Research Article

Peer pressure, socio-economic status and gender difference on cybercrime tendencies of undergraduates

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This study examined the relationship between peer pressure, socio-economic status, gender difference and cybercrime tendencies of undergraduate students. To this aim, a descriptive survey design of the correlational type was employed. This study also used a multi-stage sampling technique. Three hundred university undergraduates made the study's sample. Data was collected using reliable instruments, i.e. Cybercrime tendencies scale, Peer pressure scale, and Socio-economic status scale. From the results, the male undergraduates showed more cybercrime tendencies than their female counterparts. There were significant relationships between cybercrime tendencies and peer pressure, socio-economic status, and gender. Peer pressure made the most significant contribution, followed by socio-economic status and gender. Although society is becoming more dependent on computers than ever before and technology is still advancing, the study found that it is still worthwhile to invest in fighting cybercrime, particularly for undergraduate students.

Keywords: Cybercrime, gender difference, peer pressure, socio-economic status, undergraduates

1. Introduction

The Internet is a vast global network made up of many smaller networks that enables computer users to easily and quickly share resources and information. Computer crime has also taken hold on the same Internet. Sarkar and Shukla (2017) assert that computer crime, also known as cybercrime, is a contemporary form of criminal activity. Crime involving the Internet or other information technology is known as cybercrime. The most common crime that is currently wreaking havoc on the world is cybercrime. In addition to causing massive losses to the government and society, criminals are also able to hide their identities from detection to a large degree (Button & Whittaker, 2021). Technically proficient criminals use the Internet to commit a variety of illegal activities. Using a more expansive definition, cybercrime is any unlawful activity in which a computer or the Internet is used as a tool, a target, or both (Ejizu, 2010). Any criminal scheme that exploits one or more cyber components to continue a crime is considered cybercrime (Adelana et al., 2023; Guo et al., 2022).

Cybercrime is any form of criminal scheme that presents fraudulent solicitations to potential victims via email, websites, chat rooms, or message boards; conducts fraudulent transactions; or transfers the proceeds of the crime to financial institutions or other scheme participants (Smallridge et al., 2016). Similar to this, Smallridge et al. (2016) proposed the following three definitions of cybercrime: 3) crimes specific to electronic networks, such as computer hacking, denial of service attacks, and attacks toward information systems; 4) traditional criminal activities, like fraud and forgery, but carried out through electronic communication networks and information systems; 5) the publication of illegal content across electronic media (e.g., material involving child sexual abuse or provocation to racial enmity). Therefore, Shehu (2014) argues that although the rapid development of digital technology and the convergence of computing and communications have significantly benefited society, there are also increased domestic and global risks. Thanks to computers and networks, they are now helping along many traditional crimes,

and the fantastic capabilities of information systems have led to the revelation of wrongdoing that was previously unimaginable.

According to the Internet World Statistics report, an estimated 1.96 billion people are online, which estimates that between 2000 and 2020, the Internet grew at an average rate of 44.8% globally (Adelana et al., 2023; Montag et al., 2021). Currently, the vast majority of Nigerians own mobile phones with internet access and have social media accounts on Facebook, Twitter, WhatsApp, Yahoo Mail, Google Mail, and other websites (Ibrahim, 2016; Opesemowo & Omideyi, 2023). Nigeria's Internet penetration rates increased dramatically from less than 5% in 2002–2003 to over 73% by the end of 2020, and the growth is predicted to continue, according to Ezea (2017). This increase was brought about by the introduction of mobile phones at the turn of the twenty-first century (Federal Bureau of Investigation [FBI], 2020). In 2016, a report was published in the Daily Trust by the Internet Crime Complaint Centre, an initiative that brought together the FBI and America's National White Collar Crime Center (Kanmodi et al., 2020; Xu et al., 2022). According to the report, Nigeria is eighth globally among the top ten destinations for cybercrime, lagging 8% behind the US (65%) and the UK (9.9%).

