ELECTRONIC MONITORING AND EMPLOYEES' PERFORMANCE OF DEPOSIT MONEY BANKS IN CALABAR METROPOLIS, CROSS-RIVER STATE- NIGERIA

AKAA SAMUEL TERZUNGWE
Department of Business Management
University of Calabar
Calabar-Nigeria
samuelakaa@unical.edu.ng

NOMHWANGE SIMEON TERHILE Department of Business Administration Joseph Saawuan Tarka University Makurdi-Nigeria +2347038469506

nomhwangesimeon@gmail.com

ADUKANYA SALIFU TIJANI
Department of Business Administration
Joseph Saawuan Tarka University
Makurdi-Nigeria

IORBEE IGBAWASE IORBEE
Department of Business Administration and Management
Ashi Polytechnic, Anyiin-Benue State

Abstract

This study examined the effect of electronic monitoring on employees' performance of Deposit Money Banks in Calabar Metropolis, Cross-River state-Nigeria. Specifically, the study investigated the effect of software monitoring, video surveillance and biometric technology on employees' performance of deposit money banks in Calabar Metropolis. The study is anchored on Foucalt's theory of Pantopticon developed further by Botan. The population of the study is made up of all the employees' of the five selected banks in Calabar Metropolis. A sample size of 268 determined using Taro Yamane's (1967) formula and was distributed to individual banks using Bouley's (1964) population allocation formula. Data was collected through a structured questionnaire and analyzed with Multiple-regressions with the aid of statistical packages for social sciences (SPSS) version 21. The result of the study indicates that electronic monitoring through software monitoring; video surveillance and biometric technology have positive and significant relationship with employees' performance. Based on the findings of the study, it is safe to conclude that, the adoption of electronic monitoring through software monitoring, video surveillance and biometric technology has improved employees' performance of deposit money banks in Calabar Metropolis of Cross-River State-Nigeria. In line with the conclusion, it is recommended that Deposit money banks in Nigeria should adapt software/computer monitoring, video

surveillance and biometric technology, implement it appropriately and constantly modify it, so as to improve their employees' performance.

Keywords: Effect, Electronic Monitoring, Deposit Money Banks, Video Surveillance, Biometric Technology, Employees, Performance.

INTRODUCTION

1.1 Background of the study

Electronic monitoring is becoming increasingly widespread and affects many employees around the world. It has become one of the most debated topics in the world of work today. The use of technology today is deemed the major foundation for organizational growth (Davis & Harveston, 2000). The success in large firms as well as small and medium enterprises has been accredited to the underlying IT infrastructure which complements human workforce in key areas such as communication, marketing, research, security, production, service delivery among others. With the improving technology, managers are keen on capturing more data, which can be analyzed to obtain meaningful insights, for research or to make decisions that improve organizational performance (Ghasemaghaei et al, 2015). This is known as big data. Because the value of digital data is continuously increasing, there are new methods and tools to summarize information from multiple databases into a single repository. This is known as data warehousing (Prakashan, 2003).

Electronic surveillance is one key method that organizations use to collect employee data. Electronic Monitoring Systems have been widely embraced by most organizations globally. Managers and supervisors have switched to the use of such systems so as to gather employee performance data. This data is important to management as it forms basis of employee compensation, rewards and promotions in some organizations. The need to adopt Electronic Monitoring Systems in the workplace has been driven by the managers' need to keep track of employee activities within the organization premises. In some cases, for example in manufacturing companies, managers may want to monitor how active the workers are towards meeting their targets, or just carry out surveillance to prevent employee pilferage and ensure security of company assets. Presently, approximately twenty six million employees in the United States are under surveillance in their workplaces, and this number will rise with increase in computer use within organizations, as well as the declining cost of acquiring these monitoring systems (DeTienne, 1993).

