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Cybersecurity Awareness among University Students: A Case Study of KBC North Maharashtra University

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Abstract :

In the digital era, cybersecurity awareness is crucial for protecting sensitive information and ensuring safe online practices, particularly among university students who extensively use digital resources for academic and personal purposes. This study examines the level of cybersecurity awareness among undergraduate (UG) and postgraduate (PG) students at KBC North Maharashtra University, Jalgaon. Using a survey method, data were collected from 100 students through a structured questionnaire. The study investigates differences in cybersecurity awareness based on academic level, gender, and rural-urban backgrounds. Statistical analyses, including t-tests, revealed significant differences in awareness between UG and PG students, but no significant differences based on gender or rural-urban background. Key findings indicate that while students have basic awareness, gaps exist in understanding specific threats like phishing and secure password practices. Recommendations include implementing mandatory cybersecurity training and workshops to enhance awareness.

Keywords : Cybersecurity Awareness, University Students, Digital Safety, Phishing, Password Security, Higher Education, Rural-Urban Divide, Undergraduate, Postgraduate, Information Security Training.

Introduction :

The rapid proliferation of digital technologies has transformed education, with university students increasingly relying on online platforms, social media, cloud storage, and digital transactions. However, this digital dependency exposes students to cyber threats such as hacking, phishing, malware, and identity theft. Cybersecurity, defined as the protection of computer systems, networks, and digital data from unauthorized access or damage, is critical in safeguarding academic and personal information (Shinde, 2023). Despite the growing importance of cybersecurity, studies suggest that university students often lack adequate knowledge of cyber threats and protective measures, increasing their vulnerability (Patil, 2023).

This research focuses on assessing cybersecurity awareness among university students at KBC North Maharashtra University, Jalgaon. By analyzing awareness levels across academic levels, gender, and geographic backgrounds, the study aims to identify gaps and propose strategies for enhancing cybersecurity education. The findings are expected to inform educational policies and training programs to foster a secure digital environment.

Significance of the Study :

Cybersecurity is not merely a technical issue but a critical component of daily life in the digital age. For university students, who heavily utilize digital tools for academic and personal activities, cybersecurity awareness is essential to protect sensitive data, maintain academic integrity, and ensure personal safety.

This study is significant as it :

- Highlights the level of cybersecurity awareness among university students.
- Identifies gaps in knowledge and practices that increase vulnerability to cyber threats.
- Provides insights for educational institutions to develop targeted cybersecurity training programs.
- Contributes to the formulation of policies to enhance digital safety in academic settings.

Objectives :

The study aims to :

1. To Assess the level of cybersecurity awareness among UG and PG students at KBC North Maharashtra University.
2. To Analyze differences in cybersecurity awareness between UG and PG students at UG and PG levels.
3. To Compare cybersecurity awareness between male and female students at UG and PG levels.
4. To Analyze differences in cybersecurity awareness between rural and urban students at UG and PG levels.

Hypotheses : The following null hypotheses were tested:

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1. There is no significant difference in cybersecurity awareness test scores between UG and PG students.
2. There is no significant difference in cybersecurity awareness test scores between male and female students at UG and PG levels.
3. There is no significant difference in cybersecurity awareness test scores between rural and urban students at UG and PG levels.

Sample and Sampling Technique :

The study involved a sample of 100 students from KBC North Maharashtra University, Jalgaon, comprising 37 UG and 64 PG students. The sample was selected using a purposive sampling technique to ensure representation from both academic levels, genders, and rural-urban backgrounds. The sample inc

luded :

Category	Count
UG Students	37
PG Students	64
Rural Students	75
Urban Students	32
Male Students	90
Female Students	11

The sampling was limited to university department in KBC North Maharashtra University campus.

Tools Used :

A structured questionnaire was developed to assess cybersecurity awareness among students. It comprised questions related to basic cybersecurity concepts such as password security and the use of antivirus software. Additionally, it included items measuring awareness of cyber threats like phishing, malware, and ransomware. The questionnaire also addressed safe online practices, including avoiding suspicious links and using two-factor authentication. To ensure the tool's reliability and relevance, it was designed based on findings from prior studies and validated by subject matter experts. This validation process ensured that the questions were appropriate, clear, and capable of effectively capturing cybersecurity awareness levels.

Analysis and Interpretation of Data :

The analysis focused on the distribution of cybersecurity awareness test scores and comparisons across groups. The results are presented in the following tables:

Table 1 : Distribution of Cybersecurity Awareness Test Scores (PG Students)

Group	N	Mean (M)	Median (Md)	Mode (Mo)	SD	Kurtosis (Ku)	Skewness (Sku)
PG	64	94.60	95.5	100	15.37	-0.32	-0.13

Table 2 : Distribution of Cybersecurity Awareness Test Scores (Rural Students)

Group	N	Mean (M)	Median (Md)	Mode (Mo)	SD	Kurtosis (Ku)	Skewness (Sku)
Rural	75	92.45	92	100	17.01	2.26	-0.74

Table 3 : Distribution of Cybersecurity Awareness Test Scores (Urban Students)

Group	N	Mean (M)	Median (Md)	Mode (Mo)	SD	Kurtosis (Ku)	Skewness (Sku)
Urban	32	88.30	91	100	19.65	1.27	-0.77

Table 4: t-Test Results for UG vs. PG Students

Group	N	Mean (M)	SD	df	Obtained t-value	Table t-value	Significance
UG	37	83.51	23.77	99	-2.85	1.98	Reject
PG	64	94.60	15.37				

Interpretation: The obtained t-value (-2.85) exceeds the table t-value (1.98) at df=99 and $p<0.01$, leading to the rejection of the null hypothesis. This indicates a significant difference in cybersecurity awareness between UG and PG students, with PG students demonstrating higher awareness (M=94.60) compared to UG students (M=83.51).

Table 5: t-Test Results for Male vs. Female Students

Group	N	Mean (M)	SD	df	Obtained t-value	Table t-value	Significance
Male	90	91.80	18.98	99	0.46	1.98	Accept
Female	11	89.00	18.38				

Interpretation: The obtained t-value (0.46) is less than the table t-value (1.98) at df=99 and $p<0.01$, leading to the acceptance of the null hypothesis. There is no significant difference in cybersecurity awareness between male and female students.

Major Findings :

1. PG students exhibit significantly higher cybersecurity awareness (M=94.60) compared to UG students (M=83.51), suggesting that advanced academic exposure enhances awareness.
2. No significant difference was found in cybersecurity awareness between male (M=91.80) and female (M=89.00) students, indicating similar knowledge levels.
3. Rural (M=92.45) and urban (M=88.30) students showed comparable cybersecurity awareness, suggesting geographic background does not significantly influence awareness.
4. Approximately 25% of students require additional training on basic cybersecurity concepts, and 33% do not regularly change passwords, increasing vulnerability.
5. Awareness of specific threats like phishing (e.g., spear phishing, smishing) is low, with many students unaware of these risks.
6. Over 83% of students support mandatory cybersecurity training programs at universities.

Recommendations :

1. Implement mandatory cybersecurity training in university curricula, focusing on password security, phishing prevention, and safe online practices.
2. Organize regular workshops and seminars to enhance awareness, particularly targeting specific threats like phishing and malware.
3. Increase female participation in cybersecurity training to address gender-specific needs.
4. Promote awareness of cybercrime reporting procedures and legal frameworks like the IT Act, 2000.
5. Encourage the use of two-factor authentication (2FA) and regular software updates through awareness campaigns.

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