Young men commit the majority of cybercrimes in Nigeria, referred to as "yahoo-boys" or "yahoo-zee millionaires." The majority of these boys are recent graduates and undergraduates at Nigerian universities who use tools like exploits, network sniffers, password crackers, keyloggers, port scanners, vulnerability scanners, and so forth to hack, clone, and rip-off unwary victims (Adewuyi, 2023; Ezea, 2017; Opesemowo, 2023). Ibrahim (2016) and Yusuf et al. (2021) claim that young people in Nigeria who commit cybercrime live distinct lives than other young people, and that their usual strategies include collaborating with security personnel and bank officials, networking both domestically and globally, and employing voodoo, a traditional supernatural power. As per Ibrahim (2016), yahoo-boys in Nigeria are considered to be big boys who are well-known among friends and lecturers due to their flashy lifestyle that entices others to join them. Cybercrime seems to be a prevalent activity among young people, including some teenagers. This kind of behavior is linked to a number of well-known social issues, including parenting, social media usage daily, poverty, and harmful peer pressure.

The majority of college students involved in cybercrime go on to engage in harmful behaviors like drinking alcohol, smoking, acting rebelliously, and committing most deviant acts (Badru & Odutayo, 2023). Furthermore, it has an adverse effect on their school attitude, which in turn has an adverse effect on their academic performance and behavior in general (Adesina, 2017; Opesemowo et al., 2022). Furthermore, a nation's reputation in the community of nations and society is negatively impacted by the prevalence of cybercrime. Nowadays, most students enjoy taking advantage of other students and public and private institutions to further their academic careers. If this anomaly is allowed to persist, postsecondary educational institutions will become a haven where criminals are trained to con both the administration of the schools and the general public. A multitude of factors, such as differences in gender, socioeconomic status, and peer pressure, have a significant impact on cybercrime. As a result, the study focuses on how gender, socio-economic status, and peer pressure relate to university undergraduates' propensity for cybercrime.

2. Background

2.1. Peer Pressure and Cybercrime

Youths have been committing crimes and other deviant behaviors over time as a consequence of influence and peer pressure. Adoption of antisocial behavior for group conformity can occasionally result from frequent interactions with peers, especially deviant peers. It is important for young people to develop a new identity and to separate from their parents. More often than with parents, interactions with peers can result in peers taking center stage in social comparisons (Bayraktar et al., 2015; Udeme et al., 2024). The importance of peers in adolescent development has prompted a thorough investigation of peer influence during this phase of life (Opesemowo & Odumosu, 2023; Sylvester et al., 2023). Peer pressure is the inclination or willingness of individuals

within a peer group, regardless of age or social standing, to conform to the standards, opinions, interests, and norms of their peers. Peer groups with similar experiences are an unavoidable source of personal relationships, according to Benson et al. (2015). Ho and Luong (2022) made the case that peer pressure has a significant role in the problem of students' vulnerability to cybercrime through social networking sites, which have become a favorite pastime of theirs.

Frequent peer interactions, especially with deviant peers, can occasionally encourage the adoption of antisocial behavior in the name of group conformity. Cybercrime, like computer hacking and online bullying, seems to be fueled primarily by peer pressure and a lack of self-control (Schell, 2019). One of the most significant predictors of whether someone will commit cybercrimes is having friends who do so, they observed. Peer influence is the most important predictor of youth engagement in cybercrime, according to Cojocaru and Cojocaru (2019) in another related study. They also noticed that a lack of self-control contributes to youth cybercrime directly and indirectly through the offenses of peers. The survey shows evidence that connects deviant peer associations with other criminal activities and cybercrime violations. Additionally, they discovered that peer offenses consistently predicted every kind of cyber deviance and significantly impacted other offenses more than poor self-control. According to Cojocaru and Cojocaru (2019), because of the relative anonymity that computers and the internet afford their users, cybercrimes may appeal to young people more than crimes committed in the real world.

2.2. Socio-Economic Status and Cybercrime

Studies on the propensity for cybercrime have revealed a substantial percentage difference between high and low socio-economic statuses. High, middle, and low socio-economic status levels are frequently employed to describe the three roles that a family or an individual can play. When placing a family or individual into one of these groups, any or all of the three factors (income, education, and occupation) can be assessed (Gupta, 2017; Yusuf et al., 2018). Furthermore, it has been demonstrated that low income and education are significant predictors of a variety of behavioral issues, including youth cybercrime. Higher socio-economic status students also have profited from ongoing exposure to parents' social ties with people outside their immediate family, such as neighbors, teachers, or coworkers (Lazarus et al., 2022; Omoponle & Veronica, 2023). For instance, Children with well-connected parents and teachers are more likely to use the internet responsibly. However, if a person's teachers don't have any contacts and their relatives don't have jobs, they are forced to choose other types of contacts (like peers) that don't provide long-term advantages. These increase the ability of people from higher socio-economic status to make positive decisions, which lowers their propensity to commit cybercrime (Onyemah, 2022; Victor A et al., 2023).