Workplace Surveillance is the gathering of personal data for detailed analysis. It involves the use of various surveillance methods to capture information about the activities and track movement of employees. Rule & Brantley (1992) in their definition, referred to workplace surveillance as "any systematic monitoring in which each individual's job performance with an eye to ensuring compliance with management expectations". According to Grimmett (2014), employee monitoring is all about storage, analysis and reporting of information about an employee's actions, which may include their computer usage as well as their movements within the workplace premises. Employers may continuously monitor the behavior and communications of employees in the workplace if not restricted by policy (Dempsey, 2007). This practice is not new to organizations today, given increasing complexity of the technology we use.

Monitoring and surveillance are two words which are mostly used interchangeably and are often confused (Reilly, 2010). Botan and McCreadie (1993) sought to distinguish between monitoring and surveillance as stated by Attewell (1987) and made a conclusion that the term monitoring is generic and can be applied to all automated collecting of information about work, notwithstanding the purpose. Monitoring produces information that can be used in making decisions on bonuses, keeping an eye on inventory and monitoring individual employees. On the contrary, surveillance basically refers to a connection between some authority and those whose performance it wishes to control (Rule & Brantley, 1992). All information used in surveillance is generated from monitoring. All surveillance incorporates monitoring, but not all monitoring is used for surveillance.

The ever improving technologies have brought about change in the way normal activities are carried out in the workplace. From the employee perspective, there have been increased risks relating to employee misconduct, whereas from the management perspective, there has been development of tools to address such misconduct (McHardy, Giesbrecht, & Brady, 2005). There is a steady increase in usage of workplace surveillance systems. There are a number of employee monitoring methods and tools used by management to carry out employee surveillance in American workplaces (Mishra & Crampton, 1998). Despite the privacy concerns raised by employees, the law seems to favour the employers.

Workplace surveillance has brought about concerns from all areas of society. A number of groups and professionals have their own arguments and reasoning regarding the practice. The common questions raised by these interest groups are whether or not to monitor employees at work, and if at all monitoring leads to higher productivity (Martin & Freeman, 2003). Other concerns raised are on what actions specifically are to be monitored and what methods of monitoring are considered acceptable (Yerby, 2013). Whereas managers and proponents of workplace surveillance argue that it is a means to boost productivity, a good number of employees see it as a violation of privacy. Implementing workplace surveillance systems has not received overwhelming support and according to Watson (2001), labour unions and other activist groups still complain about employee monitoring, associating it with low employee morale and stress.

In addition, there are questions seeking to establish how the gathered information is to be used by management and for what purpose, with employees fearing bias or discrimination by employers (U.S. Congress, 1987). Legal concerns have also been raised seeking to limit employers to monitor up to a certain degree.

Despite the exceeding concerns, there are some who support employee monitoring, viewing it as an effective management technique that helps employees to be productive and ensure quality customer service (Levy, 1994).

1.2 Statement of the Problem

Monitoring of employees' work activities by management has raised a lot of issues, bordering from ethical issues. There is a blurred line between what constitutes electronic monitoring and intrusion into employees' privacy, legal issues; in many countries, there are laws guiding the usage of electronic monitoring-although there are no such laws in developing countries to

health issues; overzealous monitoring has been attributed to be the cause of many work related stress disorders.

There are still several reasons for monitoring the work activities of employees. Overtime employee monitoring reports have been the yardstick of evaluating work performance and assessing employees' work output (Thompson Sebastianelli, and Murray, 2009), limiting employer or management liability for employee misconduct, ensuring that employees' work activities are in line with organizational procedures. Employee monitoring can be seen as a motivating factor for effective work performance, promotion and increasing pay check (Reaves, 2014).

Electronic monitoring of employees is a strongly debated topic since the 1980's (e.g. Irving et al., 1986; Tamuz, 1987). What is more, advances in technology led over the years to cheaper, more efficient, and easier to implement monitoring systems that resulted in higher numbers of electronically monitored employees. For example, in algorithmic management an algorithm distributes tasks, regulates work processes, and controls performance. This management style is more and more widespread in technology corporations and cannot work without collecting data on employees' behavior (Galière, 2020; Möhlmann & Zalmanson, 2017). This way, monitoring is present in a greater intensity and extent than previously seen.

