

**THE IMPACT OF TECHNOLOGY ON THE EFFICIENCY OF CORRECTIONAL
SERVICES IN AFRICA: A CASE STUDY OF KENYA**

BY

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DECLARATION

I, Dixon Mwakazi, do hereby declare that this is my original work and has never been submitted to any institution of higher learning.

Dixon Mwakazi

Date.....

The study has been submitted for examination with my approval as University supervisor.

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DEDICATION

I dedicate this entire study to my dear family, my Late Mum, Agatha Lwambia Mwakazi, who passed on during the course of this study, my Dad, Jackan Mwakazi, who has been my teacher throughout my life, my beloved wife Catherine Binelli, my wonderful daughters, Agatha and Michelle, for their prayers and support.

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May God bless you all abundantly.

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ABSTRACT

Prisons in Africa have not been improved much since their creation by colonial powers. Many African countries did not see prisons as priority investment weighed against education, health and other challenges due to limited resources. Hence, Africa has the oldest prison infrastructure and technologies. Most of the work is done manually which means higher operational costs. Several African countries like Kenya and Tanzania have started computerising systems. The available literature on use of technology on correctional services in Africa and Kenya is scanty. Most of it focuses on developed systems in the USA, Australia and Europe. The literature does not specifically show how overall efficiency and safety in Kenya Prisons will improve for prisoners, staff and the general public who fund costly prisons. Based on this backdrop, this study sought to establish the impact of technology on the efficiency of correctional services in Africa, with special reference to Kenya. Apart from utilizing secondary data, the researcher went to the field and collected raw data from both staff, stakeholders and inmates by use of structured questionnaires, individual interviews, and focused groups. For purposes of obtaining primary data, the study used purposive sampling where the researcher chose sampling units subjectively in order to obtain representative samples. The study also collected secondary data from newspapers, published and unpublished literature, articles, journals and credible internet sources. Primary data was analyzed both qualitatively and quantitatively. The study found that technology in the Kenyan correctional services played a vital role in improving security in the facilities. The study also revealed that technology in the correctional services in Kenya has enhanced provision of education. The health care provision in Kenyan correctional services has improved by using medical technologies. The study found that initial cost and current under-funding affects the implementation of technology in the correctional facilities. Moreover, use of technology by administration has improved efficiency in the correctional services in Kenya. The study recommends more use of technology in the correctional facilities in Kenya. The study also recommends that measures be put in place to mitigate the challenges that come as a result of use of technology in the correctional facilities. Correctional staff should be trained on how to tackle the problems that arise due to the use of technology. The study recommends

that the government should support the implementation of technology in the correctional services. This will promote the effective use of technology for correctional services in Kenya.

CHAPTER ONE

1.0 Introduction

In this present era, the society is under great influence of technology. Generally, technology is considered to be a means through which information can be transferred and shared among individuals globally. Whether at home or elsewhere, technology shapes our daily lives. Technology led to total transformation on how the government conducts its business.¹ There are several examples on the use of technology in various fields including finance, trade, economy, and education. In the current society and economy that is networked with complicated communication systems, almost all our daily business activities are over the net and this could result in us being trapped in our own advanced state. In a well-developed and networked country, its government, power supply systems, traffic network, economic structure, etc. can end up being limited in their operations or be paralyzed.²

In order to enhance level of efficiency in their organizations, management of public organizations and their leadership is trying to encourage various mechanisms that will encourage adoption of new technology. For instance, it has been observed that internet and mobile phones can result in enhanced service provisions by public institutions such as hospitals, administrative offices and

¹Tenibiaje, D. J.: Literacy, Information and Communication Technology as Tools for Empowerment of Inmates, *European Journal Of Educational Research* Vol. 1, No. 2 (ISSN 2165-8714), pp.117-126. (2012) URL.: http://www.eu-jer.com/EU-JER_1_2_117_Joseph.pdf

² HAIG Zs., Connections between cyber warfare and information operations, AARMS, Vol. 8, No. 2, pp.329–337, (2009) URL.: <http://www.zmne.hu/aarms/docs/Volume8/Issue2/pdf/13haig.pdf> .

schools.³ Specifically, there is one specific public institution where penetration of technology was very slow at first; this was in the correctional institutions.⁴ During the first half of the 20th century, correctional institutions and other government facilities remained behind business in regard to adoption of new technology.

The act of depriving one from accessing technology is considered a bottleneck in all social setups; this comprises the prison institution as a whole. Leading and organizing routine activities for correctional facilities is the role of prison administration. Prison employees play the role of supporting and organizing the routine activities in the institution based on the rules and procedures applied in the institution. All operations and functions in prison institutions are directed to prisoners.

