

**ELECTRONIC WORKPLACE SURVEILLANCE AND
PERFORMANCE OF MANUFACTURING FIRMS LISTED IN THE
NAIROBI SECURITIES EXCHANGE**

ODHIAMBO DAVID AMOLLO

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**A Research Project Paper Submitted In Partial Fulfillment of the Requirements for
the Degree of Master of Business Administration, School Of Business, University Of
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DECLARATION

I hereby declare that this research project is my own work and effort and that it has not been presented in any other university anywhere for an academic award.

Signature: Date:

DAVID AMOLLO ODHIAMBO

D61/74515/2014

This research project has been submitted for examination with my approval as the candidate's University Supervisor.

Signed

Date.....

SUPERVISOR'S NAME

DR. KATE LITONDO.

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DEDICATION

This study is dedicated to my loving family for their endless support and encouragement during the period of the research project. Their understanding of my “unavailability” and encouragement has enabled me to come this far.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGEMENT.....	iii
DEDICATION	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS AND ACRONYMS.....	ix
ABSTRACT.....	x
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the study	1
1.1.1 Electronic Workplace Surveillance	2
1.1.2 Organization Performance.....	4
1.1.3 Manufacturing firms in Kenya	5
1.2 Problem Statement	6
1.3 Research Objectives	9
1.4 Value of the Study.....	10
CHAPTER TWO: LITERATURE REVIEW	11
2.1 Introduction	11
2.2 Theoretical Foundations.....	11
2.2.1 Equity Theory.....	11
2.2.2 Diffusion Theory.....	12
2.2.3 Technology Acceptance Model.....	12
2.3 Employee Workplace Surveillance	13
2.3.1 Methods of Employee Surveillance.....	14
2.3.2 Video Surveillance (CCTV).....	14
2.3.3 Computer Monitoring.....	14
2.3.4 Phone and Voicemail Monitoring	15
2.3.5 Internet and Email Monitoring	15
2.4 Challenges of Employee Surveillance.....	16
2.5 Empirical Studies of Employee Surveillance and Performance in Organizations.....	17
2.6 Summary of Literature	19
2.7 Conceptual Framework	20
CHAPTER THREE: RESEARCH METHODOLOGY.....	21
3.1 Introduction.....	21
3.2 Research Design.....	21

3.3 Target Population	21
3.4 Data Analysis	22
CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION	23
4.0 Introduction	23
4.1 Response Rate	23
4.2. General Information	23
4.2.1 Gender of the respondents	24
4.2.2 Age of the respondents	24
4.2.3 Duration in Years Respondent Has Worked with the Organization	25
4.2.4 Types of Electronic Surveillance Systems used in the organizations	26
4.2.5 Levels of surveillance experienced in the organizations	27
4.3 Extent of use of Electronic Workplace Surveillance	28
4.3.1 Duration that organizations conduct Electronic Workplace Surveillance	28
4.3.2 Extent of implementation of surveillance systems	29
4.4 Effect on Firm Performance	30
4.4.1 Increase in Employee Productivity	30
4.4.3 Range of company profit	32
4.4.4 Organizations' long term goals	32
4.5 Challenges on implementing electronic workplace surveillance systems	33
4.6 Discussion	35
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	39
5.1 Introduction	39
5.2 Summary of findings	39
5.3 Conclusions	40
5.4 Recommendations	40
5.5 Limitations of the Study	40
5.6 Suggestions for future research	41
References	42
APPENDICES	47
Appendix I: Questionnaire	47
Appendix II: List of Large Scale Manufacturing Companies in Nairobi, Kenya	50

LIST OF TABLES

Table 4.1: Gender of the respondents.....	24
Table 4.2: Duration in hours of electronic workplace surveillance.....	28
Table 4.3: implementation and use of electronic surveillance systems.....	30
Table 4.4: Challenges in using electronic workplace surveillance systems	34
Table 4.5: Model Summary.....	36
Table 4.6: Coefficients.....	36
Table 4.7: ANOVA.....	37

LIST OF FIGURES

Figure 2.1. Conceptual Framework.....	20
Figure 4.1 : Age of the respondents	25
Figure 4.2: Period the respondents had worked in the organization	26
Figure 4.3: Electronic workplace surveillance systems in use by the organizations.....	27
Figure 4.4: Levels of Electronic Workplace Surveillance.....	28
Figure 4.5: Employee Monitoring outside of the workplace.....	29
Figure 4.6: Extent to which surveillance systems affect employee productivity	31
Figure 4.7: Surveillance systems in safeguarding company assets	31
Figure 4.8: Organizational Profits in the previous financial year.....	32
Figure 4.9: Relation between electronic surveillance and organizations long term goals.....	33

LIST OF ABBREVIATIONS AND ACRONYMS

BSC	Balanced Score Card
CCTV	Closed Circuit Television
GDP	Gross Domestic Product
IS	Information Systems
KAM	Kenya Association of Manufacturers
NSE	Nairobi Securities Exchange
TAM	Technology Acceptance Model
VoIP	Voice Over Internet Protocol

ABSTRACT

Organizations have started to appreciate information as one of the crucial factors leading to competitive advantage. With the use of information, managers are capable of making strategic and operational decisions that see the success of organizations. There are several methods of conducting electronic workplace surveillance: CCTV surveillance, recording and listening to telephone conversations, monitoring employee email and internet usage and by electronically measuring employee performance through computer monitoring. The increased use of these surveillance techniques has brought about effects on employees and their performance within organizations. This study sought to determine the extent in which the electronic workplace surveillance systems are used to monitor employees in manufacturing companies in Kenya, to establish the challenges of using electronic workplace surveillance systems and to find out the outcome of using the systems on the performance of manufacturing firms.

The research design employed in this research was descriptive in nature. The study targeted a population of 18 manufacturing companies listed in the Nairobi Securities Exchange. For every organization, the study targeted two ICT managers and one operations manager. Primary data was collected by use of questionnaires and was summarized and presented using percentages, proportions and tabulations. The data was further analyzed using regression analysis to determine how the electronic workplace surveillance systems affect organizational performance. The study found out that the various methods of employee surveillance contribute to a large extent to the level of performance that is achieved by the NSE listed manufacturing firms in Kenya. Therefore, the study recommends that organizations greatly consider the different electronic workplace surveillance methods, with more emphasis on computer monitoring since it had the highest significance according to the analysis. Further research is also recommended in the implementation of electronic workplace surveillance systems for the other manufacturing companies and even companies that are not necessarily in the manufacturing sector.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

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).

1.1.1 Electronic Workplace Surveillance

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 is 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).

1.1.2 Organization Performance

Performance is an important aspect to the management and the development of organizations. Mwitwa (2000) views performance as the key driving force towards achieving organizational goals, which, he says, has a strong link to an organization's strategy. It involves measuring the actual output against the desired output. In the past, organizational performance was measured in terms of work, the human resource and the organizational structure. With time, managers are discovering new ways of evaluating organizational performance. The balanced scorecard is a new method that managers have adopted in measuring organizational performance.

The balanced scorecard was developed in the 90s by Robert Kaplan and David Norton. It was earlier used by managers only as a simple framework for measuring organizational performance. Because of its efficiency and great success in organizations, it has now evolved to a full strategic planning and management system, enabling managers to plan on the activities to be done and measured. The balanced scorecard (BSC), as stated by Kaplan & Norton (1996), equips managers with the tools they require to gain future competitiveness. They argue that the BSC converts a company's mission statement and strategic plan into a detailed set of performance

measures. These measures provide the structure for a strategic measurement and management system. Niven (2010) considers the BSC as a sure and effective technique to facilitate effective implementation of an organization's strategy, as well as translate an organization's intangible assets into real value for the stakeholders.

The balanced scorecard provides four perspectives from which an organization can be analyzed. These include: The learning and Growth perspective; The Business Process Perspective; The Customer Perspective and The Financial Perspective. In the Financial Perspective, the management focuses on the financial-related data and put in place measures to ensure maximum profitability in line with organizational strategy. Financial progress is measured over some period as the managers analyze the organizations' performance thus making decisions on how to streamline their processes towards achieving the set objectives. The Financial Perspective proves relevant to this study.

1.1.3 Manufacturing firms in Kenya

The manufacturing sector is among the key contributors of Kenya's economic development. This is measured in terms of the percentage of the country's exports as well as job creation (Nzuki & Odongo, 2015). The manufacturing sector is the third leading sector contributing to Kenya's Gross Domestic Product (GDP) following the Agriculture and Tourism sectors (Haron & Chellakumar, 2012). Manufacturing companies in Kenya (See Appendix II) have been growing over time and are relatively diverse. Workplace surveillance is not a new concept in Kenyan manufacturing firms. Most of these companies surveil their employees for some number of reasons. This practice of surveillance is justified on grounds that it is a method of evaluating employee performance, it contributes to ensuring customers are

offered quality service as well as fighting vices in the work environment (Mishra & Crampton, 1998).

In Kenyan manufacturing firms, there are some challenges that hinder progress despite the continuous growth and competitiveness of the manufacturing sector. Some of the challenges are high cost of capital, lack of sound government policies on manufacturing industry, difficulties in accessing export markets, corruption among others. The leather industry in Kenya suffers lack of quality facilities leading to unnecessary costs in processing finished leather. This is according to the Kenya Leather Industry report 2015.

Another challenge that faces the manufacturing sector in Kenya is the government's poor policies leading to imports of manufactured products billions of shillings from other countries as China. There is also large imports of second hand clothing, otherwise known as "mitumba" that have eroded the market share and led to the poor growth of the textile industry in Kenya. Despite the drawbacks, the number of manufacturing companies in Kenya is increasing due to proper financial management and increased organizational efficiency (Yang, 2006).

1.2 Problem Statement

Employee productivity is one key aspect that organizations strive to improve in order to achieve their objectives and stay competitive. Bohlander & Snell (2010) defined employee productivity as the outcome of combining employee abilities, drive, work environment and the technology used to facilitate the work. Sensory distractions in the workplace is what mostly leads to poor employee productivity (Shumake, 1992). The number of employees abusing their time in the workplace by engaging in non-work related activities is increasing by the day. A study by Robert Half, a large global

recruitment firm revealed that an average employee wastes approximately 4.5 hours a week at work (Stevens & Lavin, 2007). For instance, employees use the internet for shopping, banking and accessing social networking sites. Sports enthusiasts as well read the latest sports news during work hours (Muhi, 2003). Others engage in non-productive actions such as unscheduled breaks, leaving their workstations to attend to personal matters thereby wasting valuable time (Nirajan et al, 2016). This time abuse leads to decreased productivity, increased labour costs and potential company losses.