Whereas proponents of electronic monitoring stress advantages like fair performance evaluation, improved security of employees, and higher accountability, opponents emphasize disadvantages like reduced employees' well-being (Ball, 2010; Ravid et al., 2019; Sewell & Barker, 2006; Yost et al., 2018). Research on electronic monitoring reflects these different stances: Some studies find detrimental effects not only on employees (Ball & Margulis, 2011; Cascio & Montealegre, 2016; Ravid et al., 2019; Stanton, 2000; Yost et al., 2018), but also on supervisors and organizations (Reilly, 2010; Yost et al., 2018); according to other studies, electronic monitoring increases well-being, performance, and job satisfaction, especially if used in a developmental and supporting manner. The increasing use and intensity as well as these different effects of electronic monitoring make a quantitative and systematic research synthesis desirable.

Based on the information from the background, it is revealed that electronic monitoring of employee activities at work is quite beneficial. However, there are still conflicting arguments on the relationship between electronic monitoring and employee performance in the work place. While others are of the view that it positively impacts employee performance, a good number of scholars are of the view that there are also negative effects of electronic monitoring on workers performance. In a quest to eliminate these gaps, this study is conceived and put in place to examine the effect of electronic monitoring on employees performance of Deposit Money Banks (DMBs) in Calabar Metropolis, Cross-River state-Nigeria.

1.3 Objectives of the Study

The broad objective of the study is to examine the effect of electronic monitoring on employees performance of Deposit Money Banks in Calabar Metropolis, Cross-River state- Nigeria. The specific objectives are as follows;

- i. To determine the effect of software monitoring on employee performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria;
- ii. To examine the effect of video surveillance on employee performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria; and
- iii. To investigate the effect of biometric technology on employee performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria.

1.4 Statement of Research Hypotheses

The researcher formulates the following hypotheses for the study and they are stated in null form;

- i. Software monitoring has no significant effect on employees' performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria;
- ii. Video surveillance has no significant effect on employees' performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria; and
- iii. Biometric technology has no significant effect on employees' performance of deposit money banks in Calabar Metropolis, Cross-River state- Nigeria.

LITERATURE REVIEW

2.1 Theoretical framework

2.1.1 Foucalt's Theory of Pantopticon

The study is anchored on Foucalt's theory of Pantopticon developed further by Botan. Michel Foucalt adopted the Panopticon model originally developed by Bentham in the mid-19th century for prisons and later adopted by schools, hospitals and business organisations to explain how organisations are structured and organized in such a way that they exercise control over the activities of their members and employees, through the knowledge gained from monitoring them. With this knowledge in the hand of the observers-in this case the management or employers, members would be unable to resist such power the organisations exercise over them, thereby rendering subservient to the management. Instead of using violent methods such as torture, placing prisoners in dungeons as used in traditional societies, the Panopticon offered a more powerful form of internalized coercion which was achieved through the constant observation of prisoners, each separated from the others allowing minimal communication. This structure allows guards to observe each cell from their vantage position in a high central tower, unseen by the prisoners. Constant observation acts as a control mechanism and a consciousness of constant surveillance is internalized by the prisoners.

The adoption of the Panopticon in formal organisations follows the same patterns except for the high security towers where the guards monitoring the prisoners are replaced with the use of video surveillance, cameras and public address systems, and other forms of electronic monitoring techniques are used where erring workers can quickly be seen and disciplined. According to Foucalt (1977), the result of this surveillance is acceptance of regulations and docility- a normalization of sorts, stemming from the threat of discipline. Suitable behaviour and effective work performance is achieved not through total behaviour but rather through a "panoptic" discipline and inducing the employees to conform by internalizing the reality. This surveillance affects employees to initiate ideas and actions in the workplace and also kill creativity as employees feel constantly being monitored; they would be unable to use their

initiatives to solve issues that may arise in the workplace due to fear; they go against organisation policy, while the same makes the observer (in this case the management) more powerful.