Based on expert opinion, the reason why correctional facilities are slow adopters of new technology is mainly because of the nature of their activities. From evidence gathered from research conducted in the field, it is fair to state that; correctional facilities have the potential of improving service provision by embracing new technology. The main concern of a correctional institution is on safety of prisoners and prison staff. It is possible to enhance level of efficiency in correctional institutions through adoption of new advanced technology. Effectiveness in correctional facilities services can be enhanced by use of new and innovative technologies.⁵

For instance, with the use of computers, it is possible to collect unlimited

³U.S. Congress, Office of Technology Assessment: Criminal Justice, New Technologies, and the Constitution, OTA-CIT-366 (Washington, DC: U.S. Government Printing Office) p.31. (1998) URL.: <https://www.princeton.edu/~ota/disk2/1988/8809/8809.pdf>

⁴ Ibid, p 1

⁵Hart, S. V.(2003).Making Prisons Safer through Technology, By, Corrections Today, Vol. 65, No. 2 , URL.: https://www.ncjrs.gov/pdffiles1/nij/04_03.pdf.

information and share it with other government institutions which are crucial for proper functioning of the institutions. Based on this backdrop, this study sought to establish the impact of technology on the efficiency of correctional services in Africa, with special reference to Kenya.

1.1 Background of the Study

In the developing world, corrections are starting to shift from punishment and are focusing more on rehabilitating and reintegrating offenders. This drove officials of correctional facilities to try and find ways of enhancing efficiency and effectiveness of their services. The process of providing offenders with humane and professional rehabilitation has proven to be complex and requires an approach with several phases and the need to adopt modern strategies and principles for modern management. With the constant increase in offenders' population especially with the increasing use of lighter sentences, the task is even aggravated.

Global Perspective of the impact of technology on the efficiency of correctional services

Globally it is expected that corrections and prison services will prove to contribute towards the safety of the public in the long run.⁶ Currently, our daily lives are significantly affected by technology especially with the fast advancement in technology and this has led to prison facilities lagging behind because they still rely on traditional ways of managing offenders and organizational management. Different technologies applied in managing

⁶ Brennan, T., Wells, D. & Alexander, J. (2004). Enhancing prison classification systems: The emerging role of management information systems. U.S. Department of Justice, National Institute of Corrections: Washington, DC.

offenders are becoming popular in correctional facilities but it is likely that none of the technologies provide the chance of improving functioning of the organization as compared to management information system for offenders.⁷

Government agencies in the developed world continue to make progress in implementing both user-friendly data systems to manage their department's information needs and increasingly sophisticated e-government services to interact with the public. Unfortunately, this is much less the case in the developing world. As highlighted in the recent 2014 edition of Measuring the Information Society Report by the United Nations International Telecommunication Union,⁸ this is a symptom of a broader disparity in the development of ICT across the world. For example, for the six regions of the world that were examined in the report, the 'information development index' for Africa was the lowest of all six regions.⁹ There is a composite index that combines 11 indicators into one benchmark measure referred as ICT Development Index (IDI) and its role is monitoring and comparing ICT developments in different countries.

As a critical sub-sector of government, corrections and prison systems throughout the world are intended to contribute to public safety and the preservation of the rule of law. These are laudable and challenging goals to meet even under optimal circumstances. However, although all correctional and prison systems share some common challenges, it is obvious that there is considerable

⁷ Maruna, S. & Immarigeon, R. (2004). After crime and punishment: Pathways to offender reintegration. Cullompton: Willan.

⁸ ITU (International Telegraph Union). (2014). Measuring the Information Society Report: Executive Summary. International Telecommunications Union: Geneva, Switzerland. Available at: <http://www.itu.int/en/ITU-D/Statistics/Pages/publications/mis2014.aspx>

⁹ Ibid, p 8

divergence in resources available to contend with them. There is wide disparity in availability of resources for managing and providing correctional services, ensuring facilities infrastructure are adequate and modern, service and program breadth to address prisoners needs, staff training and their professionalism, respect for and entrenchment of basic human rights.¹⁰

Adding to the existing challenge is the fact that majority of the prisons located in developing countries are yet to adopt the new technologies; most of them still rely on traditional methods which are resource intensive, not secure, cannot be relied upon, are paper-driven and access to records prove to be challenging. Increasingly, modern correctional practice is moving towards a focus on rehabilitation and reintegration rather than only punitive warehousing of offenders.¹¹ Without technology-based tools to monitor and track the characteristics of offender populations, the assessment of their risk and needs, outcomes of interventions, and other critical offender management issues, this renewed focus on public safety through effective reintegration will not be easily realized.¹²

Correctional and prison systems that wish to become up-to-date and adopt modern principles of practice will need to embrace the use of technology to meet their objectives. In the developed world, technology is increasingly being applied to improve prison conditions and service delivery to offenders in a variety of

¹⁰Maruna,S. & Immarigeon, R.,(2004). After crime and punishment: Pathways to offender reintegration Cullompton: Willan.

¹¹ Porporino, F. (2010). Bringing sense & sensitivity to Corrections: From programs to 'fix' offenders to services to support desistance. In J. Brayford, F. Cowe & J. Deering. (Eds). What else works ? Creative work with offenders. London: Willan.

