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*Strictly as per the compliance and regulations of:*

# The Extent of Involvement in Cybercrime Activities among Students' in Tertiary Institutions in Enugu State of Nigeria

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## I. Introduction

The technological advancement in cyber space has made computer an integral component in national development. Criminal activities within the cyberspace are now on a global scale. Olaide and Adewole (2004) noted that most of the criminal activities in Nigeria are carried out by the youth. Therefore, it has become imperative to assess the extent of students' involvement in this type of criminal activity. However, if the youths are given the required academic training, the knowledge received will be channeled towards the development of the country. As noted by the National policy on education (2005), that no nation can rise above the quality of its education system.

Tertiary education in Nigeria comprises of undergraduate, and post graduate, and vocational training. Usually, an individual needs to be admitted into a college, polytechnic or university to receive tertiary education. It is the most specialized form of education where an individual takes a particular course of study. On completion of the course, the individual receives an academic degree, diploma or certificate that will help such an individual to be a better human being. The apparent gap between what is acquired in school and the reality of the workspace has been largely attributed to poor learning condition. No wonder education in Nigeria is for those who cannot afford functional education overseas. The breakdown in the quality of education, has led youths to unusual behaviours and the reason why students engage themselves in Cybercrimes.

Cybercrime refers to any form of crime committed by any individual through the use of a computer and network (Mattew, 2010). Debarati and Jaishankar (2011) define cybercrimes as offences that are committed against individuals or groups of individuals with a criminal motive to intentionally harm the reputation of the victim or cause physical or mental harm to the victim directly or indirectly, using modern telecommunication networks such as Internet (Chat rooms, emails, notice boards and groups), and mobile phones (SMS/MMS). Computer related harassment as defined in the U.S. computer statutes is a situation where an individual use a computer or computer network to communicate indecent language, or make any suggestion or proposal of that nature, or threaten any illegal or immoral act. Several techniques used by cyber criminals have been identified – phishing, stalking, etc.

Markus and Steven (2007) defined phishing as a form of social engineering in which an attacker, also known as a phisher, attempts to fraudulently retrieve legitimate users' confidential or sensitive credentials by mimicking electronic communications from a trustworthy or public organization in an automated fashion. Also, Wikipedia (2014) noted that phishing is the attempt to acquire sensitive information such as usernames, passwords, and credit card details (and sometimes, indirectly, money) by masquerading as a trustworthy entity in an electronic communication. Communications purporting to be from popular social web sites, auction sites, banks, online payment processors or IT administrators are commonly used to lure unsuspecting public. Phishing is typically carried out by email spoofing or instant messaging, and it often directs users to enter details at a fake website whose look and feel are almost

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identical to the legitimate one. Another form of cybercrime is stalking.

Stalking occurs when one person repeatedly intrudes on another to such an extent that the recipient fears for his or her safety (Mullen, Pathé & Purcell 2009). This involves any form of harassment or threatening of an individual, whether physically or through the use of electronics (unsolicited phone calls, SMS/MMS). Virtually any unwanted contact between two persons that directly or indirectly communicate a threat or place the victim in fear can be considered stalking. Some stalkers develop an obsession for another person with whom they have no personal relationship. When the victim does not respond as the stalker hopes, the stalker may attempt to force the victim to comply by use of threats and intimidation. When threats and intimidation fail, some stalkers turn to violence. Purcell, Pathé & Mullen (2004) explained that stalking occurs if multiple unwanted intrusions persist for a period of two weeks or more.

Since higher institutions are of different types, it is important to know if the type of institution determines students involvement in cybercrime since each institution possesses a unique or peculiar cooperate culture. In Enugu state, there are three major higher institutions (Colleges of education, Polytechnics and Universities). These institutions have different systems of administration and policies. It is also vital to know if gender could be responsible for students' involvement in cybercrime activities. Gender is a biological make up which differentiates individual's responsibility and functions.

*a) Statement of the Problem*

The Nigerian education system has experienced decades of strike actions at all levels. It is difficult to find an individual that had completed an educational programme without experiencing long strike action. The struggle by the academics to attract the attention of the government to the problems of poor infrastructure, lack or inadequate remuneration for staff has resulted to incessant strikes. One of the direct consequences of poor infrastructure is the inability of the institutions to house their students within the campus. Students now leave outside the school campus unsupervised thereby exposing them to different type of ugly behaviors and peering with bad gangs.