The actions of the observers/ the management toward the employees are based on constant monitoring and behaviour being exhibited. This power comes from the knowledge the observer has gained through constant monitoring of the employees, therefore such power over the employees may lead to suppression of ideas and oppression on the part of the management and the same time can lead to alienation and fear of being sacked by the management essentially turning the employees to 'Robots'. As the observed begins to think and act in terms of the observer, every action, thought, and word is analyzed before being acted upon for potential scrutiny by future or current observers due to the fear of being under surveillance; in other words, the observer does not even have to exist. The mere thought of being under surveillance can cause people's actions, thoughts and even minds to change. The observed would sooner begin to act the way the observer wants him to act.

Baton (1996) observed further the effects noted in the physical panopticon can also be observed with the use of electronic surveillance, an effect he described as ELECTRONIC PANOPTICON. Like in the physical structure of Bentham's panopticon (Foucault, 1977), the inhabitants of the electronic panopticon are always visible and subject to the monitoring gaze of an authority, which in this case is always out of sight, though their equipment and means of monitoring can be seen. They are unable to know when they are being observed or not, whether these electronic forms are actually working or just there as deterrence. Other common characteristics between the electronic workplace and panopticon is the "communicative isolation of occupants", though in the case of electronically controlled workplace, the isolation may not be physical in nature. People sitting next to each other focusing on their own computer terminal, working on an individual task that is individually timed and monitored, are just as isolated as the prisoners of the panopticon. Even if they have the physical capability to communicate, they cannot risk engaging in a type of behaviour that is not part of their job. The contrast between the visible and the invisible creates a special type of power relationship (panoptic relation), in which employees are vulnerable and they have no choice but to act as if they were being observed all the time, even when it is not also. Botan (1996) mentioned two panoptic effects on employees; the first is internal effects, such as stress, uncertainty, a sense of vulnerability, or lack of privacy and the second is external, or behavioural (Botan and Vorvoreanu, 2000).

2.2 Conceptual Framework

2.2.1 Electronic Monitoring

Electronic monitoring (EM) is an overarching term that describes modes of surveillance through which the location, movement or behaviour of specific individuals can be monitored within the boundaries of the criminal justice system (Nellis and Lehner, 2012). According to the Texas Code of Criminal Procedure (2009, S42.12.2(4)) "electronic monitoring includes voice tracking systems, position tracking systems, position location systems, biometric tracking systems, and any other electronic or telecommunications system that may be used to assist in the supervision of individuals." Contemporary modes of EM include satellite, radio wave or

biometric tracking, customarily consisting of a device attached to the offender and remotely monitored (Nellis and Lehner, 2012).

Electronic monitoring has remained a constant and important feature in business organisations. The adaption of information and communication technologies (ICT) facilities to monitor employees has revolutionized the means by which electronic monitoring is carried out. These forms of monitoring collectively known as electronic monitoring or e-monitoring have been found to be more effective and cheaper than other forms of electronic monitoring (Lease and Gordon, 2005). Electronic monitoring immensely benefits the organization, employers and employees respectively especially as a useful tool for performance and productivity appraisal and evaluation.

2.2.2 Dimensions of Employees' Monitoring

Electronic monitoring can be carried out using various methods for instance: Monitoring internet usage, capturing number of keystrokes using specialized software, video surveillance, computer and phone monitoring (Mishra & Crampton, 1998). For the purpose of this study, the dimensions are software/computer monitoring, video surveillance and biometric technology.