Maras et al. (2024) investigated the possible connection between cybercrime and socioeconomic status. They discovered a strong correlation between cybercrime and low socio-economic status. In a similar vein, Barkoukis et al. (2015) have investigated cybercrime in great detail, and their findings consistently demonstrate a strong correlation between cybercrime among college students and low socio-economic status. Wright's (2023) quantitative study, which involved 200 randomly chosen second-year University of Venda students, discovered that cybercrime and socio-economic status were significantly correlated. According to Olayemi (2014), people from lower socio-economic backgrounds tend to be less committed to their studies and participate in deviant behavior. The most recurrent finding in the literature points to underachievers' low socio-economic status, which may tempt them to engage in criminal activity like cybercrime. These studies found a strong correlation between low socio-economic status and deviant behavior, such as cybercrime.

2.3. Gender Difference and Cybercrime Tendencies

A substantial amount of criminological research has identified a gender difference in antisocial behavior, and this finding has continuously shown that men commit crimes at higher rates than women (Wang et al., 2019). Additionally, empirical research has shown that there is often a difference in the likelihood of men and women engaging in various criminal and deviant behaviors. Men have been reported to be more inclined than women to commit crimes such as prostitution, fraud, and forgery (Donner, 2016), as well as crimes involving weapons, affiliation with gangs, and vandalism (Aransiola & Asindemade, 2011). Men are also more likely than women to use physical aggression and violence, according to numerous studies (Adewuyi, 2021; Jain et al., 2012). Furthermore, contrary to conceptual expectations that women are more likely to use verbal and relational aggression, the research has yielded contradictory results. Despite the fact that most recent research suggests that there is little to no gender difference, some studies do indicate that women are more likely to engage in relational aggression (Liu, 2019).

Men have been observed to commit piracy infractions at a higher rate than women in this field of cybercrime (Hemphill et al., 2016; Muraina & Omoponle, 2017). Hemphill et al. (2016) discovered, for instance, that among a sample of 392 college students, being male had a significant and positive effect on software piracy. There are differing conclusions in the literature due to other research findings that have not been able to show a gender effect. Unauthorized access to other people's computers and Internet systems is a common component of computer hacking. According to Dilmaç et al. (2017) and Adewuyi and Jimoh (2017), victims of hacking offenses may experience both financial and personal hardship depending on the type of hack (e.g., identity theft, unauthorized access, file manipulation). As with the works of literature on cyberharassment and digital piracy, the available data has produced conflicting results, but it generally lends credence to the idea that men commit hacking offenses at higher rates than women (Akintola et al., 2016).

2.4. The Aim

The main purpose of this study is to examine the effect of various factors (peer pressure, socio-economic status, and gender differences) on cybercrime tendencies among university undergraduates. This aim leads to the following research questions:

RQ 1) Does gender make a significant difference in cybercrime tendencies among university students?

RQ 2) What relationship pattern exists between (peer pressure, socio-economic status, gender difference) and cybercrime tendencies among university undergraduates?

RQ 3) What is the joint contribution of (peer pressure, socio-economic status, and gender difference) to cybercrime tendencies among university undergraduates?

RQ 4) What is the relative effect of (peer pressure, socio-economic status, and gender difference) on cybercrime tendencies among university undergraduates?

3. Method

A descriptive survey research design was adopted to answer the research questions. A multi-phase sampling process was employed to select the sample from the study's population. Using random sampling, the researcher chose three tertiary institutions in Ibadan, Oyo state. Three hundred (300) students were selected randomly from among the undergraduate students at each postsecondary institution, with one hundred being chosen at random. Both men and women were among the participants. Table 1 summarizes the characteristics of the participants.

