

Adoption of Electronic Monitoring Supervision

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Received February 12, 2022; Revised March 17, 2022; Accepted March 25, 2022

Abstract With respects to employees' computers activity, do you know who, where, when and what goes on in case you are not monitoring in your organization? It simply takes a solitary unmonitored PC to leave a security hole in your institution. This study intended to recommend use of an electronic monitoring supervision. Data analysed showed that the Faculty and support Staff have different opinion in regard to adoption of electronic monitoring supervision. The research found out among other findings that organizations had faced various problems related to unsupervised use of the internet, staff of the organization did not mind to be monitored and that an electronic monitoring supervision should be adopted. The Research recommends adoption of electronic monitoring supervision and an electronic monitoring supervision framework was developed to aid in the adoption.

Keywords: *electronic monitoring, electronic monitoring supervision, institutional factors, ethical/legal issues, framework*

Cite This Article: Ruth Chepkirui Kosgei, Gregory W. Wanyembi, and Harisson Bii, "Adoption of Electronic Monitoring Supervision." *Journal of Computer Sciences and Applications*, vol. 10, no. 1 (2022): 1-5. doi: 10.12691/jcsa-10-1-1.

1. Introduction

Someone at our workplace may listen or watch us today. Employers use various methods and technology to monitor and supervisor what their employee do, see, listen to at work'. Electronic monitoring supervision is whereby users of computers are monitored electronically rather than use of human supervisors. Some institutions may use computers to observe the quantity of keystrokes an information section representative finishes in a day or screen the time taken by a client accessing individual takes to deal with a call. Best of observing framework executed that relies upon the sort of working environment. Numerous organizations feel that employees checking have helped increment productivity, foster client assistance and further develop the assessment cycle of the representatives [1]. Nonetheless, stress and other human perspectives ought to likewise be viewed as while picking an observing framework. It is unethical to view employees and the equipment they use. It is up to each organization to implement a monitoring policy and inform all their employees of their intentions.

Technology has been improving faster, helping employers to use electronic devices to monitor their employees. Employers based on reasonable suspicion or legitimate organization need, can monitor their employees. Protected and productive working environment upkeep expects associations to watch out for representative exercises. In case employees are left alone this could present damage to other people or make risk for the organization [4]. One way for an organization to keep up with effectiveness and

lower obligation is for the organization to screen its employees". Besides monitoring, employees need to be cultured to monitoring to appreciate the absence of privacy that currently applied at work without feeling offended. Employees need also to appreciate how technology works, its capabilities and limitations. Employers must explain to their employees what and why they should monitor and allow them give suggestion on how they should be monitored.

1.1. Electronic Monitoring Supervision

EMS is the act of listening and seeing of employees' actions during working hours using employer resources. [8], said employees may use the Institutions internet facility to do personal online shopping, watch video and movies at the expense of the employer. Some use the computers to perform individual work instead of using the resource including time in the company's work. There are software that can be used to aid supervise/inspect what these employees are doing at the work place. This software operates by recording key strokes plus all the deletes and updates so that the information can later be used to interpret the action of the employees. Other software can be used in monitoring network for example blocking spam and viruses detrimental to employee productivity and company's records [12]. There are various types of monitoring but this study focused on two types namely: computer activity and internet use.

1.2. Computer Activity

This is the use of software to record information about how an employee is working. The software monitors key

hit, errors, time spent, where accessed, the e-mail accounts seen and so on. Reviewing employees collected information can also reveal a lot about the employees. This is important because their performance can be linked to the time spent on the computers. An employee may spend more time while doing work beneficial to company, while others can spend equal time but more time is spent on personal work [3]. The use of Electronic Monitoring Supervision can prevent such situation from affecting employee at the workplace.

1.3. Internet Use

The today's main means of communication is the internet through electronic mail, social media, yammer one Note, Skype, Outlook and so on. The misuse of the media can result in work time loss hence low performance, [11]. Currently employer can monitor employees' means of communication through the internet for various reasons, [2]. Some of these reasons includes: (i) monitor productivity, (ii) check for any assault and workplace violence (iii) capture use of offensive words and or watch unwanted video (iv) see if there is any passing of secret and confidential information belonging to the company.

2. Empirical Literature on Electronic Monitoring Supervision

Research has shown that there a lot of surfing internet for personal use and work not work-related activities. [9], stated that employee need not to travel outside the company's premise to visit the unwanted sites. They only need do virtual travel through cyber loafing. This can lead to a lot damage to the company's resources including the production time. There have also been cases where employee has been found leaking out confidential information. [6], researched on internet use by their employees and revealed that there was great reason to regulate internet use to reduce its abuse. However, Employees are concerned with their privacy in their workstation. [5], revealed that employees felt threatened by being too exposed through watching and listened to anytime, hence creating unhealthy work environment.