2.2.2.1 Software/Computer Monitoring

This is one of the most widely used methods. **Computer monitoring** refers to the processes and systems used to watch over and record user activity on a PC. Employers use computer monitoring to monitor their employees' productivity, adherence, and conduct at the workplace. It's suitable for both in-office and remote work teams.

With the ever improving technological trends, managers are capable of monitoring their staff in the workplace in more depth than ever before (Hinds, 2012). Managers can determine to what extent they monitor user workstations. For instance, monitoring keystrokes will provide managers with information on how a specific employee is performing within a set timeframe, monitoring idle time will provide information on how long an employee spends off work computer and thus analyze the productivity. There exists application software that monitor workstation screens and provide information on access to the hard disks, software installations on the terminals, file uploads and downloads. With these systems the managers can monitor computer usage during work hours (Privacy Rights Clearinghouse, 2016), which will allow them to log all keystrokes and capture screenshots of users' cyber activities thus showing the keys as typed when sending emails, word processing, online chat sessions and much more.

2.2.2.2 Video Surveillance (CCTV)

Among the commonly used surveillance methods is video surveillance, also known as closed circuit television (CCTV) surveillance. The cameras can be placed in easily noticeable areas but in some cases they are hidden, thus employees may never know that their behavior and movements are being monitored. In a survey carried out by the Society for Human Resource Management on whether it's an employer's right to use video surveillance, approximately 40% of the respondents were in favour of the same (Losey, 1994). Videotaping of employees can be within or outside the workplace premises (Ciocchetti, 2011). CCTV surveillance can

also be integrated with the automated door access systems in order to track employee movement within the workplace premises.

Video surveillance in the workplace protects both the company and its employees. In 2010, on average, 10 cameras were installed in a commercial setting, and the average total cost for a video surveillance installation was \$13,280, according to the Security Sales and Integration website.

2.2.2.3 Biometric Technology

Biometrics refers to the automatic identification of a person based on his physiological/behavioural characteristics (Crowell, 2002). This method of identification is preferred for various reasons; the person to be identified is required to be physically present at the point of identification. Identification based on biometric techniques obviates the need to remember a password or carry a token (Swanirbhar, & Saurabh, 2016). With the increased use of computers or vehicles of information technology, it is necessary to restrict access to sensitive or personal data. By replacing Personal Identification Number, biometric techniques can potentially prevent unauthorized access to fraudulent use of Automated Teller Machine, cellular phones, smart cards, desktop PCs, workstations, and computer networks. Personal Identification Number and passwords may be forgotten, and token based methods of identification like passports and driver's licenses may be forged, stolen, or lost. Thus, biometric systems of identification are enjoying a renewed interest. Various types of biometric systems are being used for real–time identification; the most popular are based on face recognition and fingerprint matching. However, there are other biometric systems that utilize iris and retinal scan, speech, facial thermo grams, and hand geometry.

2.2.3 Employees' Performance

At its most basic, a performance evaluation is simply providing constructive feedback on whether an employee is underperforming, meeting, or exceeding the goals and objectives of their job. Employees need this feedback so they can feel confident knowing what is expected of them as well as how and where they can improve (Shields, et al., 2014). Job goals evolve over time; Good collaborative performance reviews arise from sitting down with your employees to update personalized goals and objectives. Together you can agree on the best ways, or metrics, to measure the performance. Some activities are relatively easy to measure, such as reaching a specific sales volume. Others might be more subjective, such as the ability to solve customer complaints in a way that preserves long-term loyalty (Clark & Guerin, 2015). Employees performance is an evaluation process, whether a person executes their duties and responsibilities well, many companies asses their employees performance on quarterly or on an annual basis in order to define certain areas that need improvement. Often one combines both oral and written element, hence management evaluates and provides feedback on employee job performance, redirecting activities and involving steps to upgrade as needed. Performance is a critical factor in organizational success (Erez & Judge, 2001). For people to progress at work and other aspect of life, there must be cooperation and communication which is essential to ensure task attainment and stability in life. It is increasingly being recognized that planning and an enabling environment have a critical effect on employee performance, with performance goals and standards, appropriate resources, guidance and support from the managers all being central (Purkayastha & Chaudhari, 2011). Measuring

performance is of great importance to an incentive plan because it communicates the importance of established organizational goals.