In the past, employee monitoring in manufacturing companies was carried out manually and at a minimal. This method of monitoring is still being used today. Bulitia, K'Obonyo, & Ojera, (2014) suggest that management by walking around is one sure way on increasing organizational performance. However, when employers switched to advanced digital means to collect performance information, there wasn't much legislation governing the practice. There existed no defined boundaries as to how far an employer can carry out workplace monitoring (Allen et al, 2007). Thus, with the improvement and changing technology, and employees becoming more knowledgeable and with varying intentions, employers have adopted advanced methods of surveillance making it easier for them to monitor employee activities (Yerby, 2013).

Where there exists a number of individuals with varying sense of work ethics, knowledge, and with different intents, employers feel compelled to keep an eye on the activities of their employees. The American Management Association, in a 2005 study found that more than half of the respondents admitted to using video surveillance systems to monitor their employees. This, however, has brought about concerns from the employees themselves as well as other interest groups, who question whether or not to surveil employees at work, and if at all the practice leads to

higher productivity (Martin & Freeman, 2003). Other concerns raised are privacy concerns where legal institutions continuously set standards to protect employee privacy. These legal institutions seek to draw the line between employee surveillance with intentions of monitoring productivity versus surveillance with intentions of spying (Yerby, 2013). Whereas employers argue that workplace surveillance seeks to ensure a secure and productive work environment, to most employees, this feels like a violation of privacy (Mautner , Anderson, & Haushild, 2001).

Surveillance of employees continues to be a controversial practice. Despite being considered legal, there is a thin line between monitoring for the good of the organization and violating employees' rights and privacy (Grimmett, 2014). Every employer has their own reason behind monitoring, and they continue to intensify their surveillance methods by even acquiring more sophisticated systems, plus, there is increased sales in monitoring software (Wakefield, 2004). The increasing rate of employee monitoring in firms is linked with the availability of monitoring tools and the ease of use of such tools (Weckert, 2005). Some of the reasons for workplace surveillance include increasing employee productivity, ensuring security in the workplace and ensuring employee privacy (Martin & Freeman, 2003).

Organizational performance is one thing that managers in all organizations are keen on and use indicators in finance, efficiency and effectiveness to measure it (Mitchell, 2002). A number of studies done on manufacturing firms in Kenya discuss the variables that have an impact on organizational performance. Awino (2015) in his study on how organizational structure influences performance, argued that 27 percent of variation in internal process of large manufacturing firms is due to organizational structure. A study by Kiplagat (2014) discusses the relationship of organizational performance to stocks and ordering costs in manufacturing companies. Kiplagat

argues that by reducing costs, a firm will secure sufficient resources to facilitate processes thus achieving profitability objective. Bulitia et al (2014) assert that managers can improve organizational performance by hiring skilled employees, training them regularly and seeking consultancy services for new ideas, providing material incentives to attract and retain skilled employees and walking around to supervise work. Although the study by Bulitia et al (2014) talks about management by walking around, it does not further discuss to what extent this practice needs to be done. In addition, other studies on manufacturing firms in Kenya focus on organizational performance indicators, but none of them connects employee surveillance to performance. This study aims at filling this knowledge gap by asking the following research question: Does employee surveillance affect the performance of manufacturing firms in Kenya?

1.3 Research Objectives

The overall objective of this study was to evaluate electronic workplace surveillance systems in manufacturing firms in Kenya. The study specifically intended:

- I. To determine the extent in which the electronic workplace surveillance systems are used to monitor employees in manufacturing companies listed in the NSE.
- II. To establish the challenges of using electronic workplace surveillance systems for employee surveillance.
- III. To determine the effect of using the electronic workplace surveillance systems on the performance of manufacturing firms.

1.4 Value of the Study

This study would help managers of manufacturing companies in Kenya to understand and appreciate the need for workplace surveillance systems, generally adding value to the operational efficiency by providing a framework that provides a more detailed perspective of the surveillance process. Through the study, the managers will also learn of the challenges faced when implementing surveillance systems and the effects of using the systems to monitor employees in the workplace, thereby taking measures that will in the long run be profitable to the organization. Policy makers would use this study as a guide in setting up standards to protect employee privacy in the workplace.

For researchers, this study will form a basis for further research on issues related to electronic workplace surveillance, which could add value to large scale manufacturing firms in the country, and highlight challenges that face the implementation of workplace surveillance systems among organizations in Kenya. Scholars will also benefit from the literature, results and findings of this study, which will develop basis for further research on the topic.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter starts with a discussion of a number of theories that are related to the study, followed by a review of literature shedding more light on electronic workplace surveillance. What follows is empirical studies related to the topic and a summary of the knowledge gaps. The chapter also contains the conceptual framework that shows the relationship between the variables of the study.

2.2 Theoretical Foundations

There are a wide range of theories developed by various scholars. The study is based on a number of ICT theories that are relevant to workplace surveillance.

2.2.1 Equity Theory

Equity theory was proposed in 1965 by Stacy J Adams with the purpose of determining whether there is equal distribution of resources between parties (Adams, 1965). Benjamin Ball through his “Summary of Motivation Theories” states that people appreciate and are motivated by fair treatment and compensation based on their input to the work (Ball, 2012). Going by Equity theory, an individual measures their own actions/efforts, linking the compensation they receive to their overall input (Coultrup, 2012). This self-assessment is a measure of fairness which can cause tension if an individual notices an imbalance between the ratio of input to output (Ramlall, 2004). This tension may lead to lower quality of work, especially in places where electronic surveillance systems are used to measure quantity of work done (Vorvoreanu & Botan, 2000), lower employee productivity, or result to absenteeism or even resignation of the employees (Al-Zawahreh & Al-Madi, 2012).

Equity theory, as stated by Pritchard (1969) suggests that an individual only experiences a state of perceived equity when they feel that their inputs balance their outputs and that others' inputs also match their outputs.

2.2.2 Diffusion Theory

The diffusion of innovations, founded by Everett Rogers, is a theory that explains how technological ideas spread over time. Rogers (2003) defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system”. When a new idea is first introduced by innovators, it takes some time before it is accepted and adopted by a vast majority (Lieven, Evens, & Stragier, 2011). In most cases the diffusion pattern has a relatively slow start but as the market familiarizes with the innovation, it attains peak acceptance.

Worker surveillance is not, in itself, a new practice. When managers have been looking to increase staff efficiency, improve productivity and ensure safety within the workplace, they have resorted to monitoring. The practice is contemporary but it has its roots in the mid-19th to early 21st centuries (Ball, 2010). Workplace surveillance technologies are widely accepted today and have enabled extensive monitoring practices within organizations for instance routine drug-testing and email monitoring (Sewell, 2005).

2.2.3 Technology Acceptance Model

The way users accept technology has been of interest to the Information Systems (IS) community for more than 20 years (Chuttur, 2009). The Technology acceptance Model

(TAM), proposed by Davis (1991), points out a major hindrance to success of new information systems as being lack of user acceptance. Davis further noted that organizations face challenges when users reject information systems that are proposed to improve organizational performance. TAM assumes the determinants of acceptance of a new IS as the following: user attitude towards the system; users' behavioural intention; perceived usefulness and perceived ease of use (Alharbi & Drew, 2014). Other factors that affect system acceptance include subjective norm, self-efficacy and system accessibility (Park, 2009).

2.3 Employee Workplace Surveillance

“Big brother is watching” is not a new phrase among employees and implies that a place is under surveillance. Electronic Surveillance Systems have been widely embraced by most organizations globally with the aim of being more productive and streamlining processes (Katz, 2015). The surveillance systems also help managers and supervisors to gather employee performance data, which forms basis of employee compensation, rewards and promotions in some organizations. The need to carry out surveillance in the workplace has been driven by the managers' fear that employees spend most of their working hours browsing through social networking sites, attending to their personal emails, shopping or even playing online games, thereby negatively affecting their productivity at the workplace. Presently, approximately 26 million employees in the United States are under surveillance in the workplace, and this number will rise with increase in computer use within organizations, as well as the declining cost of acquiring these monitoring systems (DeTienne, Big brother or friendly coach? , 1993).

2.3.1 Methods of Employee Surveillance

Electronic Workplace Surveillance 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).

2.3.2 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.

2.3.3 Computer Monitoring

The other widely used method is Computer Monitoring. 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 extents 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.

2.3.4 Phone and Voicemail Monitoring

Phone and voicemail monitoring is a common practice in organizations today. A number of firms opt for phone tapping as a surveillance technique. Managers wiretap into and eavesdrop personal phone calls made by employees through their phone extensions on the Voice Over Internet Protocol (VoIP). This enables them to gather information on the phone numbers, time and duration of the calls (Bryant , 1995), frequency as well as destinations and costs of the phone calls made (Losey, 1994). Employers, through such monitoring, can also able to determine the duration of calls (Privacy Rights Clearinghouse, 1997).

2.3.5 Internet and Email Monitoring

In this digital era, organizations use electronic monitoring with keen interest on rooting out issues such as low productivity as a result of inappropriate internet usage and to secure trade secrets from being leaked to the wrong hands (Rosenblat, Kneese, & Boyd, 2014). Monitoring internet usage involves keeping in check both the websites that are accessed by employees and the emails being sent and received. Internet and email monitoring have been made a lot easier. Modern monitoring software are capable of providing the management with information on accessed

websites as well as the duration and frequency of the website visits (Yerby, 2013). Managers are also notified when the staff use mail, as well as whether the mail was received at the other end. They then determine whether the emails are appropriate of work related and take action based on their judgement.