¹² Wright, K.N. (2004). An assessment of the capacity to measure performance among the nation's prison systems. *Federal Probation*, 68(1): 51-58.

ways.¹³ As well as, the ability to gather, store and retrieve a range of information about offenders through application of automated information systems is now becoming commonplace. Some good examples of this are the sophisticated Prison Management System introduced by the Singapore Prison Service and the NOMIS developed by the National Offender Management Service in the UK.¹⁴ The typical modus operandi in the developed world is to contract out the design and development of these systems to large, multi-national computer systems firms. A significant level of funding has to be allocated to do this. Unfortunately, this pathway is much less realistic for developing correctional systems where lack of both resources and technological infrastructure are key issues.

Africa Perspective of the impact of technology on the efficiency of correctional services

In Africa, correctional services have evolved from the colonial days to date. However, they did not adopt modern technologies as fast as other regions of the World. Most of them face one crisis after another due to various challenges. The use of rudimentary technologies in security, health, training and the general management of the institutions has had serious implications on employees and prisoners' safety besides the losses arising therefrom.¹⁵ This study sought to find out the impact this may have in the efficiency of these penal institutions. Change is often resisted for fear of the unknown and in Correctional services it comes with many complications. The prison environment can be hard and generally the

¹³ Donnell, P.(2015). A new age of humane treatment: How technology can change prisons, eTeknix, November 2015. Available at:<http://www.eteknix.com/a-new-age-of-humane-treatment-how-technology-can-change-prisons/>

¹⁴Pattavina, A. (ed.). (2005). Information technology and the criminal justice system. Thousand Oaks, California: Sage.

¹⁵Penal Reform International 2015. Global Prison Trends 2015. Available at <https://www.penalreform.org/Global-Prison-Trends-2015>

available technology in Africa does not make life better for staff and inmates.

Analysing African prisons indicates conditions in many jurisdictions are worse and do not conform to international best practice on human rights.¹⁶ There has been minimal investment in infrastructure to increase capacity and modern technology necessary for efficient service delivery and safety. This has resulted in dilapidated prisons not meeting acceptable standards today.¹⁷

In African nations, a different reality presents itself. It is routine that information is still recorded in a traditional manner, with paper, pen and pencil on pieces of paper or manual registers. Prohibitive costs for developing automated systems have left most developing correctional systems lagging behind considerably, both in terms of operational or more strategic analysis. It is difficult to work on reforming a system when there is such limited objective data available to point to what might be going wrong or what could be going well. Added to this is the fact that various international standards and treaties expressly require correctional agencies to collect and store particular information on offenders in a reliable and consistent fashion, not just for operational purposes but also in the interest of respect for basic human rights.¹⁸ In Namibia, OMIS was designed and implemented; a modern and fully integrated information system that has been developed and implemented realistically 'in-house', with only limited external consultant expertise and expense, and within an affordable budget.

Kenyan Perspective of the impact of technology on the efficiency of correctional services

¹⁶ Ibid, p 128

¹⁷ Ibid, p 22

¹⁸ Stokes, R., James, M. & Christian, J. (2008). Handbook on Prisoner File Management. Vienna: United Nations Office of Drugs and Crime.

In Kenya, mobile phones and the advent of social media enable offenders to execute criminal acts while behind bars. Globalization means criminals operate virtually everywhere in space and time enabled by technology. Yet on the flipside the same technologies can be adopted and used to serve prisoners efficiently. Use of huge registers, paper and journals can be limited and save taxpayers money when correctional services adopt Information Communication Technology (ICT) and mobile technologies.¹⁹ For example, a biometrically enabled system allows prisoners to manage what concerns them: money, visits, food and daily or weekly shopping.²⁰ Where technology is adopted, Prisons officers are released from administration to concentrate on rehabilitation work. A very important feature is that it gives prisoners educational and rehabilitative power who then benefit from being responsible.²¹

Furthermore, the fact that the priority of prisons administrations is the safety of prisoners and staff, underscores the need to adopt technologies which enable them to do so. This study sought to demonstrate how these innovative and new technologies, as numerous researchers have recommended, will enhance efficiency and effectiveness in prisons. ICT systems will avail countless opportunities to gather and share data with other government entities that is vital for institutional operations.²² Based on this backdrop, this study sought to establish the impact of technology on the efficiency of correctional services in Africa, with special reference to Kenya.

¹⁹ Jackson Brian et al., (2015). Identifying High-Priority Technology and Other Needs for the U.S. Corrections Sector, RAND Corporation.

²⁰ Ibid, p 6

²¹ Ibid, p 6

²² Tsend-Ayush G: (2017). *The Impact of Information and Communication Technologies on Prison Institutions*. A paper in the journal *Hadmernok* (XI) 1, pp 278-279 accessed on 01/02/2018.