The traditional human resource management approach to enhancing workers performance has centered on the assessment of past performance and the allocation of reward. That is, rewards were provided in exchange for performance. It is inevitable that workers performance improvement is something of direct interest only to management. Performance therefore becomes stereotyped as something of no intrinsic interest to the person doing the work. Performance is a reward. There are many small initiatives everyday that help to improve workers performance. It is critical that the organisation selects the most useful measure of performance for the organisation as a whole and for the individuals within it. Single measures are unlikely to be sufficiently robust.

3.0 METHODOLOGY

The study adopted a cross-sectional research design. The population of this study consisted of the entire 811 staff of the selected deposit money banks. The selected banks are; FIRST BANK OF NIGERIA LIMITED (FBN); GUARANTY TRUST BANK LTD (GTB); ACCESS BANK PLC (AB); UNITED BANK FOR AFRICA PLC (UBA) and ZENITH BANK PLC (ZB). The breakdown of the population of the companies is as follows:

Table 1: Staff Population of selected DMBs in Calabar metropolis

NAME OF BANK	NO OF BRANCHES	TOTAL NO OF
		EMPLOYEES
FIRST BANK OF NIGERIA	9	327
LIMITED		
GUARANTY TRUST	2	112
BANK LTD		
ACCESS BANK PLC	3	148
UNITED BANK FOR	3	126
AFRICA PLC		
ZENITH BANK PLC	3	98
Total	20	811

Source: Human Resources of the organizations. Authors' computation, 2022

Sample and Sampling Technique

The sample size for this study was determined using Taro Yamane's (1967) formula:

$$n = \frac{N}{1 + N (e)^{2}} - - - (1)$$
Where;
$$n = Sample size$$

N = Population of study

e = Level of significance (tolerable error) at 5%

1= Constant

$$n = \frac{811}{1+811(0.05)^2}$$

$$n = \frac{811}{1+811(0.0025)}$$

n =
$$\frac{811}{1+2.075}$$

$$n = 267.8$$

n = 268 (Sample Size of the Study)

The individual sample size per organization was determined using Bourley's (1964) population allocation formula as recommended by Asika (2006):

$$nh = \frac{nNh}{N} - - - (2)$$

Where,

nh = the number of unit allocated to each category of respondent

Nh = the number of population in each category of respondents

n = the total sample size

N = the total population of the study

FBN:
$$= 811 = 108$$
GTB:
$$= \frac{268 \times 327}{811} = 37$$
AB:
$$= \frac{268 \times 112}{811} = 37$$

$$= \frac{268 \times 148}{811} = 49$$
UBA:
$$= \frac{268 \times 126}{811} = 42$$

ZB:
$$= \frac{268 \times 98}{811}$$

$$108 + 37 + 49 + 42 + 32 = 268.$$

Model Specification

This study suggests that DMBs employees' performance is a function of Electronic Monitoring;

EP = f(EM)(i)

Where,

EP= Employees' Performance (dependent variable)

EM= Electronic Monitoring (independent variable)

Given that electronic monitoring comprises three dimensions, the implicit form of the model is given as follows:

$$EP = f (SM, VS, BT)$$
....(ii)

Where.

SM= Software Monitoring

VS= Video Surveillance

BT= Biometric Technology

Thus, the explicit form of the model for the studywill be as follows:

$$EP = \alpha + b1SM1 + b2 VS + b3BT + \epsilon$$
....(iii)

Where,

 α = Intercept of the Model (constant) b1 to b3 = coefficients of SM, VS, BT respectively ϵ = error term

4.0 RESULTS

4.1 Regression Analysis Result

The model summary, Study of Variance (ANOVA), and regression coefficient were used to present the results of the regression analysis.