Firewalls and filters are not a new phenomenon in most organizations. They are created to block access to websites that are not job related (Ciocchetti, 2011). A study by the American Management Association on Electronic Monitoring & Surveillance Survey in 2007 revealed that almost a third of employers fired employees for misusing emails. Apart from email monitoring, employers also monitor voice mails and voice calls. For instance, in Customer Care companies, the management wiretap and listen to the telephone conversations between the staff and customers to ensure quality.

2.4 Challenges of Employee Surveillance

Workplace surveillance may have a lot of pros for instance improving employee productivity, and ensuring security but it also has drawbacks such as lack of trust and fear among employees (Katz, 2015). There have arisen concerns from the society, with a number of professionals having their own arguments and conclusions on surveillance. Among the questions commonly raised by these interest groups is whether or not to carry out employee surveillance, and whether the practice would lead to higher worker 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).

While surveillance can boost employee productivity, help in proper management of the office, and help in evaluating employee performance, it can also lead to distrust

and fear among the staff. A number of arguments stem from studies on surveillance, one being that it causes stress and health problems to employees, it is a potential abuse by employees and the most common being a violation of privacy (DeTienne & Flint, 1996). The Productivity Argument seeks to answer whether surveillance results to higher productivity. However, studies show a relationship between monitoring and psychological problems, boredom, depression and fatigue (Hartman, 1998). Although in some cases employees may work better under surveillance, they may start experiencing increased stress levels when they know that their activities are being watched and controlled. Employees may feel violated leading to reduced trust levels in their employers if they feel pressured to behave in a certain manner. This may eventually lead to increased employee turnover (Reddy, 2016). Other individuals argue that monitoring limits control to their own information and knowing that the employer is watching every action may lower creativity (Martin & Freeman, 2003).

Reddy (2016) in his study also noted that the systems are expensive: Installing the monitoring system can be quite expensive. Today, most monitoring is done through apps, and the development of such applications can be quite costly. According to Kate Bischoff, the result of lower morale, increased stress levels, and violation of employee privacy is poor retention.

2.5 Empirical Studies of Employee Surveillance and Performance in Organizations

Approximately three quarters of organizations in the United States admit to having used one electronic surveillance (American Management Association, 2000). There has been continuous rise in concerns over the use of surveillance systems in the workplace, with most employees citing concerns of privacy invasion. Call-centers

have been the focus of most surveillance studies due to their extensive use of surveillance systems, but presently the practice has spread to banking, insurance and healthcare (Palm, 2007). There are a number of empirical studies on electronic workplace surveillance which emphasize on the effects of surveillance. The studies take different perspectives and are informed by different theories.

Studies conducted by (Aiello & Svec, 1993) and Griffith (1993) from social psychology aimed to discuss the effect of electronic monitoring on job performance. Both studies used the Social Facilitation Framework which looks at whether an employee does a task alone or works on the task in the company of another individual. The studies revealed that computer monitored individuals had better job performance compared to the supervised individuals, which in turn was greater than those who worked alone. Aiello & Svec (1993), in their experiment found that computer monitoring is no different to having a supervisor present in the workplace, especially when the job involves difficult tasks. However, none of these studies showed any relationship to job satisfaction.

Nebeker & Tatum (1993) carried out a study on the effect of employee monitoring, under different variables: standards and rewards, productivity, work quality, job satisfaction and stress revealed that monitoring, with employees aware, led to increased employee productivity. Bhave (2013) examined the relationship between electronic performance monitoring (EPM) and employee performance in his recent call center study. He found out that electronic monitoring of employees led to better performance. The study also revealed that frequent monitoring and performance assessments result to higher performance. Grant, et al (1988) conducted a study which focused on employee perceptions. Their objective was to find out if with computer monitoring, employees develop some kind of perception, for instance, quantity is

more important than quality. Their study, which was based in a call center, revealed that employees subjected to computer monitoring perceived that quantity is more vital than quality and that the employers handled a huge number of calls rather than provide quality customer service.

2.6 Summary of Literature

From the literature, it is clear that electronic workplace surveillance as a practice has been growing at a rapid rate and is widespread. Implementing workplace surveillance systems brings many positive results in the firm as it ensures the employees properly use company resources and time, thereby having significant influence on organizational performance. Employers argue that surveillance not only keeps the employees behavior in check but is also a means to ensure security. With the ever improving technologies, there is change in the way normal workplace activities are carried out. However, introducing surveillance methods in the workplace is not always easy as it may seem for it may not be successful due to legal restrictions and lack of managerial commitment. Organizations that practice employee surveillance do so in different ways and varying lengths depending on the firm's requirements. The law also permits employers to perform workplace surveillance, but does not define to what extents this can be done.

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. There are also many questions and concerns coming from these interest groups with more focus on employee privacy. Despite most employers' efforts in defining and respecting surveillance boundaries, the employees feel that

their privacy is being violated. Privacy advocates still champion for reforms that would offer greater protection for employees.

2.7 Conceptual Framework

Independent Variables

Dependent Variable

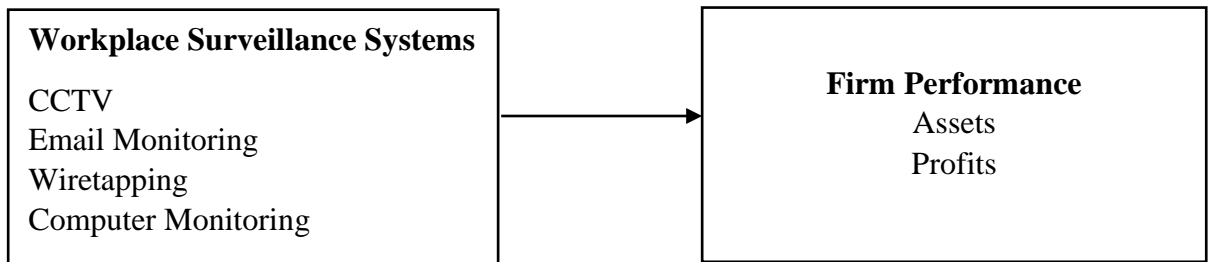


Figure 2.1. Conceptual Framework

This study examines how workplace surveillance techniques affect organizational performance. This conceptual framework assumes that the methods of workplace surveillance have a direct influence on the performance of an organization. How well an organization performs is characterized by the number of branches, whether its operations are local or international or both and how long an organization has existed.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the research design which was used for the study, the target population, data collection and data analysis methods employed to analyze the collected data.

3.2 Research Design

The research design can be defined as the general strategy a researcher chooses to bring together the different components of the study in an articulate and logical way, thus ensuring the research problem will be effectively addressed (Labaree, 2009). Denvir & Millet (2003) stated that a research design provides glue that holds a project together.

This study adopted a descriptive research design that aimed at establishing the effect of electronic workplace surveillance on performance of manufacturing firms. The reason behind this was because, according to Burns & Grove (2003), descriptive studies are designed to gain more information about a phenomenon as it naturally occurs.

3.3 Target Population

Burns & Grove (2003) defined study population as the entire set of individuals that meet the sample criteria of the research. The population of this study comprised of 18 listed manufacturing companies in the NSE out of the 455 large scale manufacturing companies in Nairobi County, as per the Kenya Association of Manufacturers (KAM) directory, June 2013. With listed companies, financial statements are made publicly available, and in this study, the statements proved to be relevant in performance

analysis. Nairobi county was the area of choice since it's where most manufacturing companies are based thus it provided a big population from where a reasonable sample size was derived. The targeted respondents for this study included two ICT managers and one operations manager for every manufacturing company in the study population, as they have a better understanding of the surveillance techniques used within their organizations.

3.4 Data Analysis

The study used primary data. Interviews were conducted using interview guides. To ensure uniformity in response, the interview guides were structured with simple questions. The data was analyzed and checked for completeness and comprehensibility. The data was then summarized, coded and tabulated. Data presentation was done by the use of tables for easy of understanding and interpretations. The study further analyzed the data using correlation to establish the relation between variables.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND DISCUSSION

4.0 Introduction

This chapter presents analysis and findings of the study as defined in the research methodology. The study was carried out to establish the effect of electronic workplace surveillance methods on organizational performance in large manufacturing firms in Kenya. The questionnaires were targeting two ICT managers and the operations manager in the firms. The findings are presented next.

4.1 Response Rate

A total of 54 questionnaires were distributed to the listed manufacturing firms in Nairobi. 37 out of the 54 questionnaires distributed were returned to the researcher. This represents a response rate of 69%. This percentage was considered sufficient for this study. The 30% who did not return the questionnaires cited busy schedules as the main reason for lacking time to fill them.

The questionnaires were designed in line with the objectives of the study, with the first section containing general information of the respondent and the organization.

4.2. General Information

The general information that the study required of the participants included the following: their gender, age group, company name, position in the organization, the period they have worked in the organization, the types of electronic surveillance systems in use and the level of surveillance they experience in their organizations. The results are as explained below.

4.2.1 Gender of the respondents

The study sought to find out the gender of the respondents who participated in filling the questionnaires. From the findings, 73% of the respondents were male while 27% of the respondents were female.