Table 1
Characteristics of the participants

Characteristics	N	Percentage
Age		
Between 18-23 Years	184	61.3
Above 23 Years	116	38.7
Gender		
Male	228	76
Female	72	24
Religion		
Christian	141	47.0
Muslim	147	49.0
Others	12	4.0

3.1. Instrumentation

The instrument utilized in this study to gather participant data was a structured questionnaire. There were two sections on the questionnaire: A and B. The demographic data of the participants is collected in Section A. This includes the type of family, parental background, gender, age range, and institution name; section B of the questionnaire collected responses regarding additional variables. The tool was made available to experts in education psychology and assessment so they could validate it. After experts confirmed the instruments' reliability, a pilot study was conducted to ensure it was correct. The pilot study involved the administration of the instruments on participants outside the sample area. Reliability was assessed, and the contributions were combined. After determining the reliability using the split-half approach, the Spearman-Brown prediction Formula was utilized for analysis. The instruments' reliability index was calculated as follows: the socioeconomic status scale (α = 0.77), peer pressure (α = 0.88), and cybercrime tendencies scale (α = 0.84). The researchers followed all ethical guidelines and got each participant's consent after receiving the go-ahead from the sampled institutions. In order to prevent factual distortion, the respondents were also guaranteed the confidentiality of the data gathered. The study's data was gathered by the researchers in collaboration with five research assistants.

3.2. Data Analysis

Descriptive statistics (frequency count and percentage) were used to analyze the questionnaire data and determine demographic information. Multiple regression analysis and PPMC statistical tools were employed to address the research questions and the hypothesis, all at the .05 significance level.

4. Results

In other to test wheter significant difference exists in the cybercrime tendencies of undergraduates based on gender, an independent samples *t*-test was performed. Table 2 shows the results.

Table 2
T-test results for gender comparison

Gender	N	Mean	SD	df	t	p
Male	228	47.54	33.96	298	1.079	.036
Female	72	42.79	27.53			

As revealed in Table 2, the cybercrime tendencies of undergraduates were influenced by gender ($t_{\{298\}}$ = 1.079, p < .05). Given the mean scores of males (47.54) and females (42.79), it could be assumed that male undergraduates showed more cybercrime tendencies than their female counterparts.

The second research question seeks to know whether there exists a relationship pattern between (peer pressure, socio-economic status, gender difference) and cybercrime tendencies among university undergraduates. Table 3 shows the summary results.

Table 3
Descriptive statistics and correlation matrix related to the characteristics and cybercrime tendencies

Variables	N	Mean	SD	1	2	3	4
Cybercrime Tendencies	300	46.400	32.55	1.00			
Peer pressure	300	44.900	32.43	.969**	1.00		
Socio-economic status	300	29.330	6.29	.290**	.156**	1.00	
Gender	300	1.240	.42	.062	.049	.039	1.00

Note. **Correlation is significant at the .01 level (2-tailed).

As can be seen from the Table 3, a strong relationship exists between cybercrime tendencies among university undergraduates and peer pressure ($r = .969$; $p < .05$), socio-economic status ($r = .290$; $p < .05$), and gender ($r = .062$; $p < .05$). Also, significant correlations were found between the independent variables.

The other research problem investigated the joint contribution of peer pressure, socio-economic status and gender factors to cybercrime tendencies among university students. The results are as in Table 4.
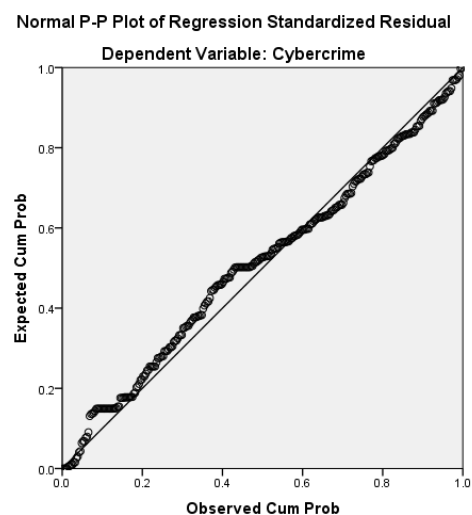
Table 4
Multiple regression analysis on composite contribution of independent variables to cybercrime tendencies

	Analysis of variance			
	Sum of Square	*df*	*Mean Square*	*F*
Regression	136652.261	3	101276.673	2292.592
Residual	341798.813	296	44.176	
Total	478451.074	299		

Note. a) R = .979; b) R² = .959; c) Adjusted R² = .958; d) Standard error of estimate= 6.64647.