Table 2: Model Summary

M odel	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	.813a	.661	.656	.43471	1.801

a. Predictors: (Constant), Software Monitoring, Video Surveillance, Biometric Technology

b. Dependent Variable: Employees' Performance

Source: SPSS Data Output, 2022.

The result in Table 2 showed that the regression coefficient (R = .813) indicates a positive relationship between the predictor variables and the dependent variable. The coefficient of

determination (R²) was .661 which implies that 66.1 % of the variation in Employees' Performance is explained by Software Monitoring, Video Surveillance and Biometric Technology which are the independent variables in the study.

Table 3: Analysis of Variance (ANOVA)

M	Iodel	Sum of Squares	Df	Mean Square	F	Sig.	
n	Regressio	76.528	3	26.509	140.284	.000ь	
	Residual	40.817	216	.189			
	Total	117.345	219				

a. Dependent Variable: Employees' Performance

The result of the analysis of variance as presented in Table 3 showed that the value of F (140.284) is significant and the significance level (.000) which is less than 0.05 (P-value = < 0.05). This implies that over all regression model is statistically significant, valid and fit. The valid regression model indicates that all independent variables (Software Monitoring, Video Surveillance, and Biometric Technology) are capable of explaining the changes in employees' performance of DMBs in Calabar Metropolis of Cross-River State, Nigeria.

Table 4: Regression Coefficients

Model	Unstandardized Standardized	Coefficients				
Coefficients	В	Std. Error	Beta	Т	Sig.	
(Constant)	.179	.164		1.089	.277	
SM	.156	.054	.135	2.893	.004	
VS	.673	.045	.709	15.115	.000	
BT	.144	.042	.139	3.409	.001	

a. Dependent Variable: Employees' Performance

Source: SPSS Data Output, 2022.

The regression coefficient result presented in Table 4 shows that, Software Monitoring, Video

b. Predictors: (Constant), Software Monitoring, Video Surveillance, Biometric Technology **Source:** SPSS Data Output, 2022.

Surveillance, Biometric Technology significantly predict the employees' performance of DMBs in Calabar Metropolis. The regression coefficient indicates that a change in Software Monitoring would affect Employees' Performance by 15.6 %, a unit change in Video surveillance would affect Employees' Performance by 67.3 % and a unit increase in biometric technology would increase Employees' Performance by 14.4 %. The result therefore implies that the three electronic monitoring systems (Software Monitoring, Video Surveillance, Biometric Technology) have significant effect on employees' performance but video surveillance has more significant effect as shown by the above result.

4.2 Test of Hypotheses

Hypothesis one (1) which states that software monitoring has no significant effect on employees' performance of DMBs in Calabar Metropolis of Cross-River State was rejected (β = 0.156; p<0.05) and we conclude that there is positive significant relationship between software monitoring and employees' performance of deposit money banks in Calabar Metropolis of Cross-River State-Nigeria.

Hypothesis two (2) which states Video surveillance has no significant effect on employees' performance of employees' performance of deposit money banks in Calabar Metropolis was rejected (β = 0.673; p<0.05). This result implies that there is positive significant relationship between video surveillance and employees' performance of deposit money banks in Calabar Metropolis of Cross-River State-Nigeria.

Hypothesis three (3) states that biometric technology has no significant effect on employees' performance of deposit money banks in Calabar Metropolis and the strength of the relationship between the variables was (β = 0.144; p<0.05) hence the null hypothesis was rejected. Therefore, we conclude that biometric technology significantly affects employees' performance of deposit money banks in Calabar Metropolis of Cross-River State-Nigeria.

4.3 Findings

Result of the study shows that software/computer monitoring has considerable effect on employees' performance of DMBs in Calabar metropolis. Results collected from the respondents indicated that software monitoring is positively related with employees' performance. The use of computer monitoring will enable management of DMBs to supervise the performance of their employees'.