Table 4.1: Gender of the respondents

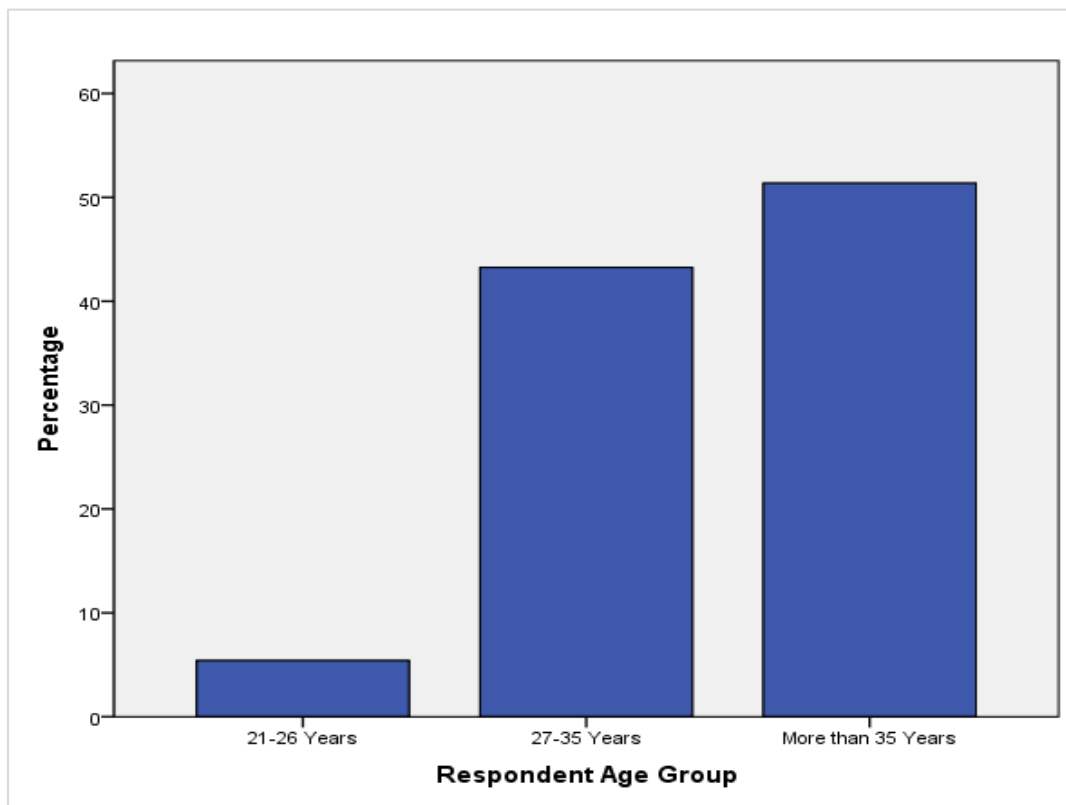
Gender	Frequency	Percent
Male	27	73.0
Female	10	27.0
Total	37	100.0

Source: Author, 2016

4.2.2 Age of the respondents

The study sought to find out the age of the respondents. From the findings, 5% of the respondents were aged 21-26 years, 43% of the respondents were aged 27-35 years and 52% of the respondents were aged more than 35 years.

Figure 4.1: Age of the respondents

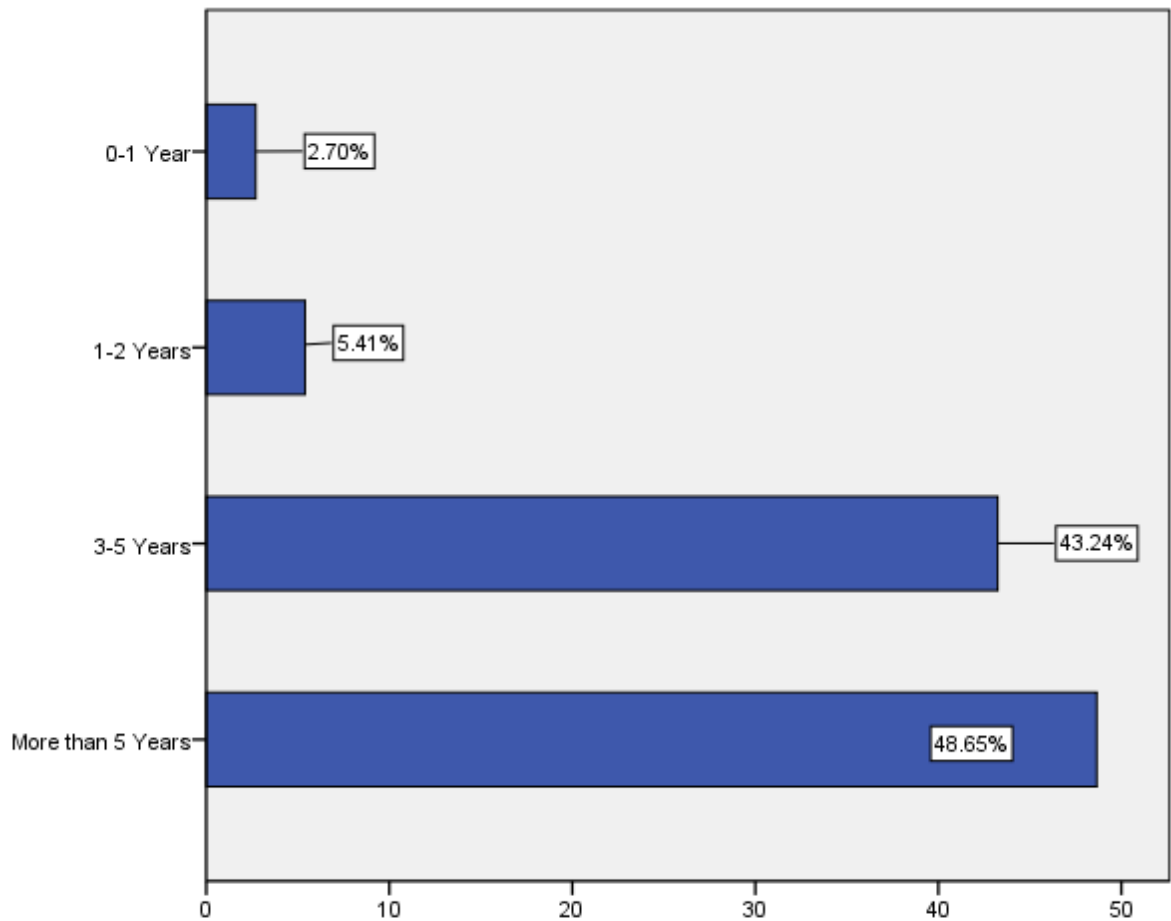


Source: Author, 2016

4.2.3 Duration in Years Respondent Has Worked with the Organization

The study required to establish the length of time that the respondents had worked within the organizations. From the findings, 49% of the respondents had worked for more than 5 years, 43% of the respondents had worked in the organizations between 3 to 5 years, 5% of the respondents had worked for 1-2 years and 3% of the respondents had worked for a period less than a year. These results indicate that most of the respondents had worked long enough in their respective organizations to understand how the organizations operate. Thus, a sign that the respondents had adequate working experience, and therefore possessed the necessary knowledge and information which is considered valuable for this study.

Figure 4.2: Period the respondents had worked in the organization

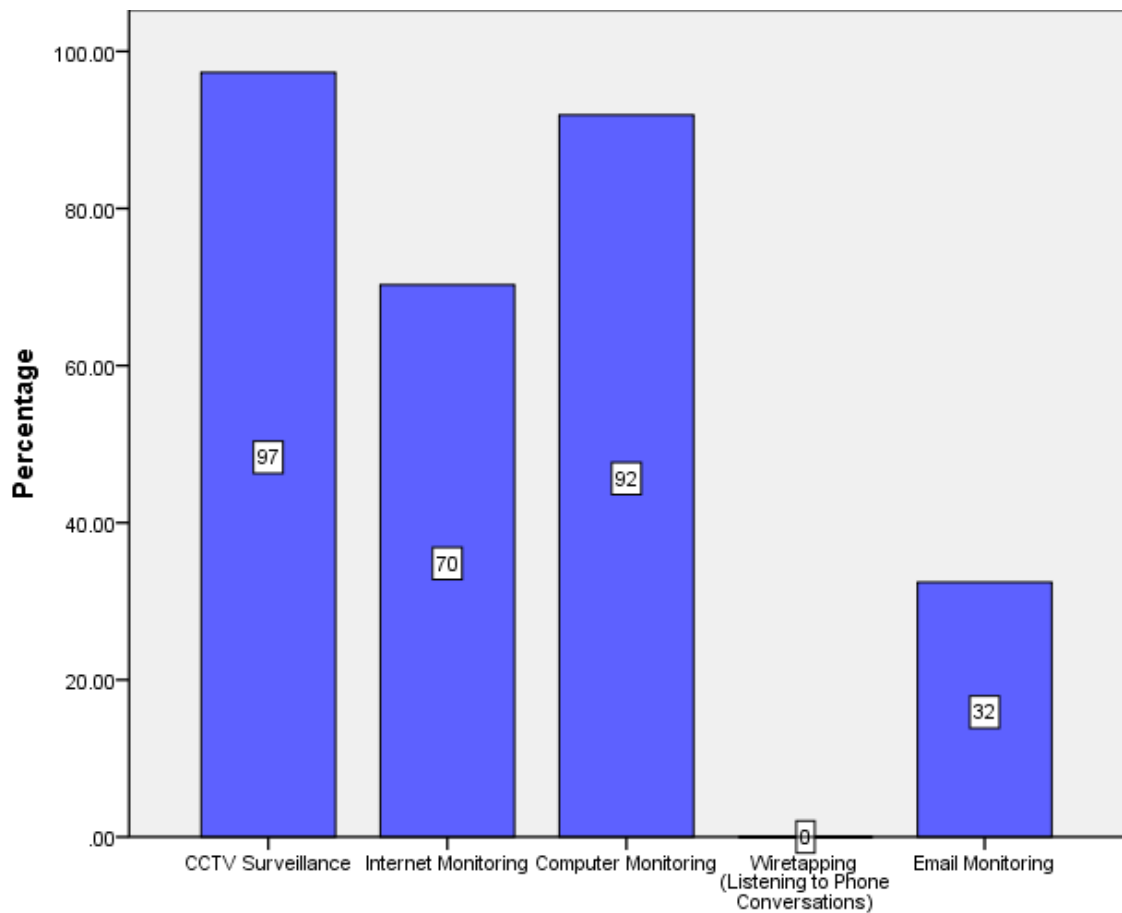


Source: Author, 2016

4.2.4 Types of Electronic Surveillance Systems used in the organizations

The study sought to find out which type of electronic workplace surveillance systems were in use in the organizations. From the findings, 97% of the respondents indicated that their organizations use CCTV systems for surveillance. 92% of the respondents indicated that their organizations use computer monitoring. 70% of the organizations monitor internet use. Email monitoring, according to the findings, is used by 32% of the organizations whereas none of the respondents, 0%, admitted to their company listening to employee telephone conversations.