1.2 Statement of the Research Problem

Prisons in Africa were a creation of colonial powers which explains the aging infrastructure and facilities generally found in most African countries. Many African countries did not see prisons as priority investment weighed against education, health and other problems requiring limited resources. Thus, Africa has the most outdated prison infrastructure and technologies. Most of the work is done manually which means higher operational costs.

For example, most records are in form of files and registers in most African prisons. These records often get lost or destroyed due to dilapidated office environs. Simple tasks like tracing inmates can take hours due to this manual record keeping. Similarly, monitoring of prisoners' movements in prisons is physical which means any laxity among staff can lead to escapes or security lapses. Several prison breaks by very dangerous prisoners have been reported across Africa and Kenya indicating a worsening security situation in our correctional facilities. Add to this prisoner to prisoner violence, deaths, murders and disease outbreaks, poor medical and educational and other facilities, the use of rudimentary technology is to blame.²³ These challenges faced by correctional facilities in Kenya and Africa in general can be alleviated by use of technology in our correctional facilities. Technological systems in correction facilities would ensure that prisoners are brought to courts as scheduled and to compile data which may be useful in identifying risk levels and prisoners needs.

Several African countries like Kenya and Tanzania have started computerising systems.²⁴ The available literature on use of technology on correctional services in Africa and Kenya is scanty and focuses on developed systems in the USA,

²³ Ibid, p 6
²⁴ Ibid, p 30

Australia and Europe. The literature does not specifically show how overall efficiency and safety in Kenya Prisons will improve for prisoners, staff and the general public who fund costly prisons. Based on this backdrop, the focus of this study was to establish the impact of technology on the efficiency of correctional services in Africa, with special reference to Kenya.

1.3 Research Questions

The study sought to answer the following research questions;

- i. What is the role of technology in correctional services in Kenya?
- ii. What are the challenges facing the use of technology in correctional services in Kenya?
- iii. How can technology be utilized to improve efficiency in Kenyan Correctional services?

1.4 Research Objectives

The general objective of the study was to establish the impact of technology on the efficiency of Correctional Services in Africa with reference to a case study of Kenya. The study was specifically seeking;

- i. To establish the role of technology in correctional services in Kenya
- ii. To examine the challenges facing the use of technology in correctional services in Kenya
- iii. Find out how technology can be utilized to improve efficiency in Kenyan Correctional services.

1.5 Justification of the Study

This study after examining available literature on the subject matter, noted that

limited literature focusing on the impact of technology on efficiency in correctional services in Africa existed. Technology greatly impacts efficiency in correctional institutions hence the need for more empirical enquiry. Therefore, this study endeavoured to be an academic record for use by scholars on technology issues in corrections and add fresh knowledge and insights which will be invaluable in theory building for further action. Adopting modern technologies will greatly improve efficiency in Correctional institutions in Africa. Thus, this study sought to inform better policymaking that will hasten adoption of modern technologies in correctional services in Kenya. The Open-door policy pronounced in 2001 which initiated penal reforms in Kenya achieved limited success. However, the on-going review of prison legislation is work in progress. But the progressive 2010 Constitution of Kenya, in Chapter 4 on Bill of Rights emphasizes the primacy of a person's rights. This study sought to help develop policies ensuring prisons through use of technology are efficient in upholding those rights. This study will also be testimony of my knowledge of the subject matter. This may open lots of possible openings in consulting, advising or employment in future especially where new technologies are being adopted around the World. Other jurisdictions may seek to adopt the recommendations from this study in their own correctional institutions later.

1.6 Literature Review

1.6.1 Role of Technology in Correctional Services

In addressing the needs of prison employees, the increased usage of technology is a crucial aspect that should be addressed. Advancement in technology has been beneficial in enhancing efficiency of operations and lowering costs. The

main challenge that prisons are being faced with is the use of modern security systems and security of its employees. The main source of power in prison is information. Effectiveness in prison management can only be achieved if information is controlled at all levels by operators. In simple terms, it is being informed on what is happening all the time, despite the challenges that relate with prison environment whereby most of the time information is withheld.²⁵

Through increased use of technology in prisons, the level of security for both prisoners and prison employees has improved. There are unique situations that pose danger to prison employees and therefore jeopardize their life and wellbeing. There are a number of solutions that technology provides on tackling the issue of safety and security. Some of the measures are physical security and it involves the use of X-ray machines, metal detectors and wands. There are also systems that detect explosives and visitors are required to enter using biometric systems to make sure that prisoners don't pose as visitors and manage to escape.²⁶

Most of the time, medical employees in prisons make use of telemedicine. Through the use of telemedicine, consulting is made possible through the use of video conferencing via equipment such as medical video cameras and therefore physicians can consult with medical personnel. The health care in prisons can therefore improve and healthcare cost reduces, and also enhance the efficiency in work performed by medical employees in prisons. When a prisoner is taken to an outside facility for medical attention it poses a great risk to the society, the prison staff and gives the prisoner an opportunity to escape. Global Positioning

²⁵ Meurisseh, (2015): The Use of Modern Technologies and the Impact on Prison Life, Director General EPI, Belgium.