Findings of the study also revealed that video surveillance has significant effect on employees' performance of DMBs in Calabar metropolis. Analysis of results collected from the respondents indicated that video surveillance is positively related with employees' performance.

Results of the study further indicated a positive effect of biometric technology on employees' performance of DMBs in Calabar metropolis. Results collected from the respondents indicated that software monitoring is positively related with employees' performance.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study investigates the effect of electronic monitoring on employees' performance of DMBs in Calabar Metropolis of Cross-River State-Nigeria. Based on the findings of the study, it is safe to conclude that, the adoption of electronic monitoring through software monitoring, video surveillance and biometric technology has improved employees' performance of deposit money banks in Calabar Metropolis of Cross-River State-Nigeria.

5.2 Recommendations

In line with the conclusion, it is recommended that;

Deposit money banks in Nigeria should adapt software/computer monitoring, implement it appropriately and constantly modify it, so as to enhance their employees' performance; Deposit money banks in Nigeria should adapt video surveillance, implement it appropriately and constantly modify it, so as to improve their employees' performance; and Deposit money banks in Nigeria should adapt biometric technology, implement it appropriately and constantly modify it, so as to increase their employees' performance.

REFERENCES

- Botan, C and Vorvoreanu, M. (2000). What are you really saying to me? Electronic Surveillance in the work place. In: Conference of the International Communication Association Conference, Acapulco, Mexico.
- Botan, C.H. (1995). Electronic surveillance in the workplace: Predicting panoptic effects on employees. In: Speech Communication Association Conference, El Paso, TX.
- Botan, C.H. (1996). Communication work and electronic surveillance: A model for predicting panoptic effects. *Communications Monographs* 63(4):293-313.
- Chinedu, I.O. (2013) Practical Guide to Research Methodology in Management. Onitsha Nigeria: *Good Success Press*
- Clark, M. M. and Guerin, L. (2015). The Employee Performance Handbook: Smart Strategies for Coaching Employees. London, UK: Sage Publishers.
- Crowell, K. (2002). Importance of biometric Technology. Carnegie Mellon University
- Foucalt M (1977). Discipline and Punish-translated by Alan Sheridan. New York: Pantheon.
- Hair, J.F., Money, A.H., Samuel, P. and Page, M. (2007). Research method for Business. West Susex, England: John Wiley and Sons Ltd.
- Hinds, A. (2012). Computer Monitoring In The Workplace and Your Privacy. Your Privacy.
- James, M., Rehg and Takeo, K. (1993). DigitEyes: Vision-Based Human Hand-Tracking. School of Computer Science Technical Report CMU- CS-93-220, Carnegie Mellon University
- Mishra, J. M., & Crampton, S. M. (1998). Employee monitoring: Privacy in the workplace? S.A.M. *Advanced Management Journal*.
- Segen J. Segen, S. and Kumar, J. (1999). Shadow gestures: 3D hand pose estimation using a single camera.
- Sheetal, V. and Chander, K. (2012). Biometric Recognition system: An introduction. Department of computer science and applications k.U; Kurukshetra, Haryana, India.
- Shields, J., Brown, M., Kaine, S., Samuel, C. D., Samardzic, A. N., McLean, P., . . . Robinson, J. (2014). Managing Employee Performance and Reward: Concepts, Practices, Strategies. Cambridge, UK: Cambridge University Press.

- Swanirbhar, M. and Saurabh, P. (2016). Biometrics: Concepts, Methodologies, Tools and Application. Management Association, Information Resources. IGi Global Publisher. ppp 1852.
- Trucco E. (1998). Introductory Techniques for 3D Computer Vision. Prentice-Hall, Vision and Pattern Recognition.
- Zhang, Z. Shan, Y. and Shafer, S. (2001). Visual panel: Virtual mouse keyboard and 3rd controller with an ordinary piece of paper. In Proceedings of Perceptual User Interfaces.