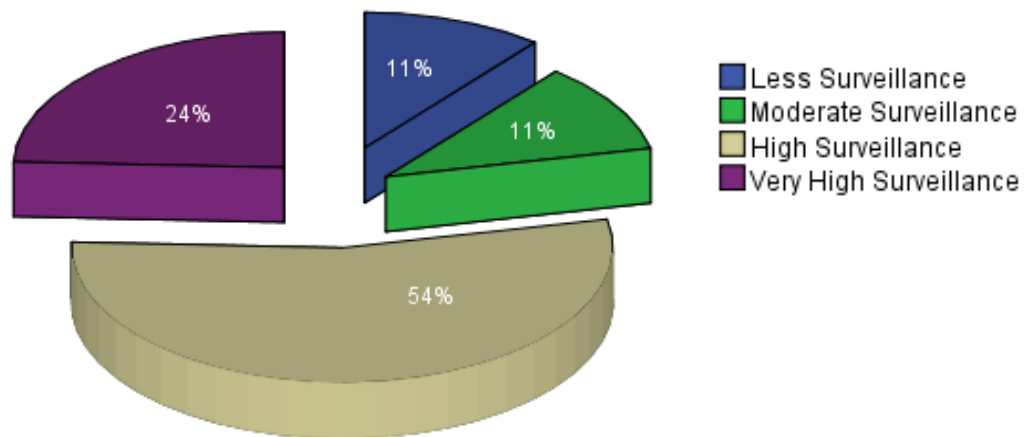
Figure 4.3: Electronic workplace surveillance systems in use by the organizations



4.2.5 Levels of surveillance experienced in the organizations

The study further sought to establish to what level the organizations conduct workplace surveillance. From the findings, 54% of the respondents indicated that their organizations conduct high surveillance. 24% felt their organizations conducted very high surveillance whereas 11% of the respondents thought their organizations conducted moderate level of surveillance. The remaining 11% felt their respective organizations had less surveillance.

Figure 4.4: Levels of Electronic Workplace Surveillance



Source: Author, 2016.

4.3 Extent of use of Electronic Workplace Surveillance

4.3.1 Duration that organizations conduct Electronic Workplace Surveillance

The researcher sought to find out how many hours in a day employee monitoring took place in the organizations. The findings showed that 89% of the organizations carry out 24 hour surveillance of their premises.

Table 4.2: Duration in hours of electronic workplace surveillance

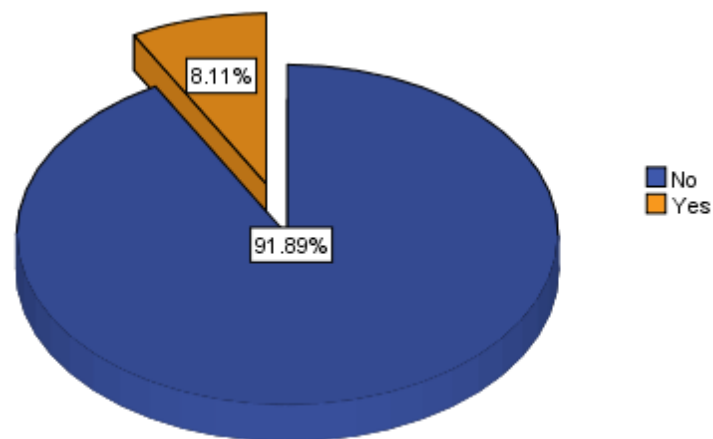
	Frequency	Percent
24 hours	31	89.2
8 hours	1	2.7
No Answer	3	8.1
Total	37	100.0

Source: Author, 2016

The study further sought to find out whether organizations continue monitoring their employees after they leave the workplace. From the findings, 92% of the respondents

indicated that employees are not monitored outside the work premises. 8% of the respondents admitted to still monitoring employees after they leave the workplace.

Figure 4.5: Employee Monitoring outside of the workplace



Source: Author, 2016

4.3.2 Extent of implementation of surveillance systems

The study sought to get the findings on the question of the extent of implementation and use of surveillance systems in the organizations and the results are as summarized in table 4.3. These results are based likert scale rating of 1 – 5 where 1 represented not applicable, 2 represented less surveillance, 3 represented moderate surveillance, 4 represented great extent of surveillance, and 5 represented very high surveillance.

Table 4.3: implementation and use of electronic surveillance systems

Variables	Mean	Std. Deviation	N
Capturing personal data	3.2703	.83827	37
Monitoring employee movement	3.1081	.80911	37
Counting keystrokes	2.4167	.73193	36
Monitoring internet usage	3.3784	.98182	37
Monitoring email use	3.0270	1.01342	37
Phone monitoring/wiretapping	1.2500	.84092	36
Security to employees and company property	3.9189	1.18740	37
Computer screen recording	3.3884	.82836	37
Checking stored user files in company machines	2.8333	.97101	36
Reviewing copier and fax memory	1.2432	.59654	37
Checking what employees say on social media	1.5135	.86992	37

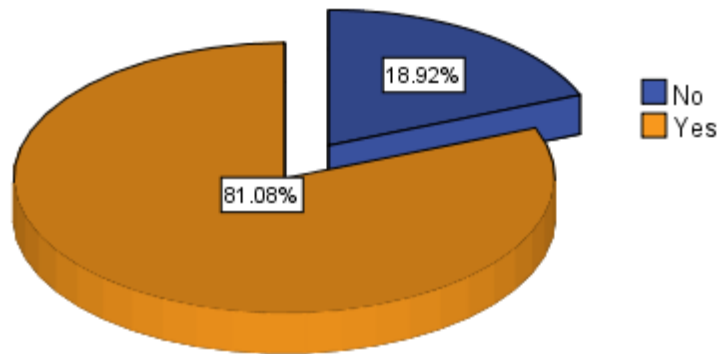
Source: Author, 2016

4.4 Effect on Firm Performance

4.4.1 Increase in Employee Productivity

The study sought to find out whether employee workplace surveillance leads to increased employee productivity. From the results, 81% of the respondents felt that by using electronic workplace surveillance systems, employees tend to be more productive. 19% of the respondents thought that employee monitoring does not necessarily lead to increased productivity.

Figure 4.6: Extent to which surveillance systems affect employee productivity

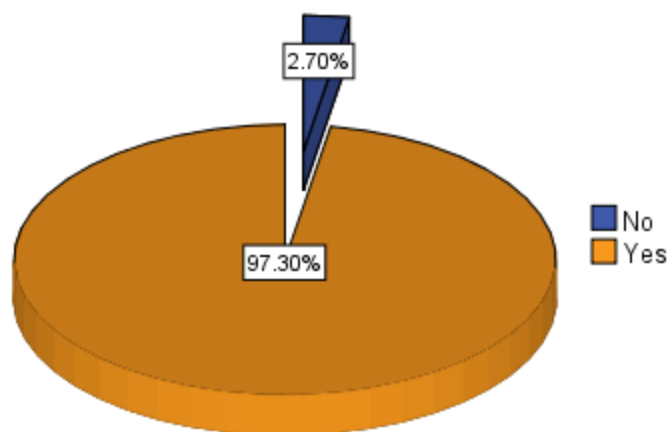


Source: Author, 2016

4.4.2 Safety of company assets

The study further sought to find out whether workplace surveillance systems help in safeguarding company assets. From the results, 97% of the respondents indicated that the use of electronic workplace surveillance systems enhances safety of company assets. The other 3% of the respondents thought that surveillance systems had nothing to do with safeguarding company assets.

Figure 4.7: Surveillance systems in safeguarding company assets

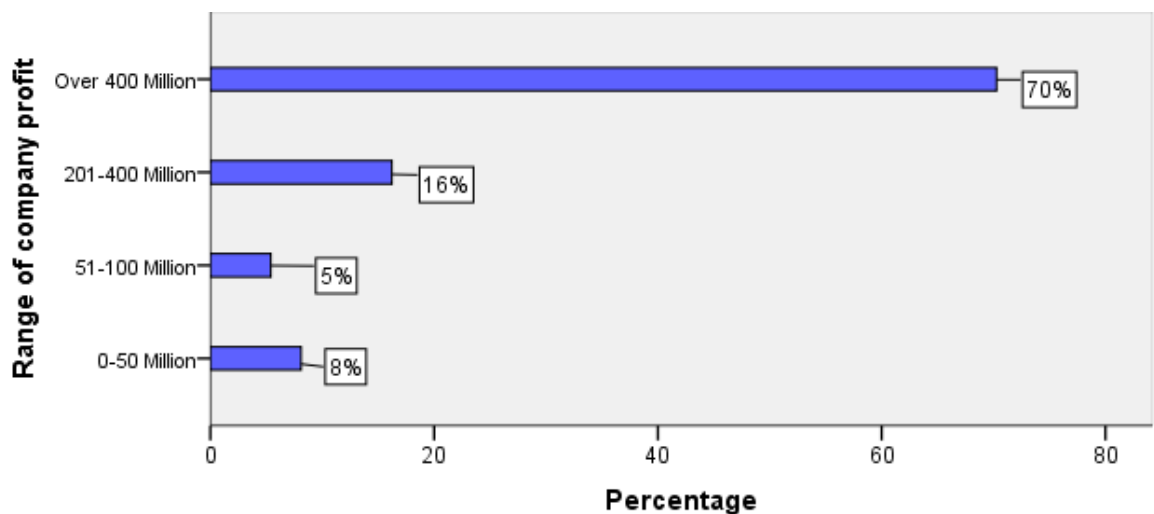


Source: Author, 2016

4.4.3 Range of company profit

The study sought to determine the range in each company's profit in Kenya Shillings in their previous financial year. These results were based on ranges between 0-50 million, 51-100 million, 101-200 million, 201-400 million and over 400 million shillings. From the findings, 70% of the respondents reported to having a profit margin of over 400 million Kenya shillings in their previous financial year. 16% of the respondents reported that their organizations had a profit margin of between 201-400 million shillings, 8% reported of having a profit margin between 0-50 million and the remaining 5% responded that their organizations made profits of between 51-100 million in their previous financial year.