²⁶ Kimmett E.(2013). Through the gateway: How Computers Can Transform Rehabilitation, Nina C hampion, p.6

System (GPS) is a newly developed feature for prison systems. Using this feature, it warns on those prisoners who are about to get out of the prison facility and with the use of computers it is possible, to establish their specific locations at any given time. Prison staff can see different locations of the prison at the same time with the use of surveillance technology. Also, there are personal alarms that are computerized and track locations and allow prison officers to respond to any distress and therefore send officers close to the site to attend to the emergency.²⁷

Also, prison employees depend on the new technology in tracing released prisoners and current ones. Another technology that is applied in tracking those individual prisoners to communicate with is the speaker ID technology and also it assists in keeping an eye on any plans such as escape plans, smuggling of illegal stuff and gang activities. It is expected that very soon monitoring of prisoners will even be more efficient with the use of a smart card which is a plastic card having a computer chip with the ability to store all kinds of information about an individual prisoner and this includes their medical history and the food they use. Through the use of ICT, prison employees have the ability of operating cell doors remotely in unison and independently and can also control flushing of toilet remotely.²⁸

In addition, for a long time, prisons have been using CCTVs to facilitate remote viewing of different parts of the prison at the same time. In prison, there is a lot

²⁷Ruzsonyi, P.(2015) prison and crime prevention through prisoners' preparation for successful reintegration, 4th International scientific and professional conference 'police college research days in Zagreb', Zagreb, Croatia, 23-24 April 2015 pp.221-241(ISBN 978-953-161-291-6)

²⁸ UNESCO, (1990). World Declaration on Education for all. Framework for Action to meet learning needs. World Conference on Education for all. Jomthion 4-5 March. Thailand.

of violence witnessed and negative behavior is common and therefore, it is possible that CCTVs help in managing this bad behavior. Prisoners are the ones engaging in such activities and the result is negative; they include physical harm such as assaults between prisoners themselves, prisoners and officers, sexual aggression and the worst is murder. There are psychological effects such as threats and verbal abuse; or economic risks such as robbery, theft and extortion. Also, CCTV act as a general tool for monitoring in prisons and also helps in detecting crime and lack of order and also enhances internal control. In order to satisfy prison officers' communication requirement, they use the PMR (professional mobile radio).²⁹ Priority and group management are also facilitated by the use of PMR. Transmission of alarm information is also made possible through the use of smart terminals that facilitate the use of radio communication infrastructure.

1.6.2 Challenges Facing the Use of Technology in Correctional Services

Introduction of ICT in multiple prison facilities poses challenges relating with logistics and operations.³⁰ It is important to, aside from introducing relevant and reliable technology in prisons, to also accompany it with trained personnel and sophisticated hardware and software. This allows the threshold for prisoners to increase, especially for those who could or could not afford it especially the ones involved in learning activities such as E-learning. This implies an increase in the gap existing between the haves and the have snots. There are a number of prisoners who would like to participate in educational training but because of

²⁹ Kimmet E.(2013).Through the gateway: How Computers Can Transform Rehabilitation, Nina C hampion, p.6

³⁰ Lockitt G. W.: Technology in prisons, Report by, Winston Churchill Travelling Fellowship, (2011) URL.: https://www.wcmt.org.uk/sites/default/files/migrated-reports/797_1.pdf

financial challenges, lack of proper skills and education they are unable to enrol.

The issue of “digital divide” is real in the actual society and the case can be the same in prisons as the use of ICT continues to increase. Those individuals who are not competent with technology are at a risk of being socially excluded. This is the case not only for employees in prisons but also with prisoners themselves. With the use of ICT, it is very easy for individual privacy to be violated. Through the use of ICT for surveillance and tracking of prisoners, it makes the work of changing prisoners’ behaviour more leveraging. Therefore, the rights and status of prisoners become low and weak.³¹

Do prison staff control and track prisoners’ activities 24/7? Does it mean that an imprisoned individual can lose their privacy even when using the toilet and bathroom? Do universal human rights get infringed for prisoners as well? Are there any clear responses to these questions? Two opposite societal views could dominate. There is a group of individuals who on one hand are optimistic regarding the development expected in the future regarding incorporation of ICT in prison systems. In their view, technological advancement could transform positively the entire paradigm of prisons. Aside from maintaining and supporting prison administration and ensuring availability and quality of operations, it also improves prisoners’ mental and intellectual capabilities. There are individuals who on the other hand are not in support of ICT usage in prisons. Their opinion on ways in which ICT can be applied in prison is skeptic and negative. Their opinion was that with the introduction of ICT in prisons the routine activities of

³¹ Stoller E. Nancy, Strupp H.: Technology and Dehumanization in U.S. Prisons (Presentation), Public Health through the Bars. (2002) URL.: <https://cjtc.ucsc.edu/PowerPoints/Technology-prison-apha.pdf>

prisoners will be vulnerable and will go against the most basic rights of an individual. In addition, the work of prison employees becomes more inhuman and routine.