*b) Purpose of the Study*

The main purpose of this study is to determine the extent of involvement in cybercrime activities among students of tertiary institutions in Enugu state. Specifically, the study tends to determine:

1. The extent at which students involve in stalking.
2. The extent at which students involve in phishing
3. The influence of gender on students' involvement in cybercrime.
4. The influence of institution type on students' engagement in cybercrime.

*c) Research Questions*

The following research questions guided the study

1. To what extent are students involved in stalking?
2. To what extent are students involved in phishing?
3. What is influence of gender on students' involvement in cybercrime?
4. What is the influence of institution type on students' involvement in cybercrime?

*d) Research Hypotheses*

The following hypotheses were formulated

HO1: Institution type has no significant influence on student involvement in cybercrime.

HO2: There is no significant difference between male and female students of higher institutions on their involvement in cybercrime activities.

*e) Significance of the Study*

This study would be of immense benefit to the education system in Enugu state. This comprises of the Ministry of education, the management of tertiary institutions, students and the general public.

The ministry of education, through the findings of this research, would be able to formulate policies and programmes to ensure functional and effective education.

Management of institutions would also find this research interesting because it would enable them design academic activities that would engage students until they finish their academic programmes.

Students would find this work interesting because it would help them understand the consequences of engaging in cybercrime.

The society at large would be more aware of danger of youth involvement in cybercrimes and make adequate effort to impart good moral to their children.

## II. Methods

The study adopted cross sectional survey design with a population size of 18,340 students cutting across final year students of colleges of education, polytechnic and universities in Enugu state (i.e. those admitted in the year 2012, 2011, 2011 respectively). The cluster sampling procedure was adopted to draw a sample of 175 students. Each of the five institutions in Enugu state, University of Nigeria, Nsukka (UNN), Enugu State University of Science and Technology (ESUT), Institute of Management and Technology (IMT), Federal College of Education (Eha-Amufu) and Enugu State College of Education Technical (ESCET) that make up the area of study was regarded as a cluster. Eboh (2009) indicated that cluster sampling is suitable for use where the focus of interest is the occurrence of individual events within a particular carefully specified locality. Sampling was done by drawing 35 students

from each cluster using the simple random sampling technique of balloting.

The instrument for data collection was a 12-item questionnaire made up of two sections, A & B. Section A elicited information on the demographic variables of the students while, section B contained 10 item statements with a 4 opinion responses of Most times (MT) Sometimes (ST) Seldom (SD) and Never (NE). Also, section B contained statements that addressed two dimensions of cybercrime (stalking and phishing). Content and face validity of the instrument were established through the judgment of three experts. Reliability of the instrument was done using Split-half method. Twenty copies of the instrument were administered on twenty students in higher institutions in Anambra state. The correlation coefficient of the two sets of scores yielded 0.87 using Cronbach Alpha statistic.

Data analysis was done using mean and standard deviation. The four response options of MT, ST, S and N were weighted 4, 3, 2 and 1 respectively, and coded into the Special Package for Social Sciences (SPSS). A criterion mean of 2.50 was established. Mean responses of 2.50 and above were regarded as high extent while mean responses below 2.50 were regarded as low extent. The t-test and one way ANOVA statistic were employed in verifying the null hypotheses, at 0.05 level of significance.

## III. Results

*Table 1 :* Mean Ratings of the Responses on the Extent at which Students are Involved in Cybercrime Activities N = 175

| SN | Items | Mean | SD | Interpretation |
|---|---|---|---|---|
| 3 | Use social networking sites and technology to track people | 3.17 | 0.85 | High extent |
| 4 | Constantly placing unwanted calls to people | 3.22 | 0.86 | High extent |
| 5 | Send unwanted text messages and email to people | 3.37 | 0.80 | High extent |
| 6 | Use social networking sites to blackmail people | 3.50 | 0.63 | High extent |
| 7 | Upload female picture without their consent | 2.03 | 0.94 | Low extent |
| 8 | Hack into people's personal and sensitive information in internet | 3.53 | 0.56 | High extent |
| 9 | Use cell phone to bridge into people's privacy | 3.14 | 0.84 | High extent |
| 10 | Spread computer virus via internet | 1.34 | 0.48 | Low extent |
| 11 | Use internet to dupe people | 3.51 | 0.69 | High extent |
| 12 | Use internet to do illegal business | 3.39 | 0.80 | High extent |
| | **Grand mean** | **3.02** | **0.74** | **High extent** |

TABLE one contains the result of the responses on the extent at which students engage in cybercrime activities in higher institutions. The table indicated that students in higher institution do not spread computer virus via the internet or upload female picture without their consent. However, the table shows a high rate of students' involvement in cybercrime with grand mean of 3.02.