Figure 4.8: Organizational Profits in the previous financial year



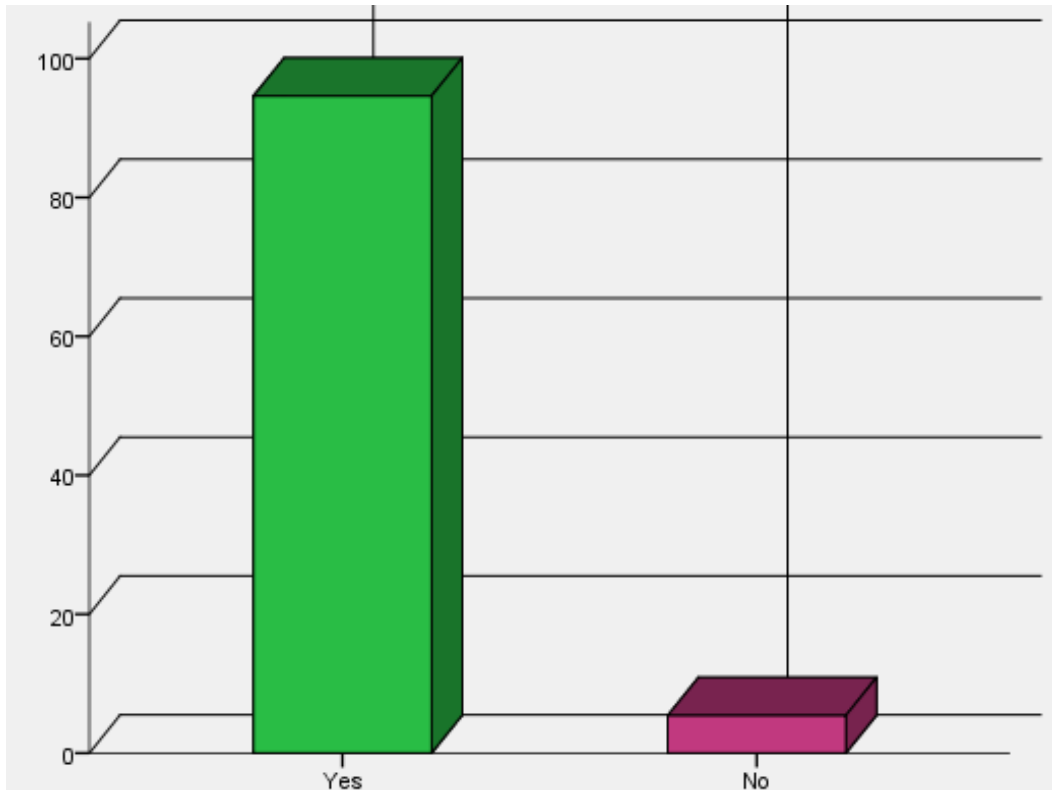
Source: Author, 2016

4.4.4 Organizations' long term goals

The study further sought to establish whether having the premises and employees under surveillance contributed to the organizations realizing their long term goals. From the findings which is summarized on Figure 4.9, 95% of the respondents felt that workplace surveillance directly links to an organization's achieving of long term

goals. The remaining 5% did not see any relation between workplace surveillance and the organization's long term goals.

Figure 4.9: Relation between electronic surveillance and organizations long term goals



Source: Author, 2016

4.5 Challenges on implementing electronic workplace surveillance systems

The study sought to get the findings on the weight of challenges on implementation and use of surveillance systems in the organizations and the results are as summarized in table 4.4. These results are based likert scale rating of 1 – 5 where 1 represented not applicable, 2 represented less extent, 3 represented moderate extent, 4 represented great extent, and 5 represented very great extent.

Table 4.4: Challenges in using electronic workplace surveillance systems

	Not applicable	Less extent	Moderate extent	A great extent	Very great extent	Standard Deviation	Mean
Affect employee trust level	0	7	18	10	2	0.81	3.19
Affect employee efficiency	0	8	16	10	3	0.89	3.22
Affect employee self-drive	0	5	17	14	1	0.74	3.30
Fear among employees	4	16	5	11	1	1.10	2.70
Stress	7	19	6	4	1	0.99	2.27
Complains on violation of privacy	11	10	7	6	2	1.25	2.39
Employee turnover	10	14	8	2	1	1.00	2.14
Affect employee creativity	4	16	10	4	2	1.03	2.56
Affect employee morale	3	12	12	7	2	1.04	2.81
Response time in emergencies	3	10	16	6	0	0.86	2.71
Increased storage requirements	1	5	7	17	6	1.02	3.61
Lack of power	11	11	6	7	1	1.20	2.33
Poor connectivity	11	13	6	6	0	1.06	2.19

The study sought to find out how the respondents rated the challenges most experienced when implementing electronic workplace surveillance systems. According to the findings, increased storage requirements was considered the greatest challenge when implementing electronic surveillance systems by a great extent as shown by a mean of 3.61 followed closely by the effect on employee self-drive to a

moderate extent as indicated by a mean of 3.3. A mean of 3.22 indicates that the respondents considered electronic workplace surveillance systems to affect employee efficiency to a moderate extent. More deductions from the findings indicate that implementing electronic surveillance systems affects employee level of trust to a moderate extent, a mean of 3.19. A mean of 2.71 indicates that electronic workplace surveillance techniques affects employee response time in emergencies to a moderate extent. A mean of 2.56 indicates that the respondents considered the electronic workplace surveillance systems to affect employee creativity to a less extent. With a mean of 2.39, most respondents reported few cases of complaints to violation of employee privacy. A mean of 2.19 indicated that according to most respondents, poor connectivity as a challenge affected the organizations to a less extent.

4.6 Discussion

To establish the relationship between electronic workplace surveillance and performance of the manufacturing firms, a regression analysis was performed.

The regression analysis is concerned with the distribution of the average value of one random variable as the other variables which need not be random are allowed to take different values. A linear regression model was applied. The regression model was as follows:

The model specification is as follows

$$Y = a_1 + b_1X_1 + b_2X_2 + e$$

Where

Y = Performance of Manufacturing Firms

X₁ = Surveillance Systems

X₂ = Characteristics of the firm

a₁ = Constant

e = error term.

Table 4.5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.894 ^a	.800	.775	.611

a. Predictors: (Constant), Email Monitoring, CCTV Surveillance, Internet Monitoring, Computer Monitoring

b. Predictors: (Constant), CCTV Surveillance, Internet Monitoring, Computer Monitoring

Source: Research data, (2016)

Analysis in table 4.5 shows that the coefficient of determination, R² equals 0.800, meaning that the dependent variable (performance) is explained by the independent variables (workplace surveillance methods) by 80 per cent, leaving only 20 per cent unexplained. It is clear that the electronic workplace surveillance systems contribute to a large extent to the level of performance that is achieved by large manufacturing firms in Kenya. This therefore concludes that electronic workplace surveillance systems are important in enhancing performance in organizations, given that the unexplained variance is 20%.

Table 4.6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.167	.387		8.174	0.001
	CCTV Surveillance	0.831	.386	.291	2.151	0.038
	Computer Monitoring	1.833	.387	.660	4.732	0.001
	Internet Monitoring	-0.830	.387	-.179	-2.151	0.039
	Email Monitoring	-0.061	.283	-.022	-.215	0.831
	Wiretapping	0.471	.170	-.624	-.277	0.464

a. Dependent Variable: Organization Performance

Source: Research data, (2016)

Analysis in table 4.6 shows that CCTV surveillance systems have a significant positive effect on organizational performance by 29 per cent. This means that when employees know that their movement and behavior in the workplace are being watched, they tend to focus more on the work leading to increased productivity. Computer monitoring proved to be of the highest significance to organizational performance at 66%. When employees know that at any given time their computer screens are being monitored remotely, they tend to give great effort to work related activities thus being more productive during work hours. In organizations where the employees are required to do a lot of data entry, and the keystrokes are being recorded, employees tend to work fast and focus more on work related activities. This means increased level of productivity hence increased organizational performance. Internet monitoring was found to reduce employee performance by 18%. According to the analysis on table 4.6, this translates to a significant negative effect on organizational performance. With most transactions and applications being internet-based today, monitoring internet use or limiting access to this resource could mean employees focus more on work activities and therefore be more productive during work hours, but at the same time it could also lower employee morale. The other coefficients, email monitoring and wiretapping were found not to be significant, reducing organization performance by 2% and 62% respectively. This could mean that employees do not like it when their emails and telephone conversations are being monitored and this could lead to an increase in complaints of privacy violation.

Table 4.7: ANOVA

Model		Sum of Squares	df	Mean Square	F	p-value
1	Regression	47.730	3	15.910	43.752	0.001
	Residual	12.000	33	.364		
	Total	59.730	36			

Source: Research data, (2016)

For 5% level of significance, the p value being 0.001 (Less than 0.05) means that the model is statistically significant in predicting the relationship between electronic workplace surveillance and organizational performance. Hence, the regression model rejects the null hypothesis that electronic workplace surveillance systems do not affect organizational performance and accepts the alternative hypothesis that electronic workplace surveillance systems influence organizational performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This section presents a summary of the study findings, draws conclusions based on the results and provides recommendations based on the analysis of the research objectives.

5.2 Summary of findings

The study established that most of the Kenyan manufacturing firms listed in the NSE have been in existence for more than ten years. It was confirmed that all of the manufacturing companies targeted by this study use the various electronic workplace surveillance methods. It was also evident from the findings that the different workplace surveillance methods: CCTV, internet monitoring, email monitoring, wiretapping and computer monitoring differently affect organization performance with computer monitoring having the greatest impact at 66%, followed by CCTV surveillance at 29%. The study found out that internet monitoring reduces performance by 18%. This was translated as having a significant negative effect on organizational performance. Email monitoring and wiretapping were the least used surveillance methods and both proved not to be significant as per the findings. Email monitoring was found to lower the performance of employees by 2% and wiretapping had the greatest negative effect by 62%. The findings of this research thus point the importance of combining usage of the various electronic workplace surveillance systems to enhance performance in organizations.

5.3 Conclusions

The study concludes that combining the various methods of electronic workplace surveillance will have a positive effect on organizational performance. Having more emphasis on computer monitoring guarantees increased productivity among employees thus enhancing organizational performance. The results from the regression analysis supports this, indicating that there is a strong relationship between use of electronic workplace surveillance systems and organizational performance. The study also found out that in cases whereby the employees feel their privacy is being violated, they tend to be less productive. Therefore, the ICT managers should place less emphasis on surveillance methods such as email monitoring and listening to employee phone conversations.