2.1. Security Concerns

The organizational liability is caused by electronic monitoring from fraudsters. Employees through electronic monitoring supervision are protected from job related harassment. If organizations well balances monitoring and privacy it will minimize stress which can be experienced by employees in workplaces [7]. Employers need to come up with polices in relation monitoring activities, set privacy expectations and create reasonable work environment. There are added benefits for example protection of organizational assets, prevention of misuse of organizational resources and protection from legal liability if electronic monitoring supervision is used in workplaces. Also, to comply with the data security laws electronic monitoring is essential.

2.1.1. Perceived Institutions' and Individuals' Factors

Electronic monitoring technologies and systems used depend on the Institutional factors and individual factors of the employees. Employees need eroded employee privacy and rights to be addressed. At the same time, employer strongly belief that there are many benefits to electronically monitor employees in the workplace. The two sides need to strike a balance in order to create a harmonious work environment

2.1.2. Ethical Issues in Electronic Monitoring Supervision

Since technology has made another effective work environment, in changing ways which work can be completed, representatives can work on their usefulness while partaking in their work even if they are being monitored [9]. Tendency of individuals putting less effort when they collectively work than when they work individually commonly known as social loafing, brings belief that others are not carrying on their fair share of work and responsibility. In some instances, employee's belief that the relationship between an individual's effort and groups output, is clouded and not measurable. Use of internet to access personal purposes during work hours leads to cyber loafing whereby this act makes employee ignore their set out responsibility at work. A model was developed that suggested that, when employees view their workplaces as distributive, procedurally and interaction unjust, they are likely to develop a technique to legalize their act of cyberloafing.

Though electronic monitoring supervision may be viewed as loss of privacy at workplace, employees currently feel that it is their right to watch and listen to what their employees are doing online [10]. At this point ethical issues arise in regard to the rights to privacy. Employees feel if an email is addressed to their name, then that is private, while employers think that reading these mails while at work is abuse of company's resource, employee theft and espionage. Legislation has been used to resolve such debates. Employers are only allowed to intercept emails and voice as per the legislation that states that; the employer must give a prior consent. This protects the company from liability [3].

2.2. Development of Electronic Monitoring Supervision Framework

For successful electronic monitoring supervision in the Institutions, there is need to develop an electronic monitoring supervision framework that will be used to adopt the technology. Strictly adhere to the set guidelines and procedure is recommended. This framework clearly states who, where, why, when and how the monitoring will be done [11].

3. Materials and Methods

The study developed a framework to be used adopted the use electronic monitoring supervision. The research design used descriptive survey. The sample was drawn

from the selected* institutions of higher learning in Nakuru County, Kenya. The sample size was 102 staff members and 136 students, these are those staff members and students who were actively using a computer at ago, which relatively proportional to the number of computers in use. The method of questionnaire distribution and collection known as Drop-Off and Pick-Up was used by the researcher to issue the questionnaires to the study respondents and left them to answer in researchers' absence and at respondent's free time.

The research sought to find out parameters to be included in the electronic monitoring supervision framework. Based on various studied models and policies a framework was developed considering the results of the research. The developed electronic monitoring supervision framework was subjected to scrutiny and criticism by various relevant experts, users and scholars including researcher's Supervisors.

4. Findings

The respondents were asked to give suggestion on Electronic Monitoring Supervision. The responses were analysed thematically and the discussion was as done below;

4.1. Controls

1. A respondent showed that, there is need for strict laws on the use of social media on campuses. Social media provides a lot of freedom through which university resources are misused.
2. Other respondents observed that, there is need to ensure university resources are used in the best manner possible. The monitoring should be done in such a way that there is limited access to sites which are not academically helpful.

4.2. Policies

- 1) A respondent was of the opinion that, there is need to implement policies that govern use electronic media. This should be geared towards enhancing customer satisfaction as opposed to personal use.
- 2) Another respondent observed that, there is need for institutions of higher learning to acquire programs used in monitoring an individual's internet activity, and monitor the time taken by an employee to handle a call or use the internet in a certain given time.
- 3) Each institution has laid down procedure and modalities of monitoring the electronic media. These should be strengthened and they should be in tandem with the best practices in the contemporary society.

4.3. Internet Related Fraud

The respondents were asked the extent to which they agreed with the statement that the use of ICT in supervision has assisted to counter fraud.

Table 1. Chi-Square Tests on ICT use

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.068 ^a	3	.000
Likelihood Ratio	21.668	3	.000
Linear-by-Linear Association	8.915	1	.003
N of valid cases	174		

Cells (25%) have expected count less than 5. The minimum expected count is 2.10

Source: Research Data.

From the Chi-square [Table 1](#), above it can be seen that $\chi(3) = 20.068$, $p = 0.000$. This showed that there was statistically significant difference between Gender and their responses to the statement. That meant that male and female responded differently that is most male agreed while most female disagreed. There is a major rift between the responses from males and female. The above can be said to mean that a majority of males both staff and students view electronic monitoring has assisted to reduce cases of fraud to a great deal this could be perhaps when they compare cases of fraud with other institutions and the increased knowledge in the matters touching on the electronic use in the contemporary society. A majority of female respondents in this study are of the opinion that the use of ICT in supervision has been of little help in countering fraud. In relation to the process of diffusion of Innovation, these results show that at awareness level where the individual is exposed to the innovation but lacks complete information about it, was not done effectively for the females both the staff and the students.