*Table 2 :* Mean Ratings on the Responses on the extent at which students are involved in cybercrime activities based on gender N = 175

| SN | Items | Male = 103 | | | Female = 72 | | |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Interpretation | Mean | SD | Interpretation |
| 3 | Use social networking sites and technology to track people | 3.73 | 0.45 | High extent | 2.38 | 0.62 | Low extent |
| 4 | Constantly placing unwanted calls to people | 3.78 | 0.42 | High extent | 2.43 | 0.69 | Low extent |
| 5 | Send unwanted text messages and email to people | 3.92 | 0.27 | High extent | 2.57 | 0.60 | High extent |
| 6 | Use social networking sites to blackmail people | 3.95 | 0.22 | High extent | 2.86 | 0.45 | High extent |
| 7 | Upload female picture without their consent | 2.68 | 0.65 | High extent | 1.10 | 0.30 | Low extent |
| 8 | Hack into people's personal and sensitive information in internet | 3.93 | 0.25 | High extent | 2.96 | 0.31 | High extent |
| 9 | Use cell phone to bridge into people's privacy | 3.73 | 0.45 | High extent | 2.31 | 0.46 | Low extent |
| 10 | Spread computer virus via internet | 1.58 | 0.50 | Low extent | 1.00 | 0.00 | Low extent |
| 11 | Use internet to dupe people | 4.00 | 0.00 | High extent | 2.82 | 0.59 | High extent |
| 12 | Use internet to do illegal business | 3.94 | 0.24 | High extent | 2.61 | 0.66 | High extent |
| | **Grand mean** | **3.52** | **0.34** | **High extent** | **2.30** | **0.47** | **Low extent** |

In the overall TABLE two, the responds shows that male students engage more in cybercrime activities than female with the grand mean of 3.52 for male and 2.30 for female. However, both male and female students do not spread computer virus via internet.

*Table 3 :* Mean Ratings on the Responses on the Extent at which Students are Involved in Cybercrime Activities based on Institution type N = 175

| Items | College of Education = 70 | | | Polytechnics = 35 | | | Universities = 70 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean | SD | Interpretation | Mean | SD | Interpretation | Mean | SD | Interpretation |
| 3 | 2.36 | 0.62 | Low extent | 3.14 | 0.36 | High extent | 4.00 | 0.00 | High extent |
| 4 | 2.41 | 0.69 | Low extent | 3.29 | 0.46 | High extent | 4.00 | 0.00 | High extent |
| 5 | 2.54 | 0.58 | High extent | 3.74 | 0.44 | High extent | 4.00 | 0.00 | High extent |
| 6 | 2.83 | 0.42 | High extent | 3.86 | 0.36 | High extent | 4.00 | 0.00 | High extent |
| 7 | 1.07 | 0.26 | Low extent | 2.00 | 0.00 | Low extent | 3.00 | 0.54 | High extent |
| 8 | 2.93 | 0.26 | High extent | 3.80 | 0.41 | High extent | 4.00 | 0.00 | High extent |
| 9 | 2.29 | 0.46 | Low extent | 3.14 | 0.36 | High extent | 4.00 | 0.00 | High extent |
| 10 | 1.00 | 0.00 | Low extent | 1.00 | 0.00 | Low extent | 1.86 | 0.35 | Low extent |
| 11 | 2.79 | 0.56 | High extent | 4.00 | 0.00 | High extent | 4.00 | 0.00 | High extent |
| 12 | 2.57 | 0.63 | High extent | 3.83 | 0.38 | High extent | 4.00 | 0.00 | High extent |
| Grand mean | 2.28 | 0.45 | Low extent | 3.18 | 0.28 | High extent | 3.69 | 0.09 | High extent |

In the overall TABLE three, the responds shows that students in the university and polytechnic engage more in cybercrime activities than those in college of education with the mean rating of 3.69 for university, 3.18 for polytechnic and 2.28 for college of education. Meanwhile, item 10 shows low extent for college of education, polytechnic and university.