5.4 Recommendations

The study has confirmed that electronic workplace surveillance techniques are very significant in enhancing organization performance. All manufacturing companies and other organizations are advised to implement these systems so as to benefit from better organizational performance as a result of increased employee productivity. Organizations are advised to greatly consider computer monitoring since it had the highest significance to organization performance according to the study. Internet monitoring too should be considered by organizations because from the results, it showed a significant negative effect on performance.

5.5 Limitations of the Study

The findings of this study and application therefore are limited to large manufacturing companies in Kenya. They may not be applicable directly to other organizations operating outside the Kenyan manufacturing industry. It is therefore important to note

that they can only be used for comparative purposes and not any direct application in another industry or country.

The research only focused on the large manufacturing firms in Nairobi. It did not feature the large manufacturing firms in other parts of the country. This was because of limited time and resources. Because of the busy schedules, a number of targeted respondents were not able to respond immediately to the questionnaires and requested the documents to be left and be picked after some days once filled. Because of this reason, it was difficult to determine who actually filled the questionnaires.

5.6 Suggestions for future research

This study has reviewed the effect of electronic workplace surveillance on only manufacturing companies listed in the NSE. Further research is recommended in the implementation of the same systems for the other manufacturing companies and even companies that are not necessarily in the manufacturing sector. Further research might also extend into looking at whether the age, training and gender of the manager is a factor in the perceived usefulness of the surveillance data. In addition, looking at whether the manager has an Instrumentalist or Fatalist locus of control affects their views on surveillance might be worthwhile investigating.

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APPENDICES
Appendix I: Questionnaire

SECTION A: GENERAL INFORMATION

1. What is your Gender?
 Male
 Female

2. What is your age group?
 Less than 21
 21-26
 27-35
 More than 35

3. Company Name:
.....

4. What is your position in the company?
.....
...

5. For how long have you worked with the company?
 0-1 years
 1-2 years
 3-5 years
 More than 5 years

6. Which of the following Employee Surveillance Systems does your company use?(You may tick more than one)
 CCTV
 Email Monitoring
 Internet Monitoring
 Wiretapping (Listening to phone conversations)
 Computer Monitoring

7. What level of surveillance do you experience in your organization?

- No Surveillance
- Less Surveillance
- Moderate Surveillance
- High Surveillance
- Very High Surveillance

SECTION B: EXTENT OF USE OF ELECTRONIC WORKPLACE SURVEILLANCE SYSTEMS

8. How many hours in a day does monitoring take place?

.....

9. Are the employees still being monitored once they leave the workplace?

- Yes
- No

10. On a scale of 1-5, to what extent does the organization carry out employee surveillance? Use the key below:

(1 – Not applicable, 2 – less surveillance, 3- moderate surveillance, 4- a great extent of surveillance, 5- very high surveillance)

	Methods of employee surveillance	Please tick the weight you attribute to each of the surveillance method				
		1	2	3	4	5
1	Capturing employee personal data					
2	Monitoring movement of employees					
3	Counting keystrokes					
4	Monitoring internet usage					
5	Monitoring email use					
6	Phone monitoring/wiretapping					
7	Ensuring security to both employees and company property.					
8	Computer screen recording					
9	Checking stored user files in company machines					
10	Reviewing copier and fax memory					
11	Checking what is said about the company by employees on social media platforms					

SECTION C: EFFECT ON FIRM PERFORMANCE

11. Does electronic surveillance increase employee productivity?

Yes

No

12. Does electronic workplace surveillance play a role in safeguarding company assets?

Yes

No

13. What is the value of the company's profits in the last financial year?

.....

14. Does electronic surveillance help the company in achieving long term goals?

Yes

No

SECTION D: CHALLENGES

15. On a scale of 1-5, what is the extent of the listed challenges of implementing electronic workplace surveillance systems? Use the key below:

(1 – Not applicable, 2 – less extent, 3- moderate extent, 4- a great extent, 5- a very great extent)

Challenges of Electronic Workplace Surveillance		Please tick the weight you attribute to each of the challenges				
		1	2	3	4	5
1	Affect employee the level of trust					
2	Affect employee efficiency					
3	Affect employee initiative/self-drive					
4	Cause fear among employees					
5	Stress among employees					
6	Complaints on violation of employee privacy					
7	Employee turnover					
8	Affect employee creativity					
9	Affect employee morale					
10	Affect employee response time in times of emergency or special request					
11	Increased storage requirements					
12	Lack of power					
13	Poor connectivity					

Appendix II: List of Large Scale Manufacturing Companies in Nairobi, Kenya

Sector: Building, Construction and Mining (6)	
Central Glass Industries Ltd	Kenya Builders & Concrete Ltd
Karsan Murji & Company Limited	Manson Hart Kenya Ltd
Kenbro Industries Ltd	Mombasa Cement Ltd
Sector: Food, Beverages and Tobacco (100)	
Africa Spirits Ltd	Highlands Mineral Water Co. Ltd
Agriner Agricultural Development Limited	Homeoil
Belfast Millers Ltd	Insta Products (EPZ) Ltd
Bidco Oil Refineries Ltd	Jambo Biscuits (K) Ltd
Bio Foods Products Limited	Jetlak Foods Ltd
Breakfast Cereal Company(K) Ltd	Karirana Estate Ltd
British American Tobacco Kenya Ltd	Kenafric Industries Limited
Broadway Bakery Ltd	Kenblest Limited
C. Czarnikow Sugar (EA) Ltd	Kenya Breweries Ltd
Cadbury Kenya Ltd	Kenya Nut Company Ltd
Centrofood Industries Ltd	Kenya Sweets Ltd
Cocacola East Africa Ltd	Nestle Kenya Ltd
Confec Industries (E.A) Ltd	Nicola Farms Ltd
Corn Products Kenya Ltd	Palmhouse Dairies Ltd
Crown Foods Ltd	Patco Industries Limited
Cut Tobacco(K) Ltd	Pearl Industries Ltd
Deepa Industries Ltd	Pembe Flour Mills Ltd
Del Monte Kenya Ltd	Premier Flour Mills Ltd
East African Breweries Ltd	Premier Food Industries Limited
East African Sea Food Ltd	Proctor & Allan (E.A.) Ltd
Eastern Produce Kenya Ltd	Promasidor (Kenya) Ltd
Farmers Choice Ltd	Trufoods Ltd
Frigoken Ltd	UDV Kenya Ltd
Giloil Company Limited	Unga Group Ltd
Glacier Products Ltd	Usafi Services Ltd
Global Allied Industries Ltd	Uzuri foods Ltd
Global Beverages Ltd	ValuePak Foods Ltd
Global Fresh Ltd	W.E. Tilley (Muthaiga) Ltd
Gonas Best Ltd	Kevian Kenya Ltd
Hail & Cotton Distillers Ltd	Koba Waters Ltd
Al-Mahra Industries Ltd	Kwality Candies & Sweets Ltd
Alliance One Tobacco Kenya Ltd	Lari Dairies Alliance Ltd
Alpha Fine Foods Ltd	London Distillers (K) Ltd
Alpine Coolers Ltd	Mafuko Industries Ltd
Annum Trading Company Limited	Manji Food Industries Ltd
Aquamist Ltd	Melvin Marsh International
Brookside Dairy Ltd	Kenya Tea Development Agency
Candy Kenya Ltd	Mini Bakeries (Nbi) Ltd
Capwell Industries Ltd	Miritini Kenya Ltd

Carlton Products (EA) Ltd	Mount Kenya Bottlers Ltd
Chirag Kenya Limited	Nairobi Bottlers Ltd
E & A Industries Ltd	Nairobi Flour Mills Ltd
Kakuzi Ltd	NAS Airport Services Ltd
Erdemann Co. (K) Ltd	Rafiki Millers Limited
Excel Chemical Ltd	Razco Ltd
Kenya Wine Agency Limited	Re-Suns Spices Limited
Highlands Canner Ltd	Smash Industries Ltd
Super Bakery Limited	Softa Bottling Co. Limited
Sunny Processor Ltd	Spice World Limited
Spin Knit Dairy Ltd	Wrigley Company (E.A.) Ltd
Sector: Chemical and Allied (62)	
Anffi Kenya Ltd	Crown Berger Kenya Ltd
Basco Product (K) Ltd	Crown Gases Ltd
Bayer East Africa Limited	Decase Chemical (Ltd)
Continental Products Ltd	Deluxe Inks Ltd
Cooper K- Brands Limited	Desbro Kenya Ltd
Cooper Kenya Ltd	E. Africa Heavy Chemicals (1999) Ltd
Beiersdorf East Africa Ltd	Elex Products Ltd
Blue Ring Products Ltd	European Perfumes & Cosmetics Ltd
BOC Kenya Limited	Galaxy Paints & Coating Co. Limited
Buyline Industries Ltd	Grand Paints Ltd
Carbacid (CO2) Ltd	Henkel Kenya Ltd
Chemicals & Solvents E.A. Ltd	Imaging Solutions (K) Ltd
Chemicals and Solvents E.A. Ltd	Interconsumer Products Ltd
Coates Brothers (E.A.) Limited	Odex Chemicals Ltd
Coil Products (K) Limited	Osho Chemicals Industries Ltd
Colgate Palmolive (E.A) Ltd	PolyChem East Africa Ltd
Johnson Diversity East Africa Limited	Procter & Gamble East Africa Ltd
Kel Chemicals Limited	PZ Cussons Ltd
Kemia International Ltd	Royal Trading Co. Ltd
Ken Nat Ink & Chemical Ltd	Reckitt Benckiser (E.A) Ltd
Magadi Soda Company Ltd	Revolution Stores Co. Ltd
Maroo Polymers Ltd	Soilex Chemical Ltd
Match Masters Ltd	Strategic Industries Limited
United Chemical Industries Ltd	Supa Brite Ltd
Oasis Ltd	Unilever Kenya Ltd
Rumorth EA Ltd	Murphy Chemical E.A Ltd
Rumorth East Africa Ltd	Syngenta East Africa Ltd
Sadolin Paints (E.A.) Ltd	Synresins Ltd
Sara Lee Kenya Limited	Tri-Clover Industries (K) Ltd
Saroc Ltd	Twiga Chemical Industries Limited
Super Foam Ltd	Vitafoam Products Limited
Sector: Energy, Electrical and Electronics (42)	
A.I Records (Kenya) Ltd	East African Cables Ltd
Amedo Centre Kenya Ltd	Eveready East Africa Limited
Assa Abloy East Africa Ltd	Frigorex East Africa Ltd

