Effects of Unrestricted Mobile Phone Usage in Selected Public Places in Nigeria: A Case Study of Akure

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Abstract: ***The appalling rate of the adverse effects of the unrestricted use of mobile phones in public places and critical dimensions of how to forestall and checkmate the negative tendencies of using such in public places are closely assessed. In this study, the effects of unrestricted mobile phone usage in specifically selected public buildings in Akure, the capital of Ondo state, Nigeria were assessed in order to determine the integrity of the public mobile phone users. Data were collected from specific public places in Akure using questionnaire administration and oral interview. The places investigated were examination halls, banking halls and detention centers (police cell and prison yards).Enquiries were made on the prominent effects of the mobile phone usage on the public, and the feeling of the listeners. The data obtained were analyzed statistically using descriptive statistics based on percentages. The validation of the results was carried out using paired- t test to determine whether there is a significant difference between the reactions of public on the targeted effects of unrestricting mobile phone usage. The results of the analysis showed that there was variability in the degrees of adverse consequences of mobile phone usage in the places considered. Cheating took highest position in examination halls while the use of mobile phone greatly leads to threats, which eventually affected investigation at the police station. The analysis further showed that there is a significant difference on the effects of mobile phone usage in the respective public places investigated, where threatening effects played prominent role. This showed that a good device is required to checkmate indiscriminate use of mobile phone in public places to avoid public indiscipline.***

Keywords: Mobile phone, unrestricted calling, public places, public indiscipline.

1. Introduction

The advent of wireless technology and advances in telecommunications, the use of mobile phones (GSM) by all categories, classes and ages of people have become widespread. While this is laudable, the abuse of this technology has however been on the high side in recent times too. Mobile phone usage in both private and public places in Nigeria has generated some problems that may be difficult to solve. Unrestricted use of mobile phone in private sectors has limited effects on the users and attendants because of low volume of people involved. Reverse is the case of public buildings where highly populated people of different behaviors were present. In the latter case, the effects of mobile phone usage may be significant and may vary along the categories of public places in question. People often tend to forget and sometimes deliberately use their phones in unauthorized places such as banking halls, confidential meetings, correctional facilities and examination halls too. Therefore, it is pertinent that the effects of the unrestricted use of mobile phone in public places be assessed in order to forestall adverse consequences of using such in public buildings.

Cellular communications is one of the fastest growing and most challenging telecommunication applications today. It represents a large and continuously increasing percentage of all new telephone subscribers around the world. In the long term, cellular digital technology may become the universal way of communication [1]. With respect to communication, the mobile phone is one of the most remarkable features of advancement. It plays a vital role in business and the economy, as well as in the personal and family lives of individuals [2]. Because of its being mobile, mobile phones can, amongst other things, save lives and provide security by making it possible to summon help quickly in an emergency, contact law enforcement or medical services and banks without having to visit such banks [3].

On the other hand, the advent of the cell-phone technology with the relentless push towards micro-miniaturization of devices increases the risk to exploit and misuse this technology for diabolical and illegal purposes [4]. For example, cell phones hidden in a meeting room, or on a person, lets a competitor listen in on company discussions. In a hospital, likewise, due to Electromagnetic Interference (EMI), when phones are near sensitive electronic equipment, important patient-care equipment can fail to perform properly, putting patients at risk. Most importantly, vis-à-vis education, the use of mobile phones as aids for cheating has somewhat become a menace. Consequently, a very real need exists today for individuals, businesses, institutions and the government to take measures to detect and identify the unauthorized use of cell phones within the bounds of their controlled premises.

The Cellular telephone (commonly mobile phone, cell phone or hand phone) is a long-range, portable electronic device used for mobile communication [5]. In addition to

the standard voice function of a telephone, current mobile phones can support many additional services such as SMS for text messaging mail, packet switching for access to the Internet, and MMS for sending and receiving photos and video. Most current mobile phones connect to a cellular network of base stations (cell sites), which is in turn interconnected to the public switched telephone network (PSTN) the exception is satellite phone [1].

Cellular telephone is also defined as a type of short-wave analog or digital Telecommunication in which a subscriber has a wireless connection from a mobile telephone to a relatively nearby transmitter. The transmitter's span of coverage is called a cell. Generally, cellular telephone service is available in urban areas and along major highways. As the cellular telephone user moves from one cell or area of coverage to another, the telephone is effectively passed on to the local cell transmitter. A cellular telephone is not to be confused with a cordless telephone (which is simply a phone with a very short wireless connection to a local phone outlet). A newer service similar to cellular is a personal communications service (PCS).