The result would be a decline in the relationship existing between prisoners, prison employees, and prison administration. Increased use of ICT will result in a decline in human relations and the outcome would be that the long-established prison systems will be destroyed. This simply means that the community connections will be lost which is very important for prisoners once they have finished serving their sentence and have been released. Nonetheless, there are several barriers inhibiting meaningful contacts that are created by prison system structures. A visitor can experience substantial amount of burden when offered personal visits, and this might force them to miss work, employ someone to take care of their children, and pay for travelling expenses of their loved ones.³² These reasons justify reasonability on the use of ICT in prisons. Additionally, it is very crucial to ensure that ICT used in prisons is very secure. There are instances when prisoners in collaboration with prison employees try to tamper with already existing ICT systems such as the security surveillance system and E-learning facilities. To prevent such activities from happening in the future, it is important for relevant authorities and individuals competent with ICT to come up with rules, procedures, regulations, and programs both hardware and software that will be well compatible with the introduced sophisticated systems.

³² Stoller E. Nancy, Strupp H.: Technology and Dehumanization in U.S. Prisons (Presentation), Public Health through the Bars. (2002) URL.: <https://cjtc.ucsc.edu/PowerPoints/Technology-prison-apha.pdf>

1.6.3 Use of technology to improve efficiency in Correctional Services

Continuous use of technology in prison benefits both the society and prisons. Its effects go beyond the prison facilities. There are several benefits that come with the use of monitoring equipment such as electronic bracelets which includes the increase in tax revenue, reduced costs of welfare and also the need for more prisons reduces. Also, prisoners are able to maintain ties with their families and the community at large.³³ Main ICT applied in prisons provides inmates with vivid educational programs. Through their participation in such programs, inmates get basic digital literacy (E-learning). Such programs could help in the rehabilitation of prisoners and increase the possibility of them having more contact with their families.³⁴ Through ICT programs, the opportunities that inmates will be empowered with knowledge and opportunities increases.³⁵

It is in human nature for them to want connection with each other. This can be very important especially for those individuals imprisoned in prisons. The pain of being imprisoned can be alleviated by regularly contacting family, supporters and friends. The processes mentioned above have the ability of improving chances of succeeding. In order to enhance sustainability of such activities, management of prisons are trying to develop new ways. For example, the introduction of video visitation allows prisoners to video call with their family and friends through personal computer.³⁶ Through video visitations, prisoners can not only see but

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Lockitt G W : Technology in prisons, Report by, Winston Churchill Travelling Fellowship, (2011) URL: https://www.wcm1.org.uk/sites/default/files/migrated-reports/797_1.pdf

³⁴ Ibid, p 28

³⁵ Ibid, p 31

³⁶ Digard L., Di Z. M., Yaroni A., and Rinaldi J.: A New Role for Technology? Implementing Video Visitation in Prison. New York, NY: Vera Institute of Justice. (2016) URL: <https://www.vera.org/publications/video-visitation-in-prison>

also hear the voices of their loved ones; this has an emotional effect.³⁷

Imprisoning an individual entails depriving them of their freedom. In addition to the aspect of security, prisons also have the responsibility of reintegrating convicts into the society once they have served their sentences. Just like any other citizen, a prisoner according to international recommendations and conventions, has the right to education. Through education a prisoner is able to develop character and personality that defines them. The role of education in the reintegration process is very crucial. Globally, all prisons apply prison education. It has been established that prison education is effective in lowering criminal behavior among some prisoners.

Not all criminals will change because of being imprisoned but still it is important in preventing crime. Based on findings of a meta-analysis, there are basic principles that tend to be followed by any correctional treatment. Any form of treatment or education provided in prisons will be effective based on their quality. Success levels of the programs mainly depend on the general atmosphere of the prison, level of cooperation and free will. Prisons form part of the society and prisoners are just like any other human being and when they commit a crime they have to be punished. The difference is that the form of punishment applied against them is more vital.³⁸

The use of ICT in the society has advanced and therefore, it is also important to provide prisoners with the opportunity to use ICT in training and also education (E-learning). By providing prisoners with e-learning, they can gain access to both

³⁷ Ibid, p 14

³⁸ Bulman P.: Using Technology to Make Prisons and Jails Safer, p.4. URL.: <https://www.ncjrs.gov/pdffiles1/nij/225764.pdf> (Viewed 2 Dec 2016).

online and offline materials from various schools and vocational training institutions.³⁹ Additionally, prisoners can obtain their degrees from central examination facilities through secure internet channels.⁴⁰ Through e-learning prisoners are provided with huge opportunities for enhancing prison education by widening their qualification opportunities, improve training and education quality and motivate other inmates especially the new ones.