Table 5 displays the combined effect of gender differences, socioeconomic status, and peer pressure on university undergraduates' propensity for cybercrime. The multiple correlation coefficient (R = 0.979, $p < .05$) and multiple regression adjusted coefficient (R² = 0.959) are displayed in the table. This suggests that the combined effect of the independent variables explained 95.9% of the variation in cybercrime tendencies. Meanwhile, residuals and other factors might be to blame for the remainder. The table also revealed that F (2292.592, $p < .05$) was the result of the regression's analysis of variance. Figure 2 shows the *p*-plot of the variables.

Figure 2
The p-plot of the variables

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: Cybercrime

Finally, it was examined the relative impact of peer pressure, socio-economic status and gender on cybercrime tendencies among university students. The results are summarized in Table 5.

Table 5

Summary Relative Contribution of Independent variables to cybercrime tendencies

Model	Unstandardized coefficients	Standardized coefficients			
	B	Standard error	Beta	t	p
Constant	−16.860	2.204		−7.649	<.005
Peer pressure	.950	.012	.946	79.086	<.005
Socio-economic status	.735	.062	.142	11.882	<.005
Gender	−.766	.900	−.010	−.851	.395

Table 5 demonstrates that the independent factors substantially affected the prediction of cybercrime tendencies among university undergraduates. The most significant contribution to the prediction in magnitude was made by peer pressure (β = .946; t = 79.086; p < .005). Socio-economic status (β = .142; t = 11.882; p < .005) and gender (β = -.010; t = −.851; p > .05) were the other significant variables, in that order.

5. Discussion

The results indicate that undergraduate students' tendencies toward cybercrime are influenced by gender. Based on the mean scores and statistical analyses, it can be inferred that male undergraduates exhibit higher tendencies toward cybercrime compared to their female counterparts. This suggests that, relative to female students, male students are more prone to committing cybercrimes. This finding aligns with the conclusions of previous studies (Aransiola & Asindemade, 2011; Liu, 2019), which generally indicate that men are more likely than women to engage in cybercrime, although some studies report the opposite. The second key finding of these studies, however, contrasts with our results. Research by Donner (2016) and Hemphill et al. (2016) found no significant gender effect on cybercrime. Unfortunately, these studies provide insufficient data to draw definitive conclusions about the impact of gender on cybercrime.

The results also revealed a strong correlation between university undergraduates' propensity for cybercrime and factors such as gender, socioeconomic status, and peer pressure. The study found that, unlike gender—which exhibited a weak and positive correlation with cybercrime tendencies—peer pressure showed a strong and positive correlation with both cybercrime tendencies and socioeconomic status. This finding suggests that peer relationships may foster a culture conducive to cybercrime, where individuals exchange information and support one another in committing these acts. Additionally, the study identified socioeconomic status as a significant factor influencing undergraduate students' involvement in cybercrime. This is consistent with the idea that individuals' desires for material goods and needs are shaped by their social status. Students from low-income backgrounds, facing financial constraints, may be more likely to engage in cybercrime as a means of maintaining social relevance among their peers. The weak gender difference observed in the study suggests that gender is not a significant factor in the likelihood of committing cybercrimes, as tendencies are present across both genders (Ayanwale et al., 2023).

According to Ho and Luong (2022), frequent interactions with peers—particularly those who exhibit deviant behavior—can lead to the adoption of antisocial behaviors, including cybercrime, as a form of group conformity. The findings of this study align with their conclusions, suggesting that peer groups with shared experiences are a significant source of personal relationships. Young people, as they seek to establish their identities and gain independence from their parents (Adewuyi et al., 2020; Opesemowo et al., 2023), may turn to their peers as the primary source of social comparison, often more so than with their parents. Adewuyi (2021) indicates that peers determine their social status by comparing material possessions with those of their significant others. Consequently, individuals may engage in cybercrime to achieve a desired status within

their peer group. Donner (2016) notes that piracy offenses are more prevalent among men than women. For example, in a sample of 392 college students, Donner (2016) found that being male significantly and positively influenced the likelihood of engaging in software piracy. However, other studies (Adewuyi & Yusuf, 2019; Bossler, 2021) have not demonstrated a gender effect, resulting in conflicting findings within the literature.