1.1 Concept of Mobile Phone

Mobile phone uses RF with a wavelength of 30cm at 872 to 2170 MHz that is the signal is high frequency with huge energy [1]. When the mobile phone is active, it transmits the signal in the form of sine wave, which passes through the space. The encoded audio/video signal contains electromagnetic radiation, which is picked up by the receiver in the base station. Mobile phone system is referred to as “Cellular Telephone system” because the coverage area is divided into “cells” each of which has a base station [1].

When a GSM (Global System of Mobile communication) digital phone is transmitting, the signal is time shared with seven other users. That is at any one second, each of the 8 users on the same frequency is allotted 1/8 of the time and the signal is reconstituted by the receiver to form the speech [2]. Peak power output of a mobile phone corresponds to 2 watts with an average of 250 mill watts of continuous power [2, 7]. Each handset with in a ‘cell’ is allotted a particular frequency for its use. The mobile phone transmits short signals at regular intervals to register its availability to the nearest base station. The network database stores the information transmitted by the mobile phone. If the mobile phone moves from one cell to another, it will keep the connection with the base station having a very strong transmission. Mobile phone always tries to make connection with the available base station. That is why the backlight of the phone turns on intermittently while traveling. This will cause severe battery drain. Therefore, in long journeys, the battery will run out within a few hours.

1.2 The Cell Phone Problem

In recent years, there has been growing recognition of the problem of contraband cell phones inside correctional facilities. These phones can be used to operate both internal and external criminal enterprises, threaten witnesses, harass victims, orchestrate uprisings, and undermine prison security by coordinating the activities of separated inmates.
Advances in compact wireless devices and high-bandwidth data services also pose an increasingly significant problem. A single individual could upload large quantities of data or photos using a cell phone smuggled into a correctional facility. A need clearly exists to monitor and control cell phone use within correctional facilities [5, 6, 13].

Based on the aforementioned studies, it was evident that many studies have been carried out on communicational, structural and hypothetical design and construction of mobile phone. However, the study on measuring the effects of unrestricted use of mobile phone is scanty. In this study, the effects of unrestricted mobile phone usage in specifically selected public buildings in Akure were assessed in order to determine the integrity of the public mobile phone users. Data were collected from specific public places in Akure using questionnaire administration and oral interview. Enquiries were made on the prominent effects of the mobile phone usage on the public, and the feeling of the listeners. The data obtained were analyzed statistically using descriptive statistics based on percentages. The rest of the paper is presented thus: the materials and methods used to analyze the system was presented in Section 2, results and discussion on the effects of unrestricted use of mobile phone in public building is given in Section 3, while conclusion is presented as Section 4

2. Materials and Methods

Data were collected from specific public places in Akure using questionnaire administration and oral interview. In the aspect of the questionnaire, three sets of questionnaire were used for the investigation. The first category was set in relation to examination halls seventeen questions were set here, the second category of questionnaire conducted for banking halls, twenty nine questions were set in this case, while for correctional facilities (police station’s cell and prison) twenty three questions were set. Enquiries were made on the prominent effects of the mobile phone usage on the public, and the feelings of the listeners. The data obtained were analyzed statistically using descriptive statistics based on percentages. The percentages responded to the targeted enquiries; T is calculated as the ratio of the total of actual response, R_a to the overall total of those responded to all the enquiries, R_o. That is,

$$T (\%) = (R_a / R_o) \times 100 \quad (1)$$

The validation of the results was carried out using paired-t test to determine whether there is a significant difference between the reactions of public on the targeted effects of unrestricting mobile phone usage.

3. Results and Discussion

Forty questionnaires based on phone usage in examination halls were distributed twenty seven were returned (67.5%), also out of forty questionnaires distributed to the

banks thirty three (82.5%) were returned, while for correctional facilities thirty three (82.5%) were returned out forty questionnaires. From these results, banks and correctional facilities have the highest percentage of questionnaires returned while examination has the lowest.