Aucma Digital Technology Africa Ltd	Holman Brothers (E.A.) Ltd
Avery (East Africa) Ltd	IberaAfrica Power (EA) Ltd
Baumann Engineering Limited	International Energy Technik Ltd
Centurion Systems Limited	Kenwest Cables Ltd
Digitech East Africa Limited	Kenwestfal Works Ltd
Manufacturers & Suppliers (K) Ltd	Kenya Power & Lighting Co. Ltd
Marshall Fowler (Engineers) Ltd	Kenya Scale Co. Ltd/ Avery Kenya Ltd
Mecer East Africa Ltd	Kenya Shell Ltd
Metlex Industries Ltd	Libya Oil Kenya Limited
Metsec Ltd	Power Technics Ltd
Modulec Engineering Systems Ltd	Reliable Electricals Engineers Ltd
Mustek East Africa	Sanyo Armo (Kenya) Ltd
Nationwide Electrical Industries	Socabelec East Africa
Nationwide Electrical Industries Ltd	Sollatek Electronics (Kenya) Limited
Optimum Lubricants Ltd	Specialised Power Systems Ltd
PCTL Automation Ltd	Synergy-Pro
Pentagon Agencies	Tea Vac Machinery Limited
Power Engineering International Ltd	Virtual City Ltd
Sector: Plastics and Rubber (54)	
Betatrad (K) Ltd	ACME Containers Ltd
Blowplast Ltd	Afro Plastics (K) Ltd
Bobmil Industries Ltd	Alankar Industries Ltd
Complast Industries Limited	Dune Packaging Ltd
Kenpoly Manufacturers Ltd	Elgitread (Kenya) Ltd
Kentainers Ltd	Elgon Kenya Ltd
King Plastic Industries Ltd	Eslon Plastics of Kenya Ltd
Kingway Tyres & Automart Ltd	Five Star Industries Ltd
L.G. Harris & Co. Ltd	General Plastics Limited
Laneeb Plastics Industries Ltd	Haco Industries Kenya Ltd
Metro Plastics Kenya Limited	Hi-Plast Ltd
Ombi Rubber Rollers Ltd	Jamlam Industries Ltd
Packaging Industries Ltd	Kamba Manufacturing (1986) Ltd
Plastics & Rubber Industries Ltd	Keci Rubber Industries
Polyblend Limited	Nairobi Plastics Industries
Polyflex Industries Ltd	Nav Plastics Limited
Polythene Industries Ltd	Ombi Rubber
Premier Industries Ltd	Packaging Masters Limited
Prestige Packaging Ltd	Plastic Electricons
Prosel Ltd	Raffia Bags (K) Ltd
Qplast Industries	Rubber Products Ltd
Sumaria Industries Ltd	Safepak Limited
Super Manufacturers Ltd	Sameer Africa Ltd
Techpak Industries Ltd	Sanpac Africa Ltd
Treadsetters Tyres Ltd	Silpack Industries Limited
Uni-Plastcis Ltd	Solvochem East Africa Ltd

Wonderpac Industries Ltd	Springbox Kenya Ltd
Sector: Textile and Apparels (38)	
Africa Apparels EPZ Ltd	MRC Nairobi (EPZ) Ltd
Fulchand Manek & Bros Ltd	Ngecha Industries Ltd
Image Apparels Ltd	Premier Knitwear Ltd
Alltex EPZ Ltd	Protex Kenya (EPZ) Ltd
Alpha Knits Limited	Riziki Manufacturers Ltd
Apex Appaels (EPZ) Ltd	Rolex Garments EPZ Ltd
Baraka Apparels (EPZ) Ltd	Silver Star Manufacturers Ltd
Bhupco Textile Mills Limited	Spinners & Spinners Ltd
Blue Plus Limited	Storm Apparel Manufacturers Co. Ltd
Bogani Industries Ltd	Straightline Enterprises Ltd
Brother Shirts Factory Ltd	Sunflag Textile & Knitwear Mills Ltd
Embalishments Ltd	Tarpo Industries Limited
J.A.R Kenya (EPZ) Ltd	Teita Estate Ltd
Kenya Trading EPZ Ltd	Thika Cloth Mills Ltd
Kikoy Co. Ltd	United Aryan (EPZ) Ltd
Le-Stud Limited	Upan Wasana (EPZ) Ltd
Metro Impex Ltd	Vaja Manufacturers Limited
Midco Textiles (EA) Ltd	Yoohan Kenya EPZ Company Ltd
Mirage Fashionwear EPZ Ltd	YU-UN Kenya EPZ Company Ltd
Sector: Timber, Wood Products and Furniture (22)	
Economic Housing Group Ltd	Rosewood Office Systems Ltd
Eldema (Kenya) Limited	Shah Timber Mart Ltd
Fine Wood Works Ltd	Shamco Industries Ltd
Furniture International Limited	Slumberland Kenya Limited
Hwan Sung Industries (K) Ltd	Timsales Ltd
Kenya Wood Ltd	Wood Makers Kenya Ltd
Newline Ltd	Woodtex Kenya Ltd
PG Bison Ltd	United Bags Manufacturers Ltd
Transpaper Kenya Ltd	Statpack Industries Ltd
Twiga Stationers & Printers Ltd	Taws Limited
Uchumi Quick Suppliers Ltd	Tetra Pak Ltd
Sector: Pharmaceutical and Medical Equipment (20)	
Alpha Medical Manufacturers Ltd	Dawa Limited
Beta Healthcare International Limited	Elys Chemical Industries
Biodeal Laboratories Ltd	Gesto Pharmaceutical Ltd
Bulks Medical Ltd	Glaxo Smithkline Kenya Ltd
Cosmos Limited	KAM Industries Ltd
Laboratory & Allied Limited	KAM Pharmacy Limited
Manhar Brothers (K) Ltd	Pharmaceutical Manufacturing Co.
Madivet Products Ltd	Regals Pharmaceuticals
Novelty Manufacturing Ltd	Universal Corporation Limited
Oss. Chemie (K)	Pharm Access Africa Ltd
Sector: Metal and Allied (38)	
Allied Metal Services Ltd	Booth Extrusions Limited
Alloy Street Castings Ltd	City Engineering Works Ltd

Apex Street Ltd Rolling Mill Division	Crystal Industries Ltd
ASL Ltd	Davis & Shirtliff Ltd
ASP Company Ltd	Devki Steel Mills Ltd
East Africa Foundry Works (K) Ltd	East Africa Spectre Limited
Elite Tools Ltd	Kens Metal Industries Ltd
Friendship Container Manufacturers	Khetshi Dharamshi & Co. Ltd
General Aluminum Fabricators Ltd	Nampak Kenya Ltd
Gopitech (Kenya) Ltd	Napro Industries Limited
Heavy Engineering Ltd	Specialized Engineer Co. (EA) Ltd
Insteel Limited	Steel Structures Limited
Metal Crown Limited	Steelmakers Ltd
Morris & Co. Limited	Steelwool (Africa) Ltd
Nails & Steel Products Ltd	Tononoka Steel Ltd
Orbit Engineering Ltd	Welding Alloys Ltd
Rolmil Kenya Ltd	Wire Products Limited
Sandvik Kenya Ltd	Viking Industries Ltd
Sheffield Steel Systems Ltd	Warren Enterprises Ltd
Sector: Leather Products and Footwear (8)	
Alpharama Ltd	CP Shoes
Bata Shoe Co. (K) Ltd	Dogbones Ltd
New Market Leather Factory Ltd	East Africa Tanners (K) Ltd
C & P Shoe Industries Ltd	Leather Industries of Kenya Limited
Sector: Motor Vehicle Assembly and Accessories (17)	
Auto Ancillaries Ltd	Kenya Vehicle Manufacturers Limited
Varsani Brakelining Ltd	Labh Singh Harnam Singh Ltd
Bhachu Industries Ltd	Mann Manufacturing Co. Ltd
Chui Auto Spring Industries Ltd	Megh Cushion industries Ltd
Toyota East Africa Ltd	Mutsumoto Motor Company Ltd
Unifilters Kenya Ltd	Pipe Manufacturers Ltd
General Motor East Africa Limited	Sohansons Ltd
Impala Glass Industries Ltd	Theevan Enterprises Ltd
Kenya Grange Vehicle Industries Ltd	
Sector: Paper and Paperboard (48)	
Ajit Clothing Factory Ltd	Conventual Franciscan Friars-Kolbe Press
Associated Papers & Stationery Ltd	Creative Print House
Autolitho Ltd	D.L. Patel Press (Kenya) Limited
Bag and Envelope Converters Ltd	Dodhia Packaging Limited
Bags & Balers Manufacturers (K) Ltd	East Africa Packaging Industries Ltd
Brand Printers	Elite Offset Ltd
Business Forms & Systems Ltd	Ellams Products Ltd
Carton Manufacturers Ltd	English Press Limited
Cempack Ltd	General Printers Limited
Chandaria Industries Limited	Graphics & Allied Ltd
Colour Labels Ltd	Guaca Stationers Ltd

Colour Packaging Ltd	Icons Printers Ltd
Colour Print Ltd	Interlabels Africa Ltd
Kenya Stationers Ltd	Jomo Kenyatta Foundation
Kim-Fay East Africa Ltd	Kartasi Industries Ltd
Paper Converters (Kenya) Ltd	Kenafri Diaries Manufacturers Ltd
Paper House of Kenya Ltd	Kitabu Industries Ltd
Paperbags Limited	Kul Graphics Ltd
Primex Printers Ltd	Label Converters
Print Exchange Ltd	Modern Lithographic (K) Ltd
Printpak Multi Packaging Ltd	Pan African Paper Mills (EA) Limited
Printwell Industries Ltd	Ramco Printing Works Ltd
Prudential Printers Ltd	Regal Press Kenya Ltd
Punchlines Ltd	SIG Combibloc Obeikan Kenya

Source: Kenya Association of Manufactures Directory (KAM) 2013