The results further indicate that the independent variables significantly contribute to tendencies toward cybercrime. This finding is consistent with Robson and Witenberg's (2013) study, which identified peer pressure as a significant factor influencing cybercrimes. They argue that cyberbullying is often associated with negative peer support, and that proximity to antisocial peers increases the likelihood of both violent and antisocial behavior, suggesting that detrimental peer relationships may contribute to a rise in cybercrimes (Hemphill et al., 2015). Additionally, poor family life quality (socioeconomic status) is a stronger predictor of cyber victimization, while stronger family ties are a more robust predictor of cybercrime perpetration. Cook et al. (2010) found that the quality of relationships among children and adolescents is the best predictor of both bullying and cybercrime. Other research indicates that parental control and monitoring can reduce the frequency of internet harassment victimization. This includes practices such as discussing online behavior with children and being informed about their online activities.

Finally, the research findings indicate that cybercrime tendencies can be predicted based on peer pressure and socioeconomic status, while gender appears to have no discernible influence. This is consistent with Ho and Luong's (2022) study, which found that cybercrime behaviors such as computer hacking and online bullying are primarily driven by peer influence and socioeconomic status. They noted that one of the most significant predictors of an individual's propensity for cybercrime is having friends who engage in such activities. In a related study, Benson et al. (2015) surveyed 329 students and found that peer influence is the most significant predictor of involvement in cybercrime. Their findings also showed that youth cybercrime tendencies are directly and indirectly affected by low socioeconomic status through peer offending. According to Benson et al. (2015), there is evidence linking low socioeconomic status and deviant peer associations with increased likelihood of committing both traditional and cyber crimes. Similarly, Holt et al. (2018) found that low socioeconomic status consistently predicts various types of cyber deviance and that peer offending has a more substantial effect on others' offending. The study also noted that the anonymity provided by computers and the Internet might make cybercrime more appealing to youths compared to traditional criminal activities. Research by Dilmaç et al. (2017) supports these findings by showing that men are more likely than women to use the Internet more frequently, spend more time online, and use the Internet for a wider range of purposes, given similar levels of Internet access.

6. Conclusions

The propensity for cybercrime among university undergraduates is a pressing concern for all stakeholders involved. It is essential to investigate the underlying reasons for this tendency, particularly given the severe emotional, psychological, and financial repercussions faced by victims of cybercrime. As society becomes increasingly reliant on digital technologies, investing in measures to combat cybercrime becomes more critical. This study explores the mechanisms and relationships between cybercrime tendencies among university undergraduates, peer pressure, gender differences, and socioeconomic status. The analysis revealed significant correlations between peer pressure, socioeconomic status, gender differences, and cybercrime tendencies among first-year college students. Specifically, male students exhibited a higher propensity for cybercrime compared to female students. Peer pressure and socioeconomic status were found to have a relative influence on predicting cybercrime tendencies, whereas gender had no significant impact on these predictions.

This research enhances our understanding of university undergraduates' cybercrime tendencies, highlighting the importance of addressing this societal issue. The findings suggest that addressing cybercrime and its consequences requires a substantial psychological shift, particularly

when interventions involve the study's independent variables: gender differences, socioeconomic status, and peer pressure. To effectively tackle cybercrime, it is necessary to develop multifaceted approaches that address these issues from various angles.

7. Limitations and Future Directions

Although the study results provide important results in terms of the variables examined, water limitations should be taken into account when interpreting them. First, this study relied solely on self-report measures. The use of self-reporting can introduce common method bias, such as unmeasured implicit biases that may influence responses due to uncontrollable factors. Second, the generalizability of the results should be approached with caution. While the study included university undergraduates from diverse socioeconomic backgrounds and considered gender differences, resistance to peer pressure may vary depending on ethnicity and cultural context (Steinberg & Monahan, 2007). Future research should involve diverse cultural samples to validate and extend our findings.

A series of recommendations based on the results of the study are as follows. To reduce the likelihood of cybercrime among university undergraduates, it is advisable for students to exercise caution when joining cliques or peer groups. Higher education institutions should implement orientation programs for new students, as such training is crucial for equipping them with the tools needed to navigate both academic and social environments responsibly, thereby helping to prevent cybercrimes. Additionally, institutions should establish policies that enforce penalties for offenders and raise awareness about online misconduct. Effective crime reduction and prevention strategies must be developed and implemented. Moreover, national legislation prohibiting cybercrime should be enacted to provide a legal framework for combating these offenses. The government is also encouraged to offer employment opportunities to young people as a deterrent to cybercrime involvement. Finally, educational administrators should foster a culture of integrity by creating an environment that supports ethical behavior and values. This can be achieved through educational programs and incentives, such as awards for exemplary behavior and social contributions, to encourage positive conduct among students.

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