The figure 1 shows the effect of using mobile cell phone in the restricted buildings under consideration; threat and distractions took the highest percentage in the banking halls, followed by distraction and cheat; users of mobile phones in examination halls that use the phone to cheat will not reflect the true picture of the student's results and this is a serious cheat on the others that came to the examination hall without cheating. Also if the rate of cheating in the examination with mobile phones increases, most of the products produced from most of these result will not be contributing well to the society in terms of their academic performance; again threats in the correctional facilities are assumed to be the threat of the inmate that may easily plan prison brake or threaten any outsiders they have case with, or the judges that may want to decide their cases as clearly indicated on this chart.

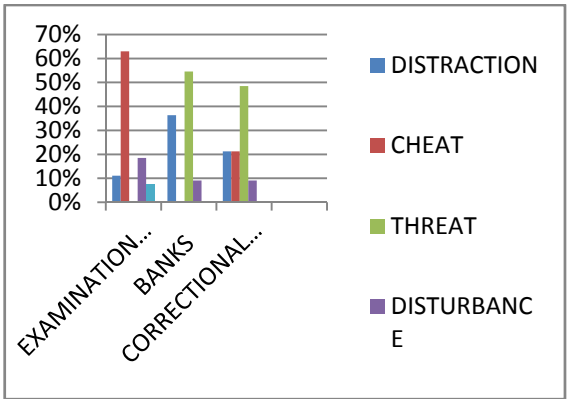

Figure 1: Effect of Usage

The result of the figure 2 depicts the seizures rate of mobile cell phones in those public buildings we considered for this research. The results show that those that voted OFTEN took the highest percentage in the examination halls. This indicates that mobile phone users (students) in examination halls do use the cell phones to cheat during the examination. With this rate of seizures in the examination halls there is the possibility that other unauthorized users(students) of cell phones may escape from the invigilators during the examination time, this implies that better equipment is needed that can be used to detect any unauthorized phone users during the examination. The result shows that phone were seized under those other two buildings (banks and correctional facilities) also, but the rate is low compared to that of examination halls. Better equipment will also be needed under these two buildings (banking halls and correctional facilities) for effective monitoring of unauthorized users of mobile phones in the areas.

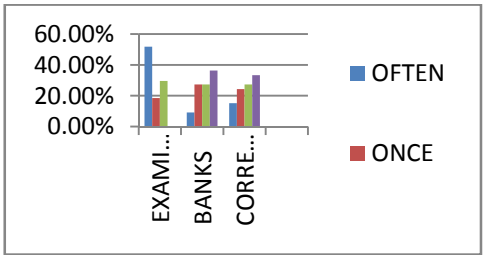

Figure 2. Seizure rate

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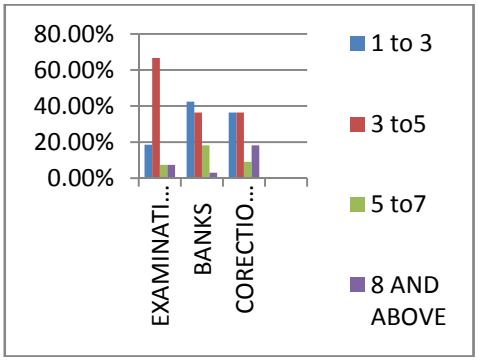

Figure 3. Phones seized

Figure.3 shows a clear reflection of the number of phones that were seized as at the time of this research. Those that seized eight phones and above took the highest percentage in the correctional facilities followed by examination halls and banking halls. Although, the percentage of the numbers of phone seized within 3-5phones took the highest with about 68% as compared to 18.5% of people that seized 8and above phones. The implication of these results is that more mobile phones were seized in examination halls than banking halls and correctional facilities.

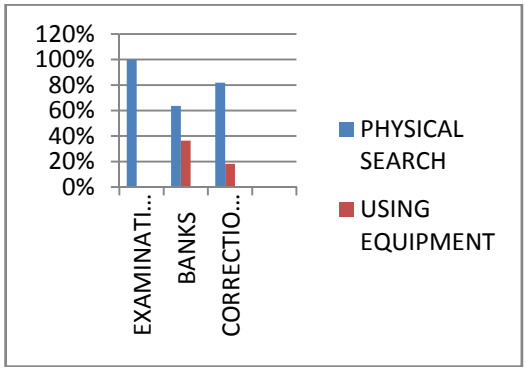

Figure 4. Methods used in detecting phone usage.

