust.
- The agreed conclusion is no noticeable gender difference in the awareness of cybercrime among postgraduate students in the Coimbatore district.
- Postgraduate students and their programme of study in the Coimbatore district do not differ significantly from one another.
- According on their selected academic career, student differs in cybercrime.
- Because Ransomware and Malware attacks, on the other hand, have substantial values below, it is established that student inequalities in cybercrime rely on their chosen academic path.
- The postgraduate students' expertise of cyber security and their programme of study in the Coimbatore district are same.
- Because cloud security, IOT security password attack, and zero trust security all have major values, it has been discovered that student differences in cyber security depend on the academic path they have chosen.
- The postgraduate students in the Coimbatore district's knowledge of cyber security and their year of study don't seem to be related in any clear way.
- It is discovered that student disparities in cyber security depend on their selected academic path since mobile security and IOT security password attacks, on the other hand, have substantial values.
- There is no noticeable distinction between

SUGGESTIONS OF THE STUDY

- Government can increase the initiation through boosting social media awareness.
- Make Informational Pamphlets which can reach out the public.
- Government should focus on entire population of the country to make sure the cyber security measures are reaching out to all the citizens of the society.

- Government may use local language make more easier to reach out the citizenry.
- Government may use both personnel and non-personnel medium of communication.

CONCLUSION

The increased use of technology year by year which is mostly impacting women and children, through the cyber threat an alarming issue faced by most of the people in society. even though the government is taking measures to enhance the cyber security, there is lack of awareness and understanding regarding the cyberspace which is still a drawback to attain the utmost safety from the cybercrime. hence the study is focusing on the level of awareness among Post Graduate students of commerce stream on cybercrime and cyber security in Coimbatore district based on demographic factors has made us understand that students are aware but not completely aware on cybercrime and cyber security, it shows the importance of conducting awareness and recognition among young population to avoid the further out break.

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