Through e-learning, inmates are provided with opportunities to study general and vocational education and also build their digital literacy.⁴¹ Digital skills are a necessity in current society both in work environment and in daily lives and therefore providing inmates with digital literacy makes their reintegration into the society more successful. Experts in this field have insisted on the importance of educating the general public on the reasons why ICT is introduced in prisons, not for leisure purposes of prisoners but rather to ensure that inmates are provided with up-to-date qualifications which in turn enhances their reintegration into the society, the possibility of them securing jobs and also lower costs which results from re-offenders.⁴²

Prison staff face a major challenge of smuggled contraband and the worst of all is mobile phones. Most of prison escapes are facilitated by mobile phones which allow prisoners to communicate with their accomplices outside the prison. With the increasing number of mobile phones and their significant reduction in size and metal components it becomes more challenging to detect them using metal

³⁹ Ibid, p 16

⁴⁰ Lockett G. W.: Technology in prisons, Report by, Winston Churchill Travelling Fellowship, (2011)
URL.: https://www.wcmt.org.uk/sites/default/files/migrated-reports/797_1.pdf

⁴¹ Allard T., Wortley R., and Stewart A.: The Purposes of CCTV in Prison.
URL.: https://www98.griffith.edu.au/dspace/bitstream/10072/13693/1/33137_1.pdf..

⁴² Lockett G. W.: Technology in prisons, Report by, Winston Churchill Travelling Fellowship, (2011)
URL.: https://www.wcmt.org.uk/sites/default/files/migrated-reports/797_1.pdf

detectors. The most effective way of dealing with such challenges has been the use of frequency jamming.⁴³

1.7 Theoretical Framework

Among the many areas of research in information systems, adoption of technology is one of the most significant. Carr⁴⁴ explained that technology adoption is the stage where an individual or an organization adopts technology to be used. There are rapid strides that have been made in technological innovations in every domain that is conceivable. In the recent past, issues relating with the adoption of technology have gained popularity. The government and other institutions have invested hugely in the introduction of new advanced technology with the potential of bringing paradigm change in users' lifestyle. Nonetheless, the innovation won't be fruitful if the intended users do not adopt it.

The theoretical foundation for this study was Planned Behaviour Theory (PBT) by Ajzen⁴⁵, 1991. The proposition of this theory was first done in 1991 by Icek Ajzen and its creation was based on Theory of Reasoned Action (TRA) by Martin Fishbein and Ajzen in 1975. This theory on planned behaviour adds to the idea of Perceived Behavioural Control (PBC) which is a construct to subjective norms and construct attitude making the TRA. PBC is considered to be the perception of an individual regarding how easy or difficult it is to perform certain behaviour they are interested in. This is different from the concept of Rotter⁴⁶ on perceived

⁴³Hungarian Prison Service Yearbook (ISSN: 1587-2319) 2014.

⁴⁴ Carr Jr, V. H. (1999). Technology adoption and diffusion. The Learning Center for Interactive Technology.

⁴⁵ Ajzen, I.(1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211

⁴⁶ Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied*, 80(1), 1.

locus of control since it varies depending on the situation an individual is facing.

The expectancy of an individual that is more generalised is locus of control and it tends to maintain its stability through different situations. Therefore, critics facing TRA depends on static construct mainly on attitude and therefore can't be applied in predicting behavioural results but these challenges have been addressed by PBT. PBC gets its foundational basis on Self- Efficacy Theory (SET) by Bandura⁴⁷ which was developed from SCT theory. Bandura ⁴⁸ explained that self-efficacy is the level of efficiency through which an individual can execute course of action needed in dealing with prospective situations. Based on the theory, self-efficacy is crucial in determining change in behaviour because it results in building up of behaviour for coping.

1.8 Research Hypothesis

Guided by the outlined objectives the research hypotheses are:

1. Technology plays a significant role in correctional services in Kenya
2. There are challenges facing the use of technology in correctional services in Kenya
3. Technology can be utilized to improve efficiency in Kenyan Correctional services.

1.9 Research Methodology

Apart from utilizing secondary data, the researcher endeavoured to go to the field and collect raw data from both prisons staff, inmates and stakeholders by use of

⁴⁷ Bandura, A., & Cervone, D. (1986). differential engagement of selfreactive influences in cognitive motivation. *Organizational Behavior and Human Decision Processes*, 38(1), 92-113.

⁴⁸ Ibid, P 18

structured questionnaires, individual interviews, and focused groups. For the purposes of obtaining the primary data, the study relied on purposive sampling where the researcher chose sampling units subjectively in order to obtain samples which were more representative. The study also collected secondary data from newspapers, published and unpublished literature, articles, journals and credible internet sources. Primary data analyzed both qualitatively and quantitatively as per mode of collection from the field.

1.10 Proposed Chapter Outline

The study was organized in chapters with individual chapters addressing specific issues as per the objectives and general outline of the study. The first chapter presents introduction to the study. It commences with background information, followed by statement of the problem, research questions, objectives of the study, justification of the study, scope, and limitations of the study, definition of concepts, literature review, theoretical framework, research hypotheses, and research methodology. Chapter two includes discussion on the role of technology in correctional services. Chapter three covers challenges facing the use of technology in correctional services. Chapter four analyzes technology that can be utilized to improve efficiency in Kenyan Correctional services.