The results of the Figure 4 indicates that only two methods are in use under the public buildings we are considering, the physical search and using of equipment as shown in the chart. Examination halls use only physical search to detect the unauthorized users of mobile phones, this clearly shows that better device is recommend for the use in monitoring unauthorized users of cell phones that may escape physical search. Physical search took the nest position of method used in correctional facilities that followed banking halls. Both banking halls and correctional facilities were those using equipment to detect phone users, but an important observation has to be clearly made here that workers in the banking halls and correctional facilities told us in response to our questionnaire that equipment employed by them are just metal detectors. What these metal detectors do is to detect any metal object not necessarily mobile phone. It means better equipment that can be used to detect mobile phone users during the activities can be better suggested to the banking halls for effective monitoring of the unauthorized users. In addition, in the case of correctional facilities, it means this equipment stated by the banks will not be effective for detecting phone users during usage since it can only detect it when the metal detectors are in contact with the cell phones. It means an effective device will be needed which is capable of continuous scanning the whole prison specifically to detect signals of the mobile phone during the usage.

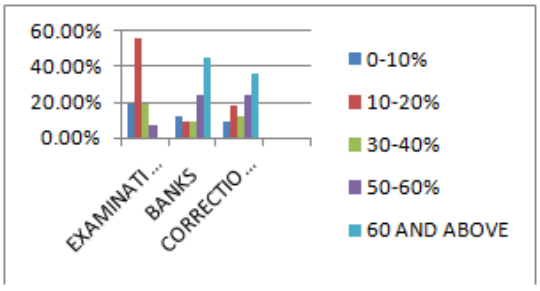

Figure 5. Effectiveness of physical search

Figure 5 shows effectiveness of using physical search under public buildings in this study. It shows that under correctional facilities and the banking halls; physical searching is quite effective as compared to banking halls. It was shown that the effectiveness of detecting mobile phones was higher; this was 50-60%and above, while for examination halls the effectiveness of physical searching was between 10-40%. This shows that physical searches are more effective in banks and correctional facilities than examination halls. Despite these, it has been proved that better equipment is needed in the three public buildings in the research.

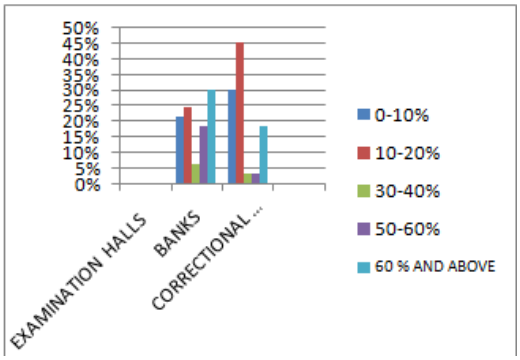

Figure 6. Effectiveness of equipment used in detecting mobile phone

Figure 6 shows the effectiveness of using equipment under those public buildings. Examination halls did not use any equipment in detecting mobile phones as earlier said; so better equipment like phone sniffer is suggested to monitor activities of unauthorized mobile phones users. The analysis of the result shows that the use of equipments currently is not effective .30-40% took the highest votes, which is relatively low when compared to the negative effect of using mobile phones in the areas under consideration. The ineffectiveness of this equipment can be further proved as illustrated in the banks with just 30%votes. 10-20% voted for the effectiveness of equipment. It has been explained earlier on that usage of equipment in the banking halls are not effective , as it is only to detect any metal object at the entrance.

4. Conclusions

The effects of the unrestricted use of mobile phones in public places were assessed in order to forestall adverse consequences of using such in public buildings. The assessment of the effects of mobile phone usage was carried out on selected public buildings in Akure the capital of Ondo state Nigeria, namely; examination halls, banking halls, and detention centers (police station cell and prison halls). Data on prominent effects of the mobile phone usage in the public places were collected using questionnaire and oral interview schemes. The analysis of the data was done by applying statistical tools based on percentages. The findings from the results showed that there was variability in the degrees of adverse consequences of mobile phone usage in the places considered. Cheating took highest position in examination halls while the use of mobile phone greatly leads to threats, which eventually affected the investigation at the police station. The analysis further showed that there is a significant difference on the effects of mobile phone usage in the respective public places investigated, where threatening effects played prominent role. This showed that a good mechanism is required in checkmating indiscriminate use of mobile phone in public places to avoid public indiscipline.

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