An interviewee asked about how ICT use has assisted to counter fraud was of the opinion that;

- 1) There was back up which assist retrieve any information that maybe corrupted when it is needed. The system users are under strict rules and regulation which they have to adhere to. There are those responsible for the password and their integrity must be above board. The password also keeps being changed by the top management in relation to institutions policy.
- 2) Another respondent observed that; there is need to have Wi-Fi (wireless) controlled in institutions of higher learning. This will decipher every unauthorised access hence mitigating challenge posed by fraudsters.

The disparity in results may also be attributed to cases where those who ought to supervise are at times found culpable and some are prosecuted due to fraud although these cases are minimal where proper monitoring is done. This then means that there is need to adopt an e-monitoring supervision

4.3.1. Monitoring the Use of the Internet

Table 2. Use of the internet

Staff	Agree	Disagree	Total
Male	18	30	48
Female	7	20	27
Total	25	50	75
Students	Agree	Disagree	Total
Male	26	39	65
Female	0	34	34
Total	26	73	99

Source: Research Data.

The respondents were asked to give the information on if they do not mind others viewing their internet usage. The findings are as shown in the Table 2, in relation to the respondents' gender. Response from the interview was as follows;

- 1) One of the respondents of the interview was of the opinion that; would allow people viewing the internet usage as long as they don't infringe on privacy. Therefore, they are comfortable to allow the viewing as long as it is related to the job. That is official issues and tasks.
- 2) We can see from the Chi-square table below that $\chi(3) = 14.689, p = 0.002$. This tells us that there is statistically significant difference between gender and their responses to the statement. That Males and Females responded differently. The above responses show that a large number of the males and female staff and students in this study are not comfortable with people viewing their internet usage. This can hamper electronic monitoring supervision especially in cases where monitoring is done secretly.

4.3.2. Safe use Internet and ICT Devices in the Office

Table 3. Personal use of internet in the Office

Staff	Agree	Disagree	Total
1-3 years	27	30	57
4 – 7 years	9	9	18
Total	36	39	75
Students	Agree	Disagree	Total
1 st and 2 nd year	23	28	51
3 rd year and fourth year	30	18	48
Total	53	46	99

Source: Research Data.

Findings in Table 3 on the subject on whether the employees are not allowed to use internet for personal use in the Office led to the data above. A large number of the respondents are of the opinion that they are not allowed to use internet for their personal use. This shows that there are steps which have been put in place to make sure that much of the institutions time is not wasted on the internet with personal matter at the expense of the customers. The above data shows there is effectiveness in electronic monitoring in the institution

4.3.3. Attitude Changes

- 1) Respondents observed that, the attitude of the employees in electronic media in institutions of higher learning should be positive towards electronic monitoring supervision. Once they embrace it, it will definitely help in monitoring. There is therefore a need to take the staff for refresher courses on the importance of electronic monitoring supervision. It should not be seen as if it is punitive by the employees but a way to improve their systems security and improvement of services delivery.
- 2) Other respondents on the same note stated that, institutions of higher learning may do electronic monitoring supervision but if the staffs are not comfortable, they will finally find ways to evade.

The staff should be involved in the implementation of new measures of monitoring the electronic media. People if not involved in changes tend to resist the changes.

5. Conclusion

The research concluded that, most of the respondents across the gender were of the opinion that the institutions are concerned with safety of internet use. This is an important component in electronic monitoring supervision bearing in mind the level security threats which may damage the whole institutions system. The institution has to put in place the necessary control measures, because a great majority of both students and staff from different departments showed there is an increase in internet fraud cases in the institution.

Adoption of Electronic monitoring supervision

From the research, respondents were concerned with safety of internet use. This is an important component in electronic monitoring supervision bearing in mind the rise in of security threats which may damage a whole institution's system. The Research therefore presents the design, development and validation of electronic monitoring supervision framework that will be used by any institution that desires to adopt electronic monitoring supervision.

The research sought to find out parameters to be included in the electronic monitoring supervision framework. Based on various studied models and policies a framework was developed considering the results from the research.

6. Recommendations for Future Work

The study recommends the following to be undertaken for further studies:

1. The current study would have presented a better picture on the use of electronic monitoring supervision in institutions of higher learning in Kenya, but it sampled only standalone computer and wired network. It is not possible to tell of the same situation prevails in wireless network and laptops, therefore a study should be done on electronic monitoring supervision on wireless network, remote computer or laptops and mobile phones.
2. This research recommends that, scholars in this area should explore more on this topic and come up electronic monitoring supervision that can be used by interested institutions. This is great opportunity for system developers, software engineers and programmers
3. The researcher also recommends that other institutions/organizations should adopt the use of electronic monitoring supervision which does not only protect the institutions but also help in reducing resource wastage.
4. The researcher also recommends that other institutions/organizations should adopt the use of electronic monitoring supervision which does not

only protect the institutions but also help in reducing resource wastage, while increasing productivity.

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