*Table 4 :* Summary of the T-Test Analysis Verifying the Difference Between Male and Female students on their Mean Response on the Extent of their Involvement in Cybercrime activities in Higher Institutions in Enugu State

| Gender | N | Mean | SD | Df | t-cal | t-crit | P | Decision |
|---|---|---|---|---|---|---|---|---|
| Male | 103 | 3.52 | 0.34 | | | | | |
| | | | | 173 | 18.60 | 1.96 | .05 | Reject |
| Female | 72 | 2.30 | 0.47 | | | | | |

TABLE 4 the mean ratings of male and female students have been compared using the t-test statistics. The data show that t-cal (18.60) > t-critical table value (1.96), therefore the Ho1 is rejected. Gender has influence on students' involvement in cybercrime activities at .05 level of significance. Male students' involvement in cybercrime activities is more than that of female.

*Table 5 :* Summary of the ANOVA Statistic Verifying the Difference on Mean Responses of Students Regarding their involvement in Cybercrime activities According to their Institution type

| Source | Df | Sum of squares | Mean square | f-cal | f-tab | P | Decision |
|---|---|---|---|---|---|---|---|
| Between Group | 2 | 76.56 | 38.28 | | | | |
| | | | | 303.27 | 3.18 | .05 | Reject |
| Within Group | 172 | 23.27 | 0.13 | | | | |

In TABLE 5, one way ANOVA was applied in analyzing Ho2. The data as contained in Table 5 show that f-cal (303.27) > f-tab (3.18) at .05 level of significance, therefore, therefore Ho2 is rejected. The students' involvement in cybercrime activities is dependent on institution type.

## IV. Summary of Findings

1. Students of high institutions in Enugu state are involved in cybercrime activities.
2. Students' involvement in cybercrime activities is dependent on gender. Male students engage more in cybercrime than female students.
3. Also, institution type determines the extent of cyber criminalities engage in by students.

## V. Discussion

The study generated information on cybercrime involvement among students' in tertiary institutions in Enugu state. The finding pertaining to research questions 1 and 2 revealed that students engage themselves in cybercrime activities. This finding is not unexpected considering the several breaks within an academic programme occasioned by union strikes. The finding is in line with Odumesi (2014) who observed that cyber criminal activities are common among youths.

The finding pertaining to hypothesis one (Ho1) revealed that student involvement in cybercrime is dependent on gender. Male students engage more in cybercrime than female students. This finding is not unexpected since women are mostly victims, and consistent with the findings of the Association for Progressive Communication (2014), which observed that women are the primary victims of cybercrime, while men are the primary harassers. Encyclopedia (2002) also noted that men have greater involvement in committing crime than women.

The finding pertaining to hypothesis two (Ho2) revealed that students' involvement in cybercrime is dependent on the institution type. This may be attributed to the fact that each institution has its own culture and runs a different kind of academic programme. The finding is in agreement with that of Okeshola and Abimbola (2013) who observed that various forms of cyber criminal activities are being perpetrated in Nigeria tertiary institutions, and this is denting and drilling holes in the economy of the nation.

## VI. Implications of the Study on Education and Economy

The situation in most tertiary institutions in Enugu is alarming and cybercrime is just another dimension to it. The youths are the leaders of tomorrow and should be given proper education to be able to channel the energy towards more profitable ventures. Unfortunately, as the study revealed, the system charged with this responsibility has not delivered the goods. More people live in fear of harassment from different sources. This has very serious negative implications on the education of the youth and the economy in genera.

## VII. Recommendations

Government should set up a mechanism to track and investigate the menace of cyber criminals within and outside the institutions. After all, majority of undergraduates live within the larger society and it is more difficult to monitor the development of these students. There should be a more proactive approach towards the provision of comfortable accommodation for all the students to guarantee effective training.

Workshops should be organized for the students from time to time on the trends of cyber criminals. By so doing, such crimes could easily be noticed and reported before they escalate to a larger proportion. The academic programme should be such that students are seriously engaged throughout. This can only be achieved through effective collaboration between the management and the labour unions.

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