Finally, chapter five carries condensed findings in the form of the summary, conclusion and recommendations in line with observations on how technology can be utilized to improve efficiency in Kenyan Correctional services.

CHAPTER TWO: THE ROLE OF TECHNOLOGY IN CORRECTIONAL SERVICES IN KENYA

2.0 Introduction

This chapter analyses findings relevant to the first objective that sought to establish the role of technology in correctional services in Kenya. The chapter analyses the role technology on security, education, healthcare, employment and rehabilitation in correctional services.

2.1 Role of Technology in Correctional Services

Over the last two decades, digital communication and computers have developed tremendously and are now part of our daily lives. Computerization has resulted in improved and streamlined human endeavors which include areas of work, entertainment, learning and criminal justice system. In its website, Saint Joseph's University noted that the number of available digital equipment now to make criminal justice jobs more effective continue to grow rapidly. Important technologies such as the global positioning systems (GPS), advanced cameras, robots and high-powered computer systems have improved surveillance, investigation and analysis procedures.

Prisons are usually associated with high walls, bars and locked doors but there is a lot that is required other than barriers to ensure that the environment is safe and secure for both prisoners and employees of the prison; this can be achieved through the application of modern technology⁴⁹. There is constant evolvement of the public experience with digitalization and therefore is their expectation regarding services provided by the government. It is possible for correctional facilities to improve on service delivery through their adoption of operations

⁴⁹ Northfield, R. (2018). Prison tech: keeping inmates and staff secure. <https://eandt.theiet.org>

model that mainly focuses on the values of their citizens.

Through digital revolutions, opportunities are created to fundamentally transform ways in which technology is applied in providing solutions that are platform based.⁵⁰ Over time, corrections are becoming more complex, since offenders are increasingly suffering from mental related issues and the population of offenders is diverse with that of old offenders increasing. Such trends are the ones encouraging the government to put into consideration ways of delivering services in different ways to meet the needs of different groups of offenders.⁵¹

For example, with the use of mobile applications, officers can supervise individual offenders either on probation or on parole and allow those being supervised to access services and programs better. Individuals under supervision can benefit from telepresence technology through increased visitation opportunities, educational opportunities and improved health care made possible through telemedicine and video visitations.⁵²

Both prison officers and prisoners benefit from precision of drone location which helps in tracking of prisoners. For instance, in Holland, prisoners are monitored using RFID bracelets. In cases where the bracelet is tampered with, it raises an alarm; also, the bracelet allows officers to track movement patterns over time.⁵³

Biometrics is another technique used in tracking and monitoring inmates, visitors and other illegal practices. According to the founder of biometric software, Biometric, this technology has the potential of bringing about change in prison security and other daily activities. Efficiency in prison management systems can

⁵⁰ Kathuria, A., and Porporino, F. (2015). Implementing Information Technology in Corrections in the Developing World. International corrections and prisons associations..

⁵¹ Ibid, p 20

⁵² Ibid, p 23

⁵³ Biometric, (2018). global provider of biometric security systems offering core fingerprint identification solutions. Retrieved from <https://www.bayometric.com/>

be enhanced with the use of biometric technology in areas such as management of prison visitors, property overseeing, keeping of inmates' records, and staff organizing. For instance, suggestions provided by Biometric was that when prisoners are being transferred, their fingerprints should be scanned from place of departure and scanned on reaching their destination or in different locations along the way which helps to identify whether there is an inmate that has not arrived.⁵⁴

There are other technologies such as games that are educational to offenders, tablets and other smart devices that help prepare prisoners for their release, and in-cell sensors or body worn that help detect any changes in the health of the prisoner. There are also technologies that detect changes in voice patterns when talking over the phone to help prevent any self-harm or violence to officers or fellow prisoners and also biometrics for offenders as well as prison officers.⁵⁵ If the spending on technology is increased it will have positive impacts in preventing re-offending by providing offenders with education, rehabilitation and self-worth, and therefore ends the vicious cycle that many offenders find themselves in.

2.2 Security in Correctional Services

With advancement in technology, every aspect of the society is affected and this is inclusive of the correctional institutions. Obviously, there is need to invest more in security in correctional institutions. Safety of officers and inmates can be improved through the use of technology and can also enhance efficiency in these

⁵⁴ Smith P.S. (2012). Imprisonment and internet access: Human rights, the principle of normalization and the question of prisoners access to digital communications technology. *NJHR* 30(4): 454–482

⁵⁵ Sellers M.P. (2016). Online learning and recidivism rates. *International Journal of Leadership in Education* 19(5), 632–636

institutions' operations. Technology such as automatic system and tracking system for offenders and improved commissary system are in existence and have proved to be effective in correctional institutions.⁵⁶

One of the most beneficial technological developments that can benefit correctional institutions is the use of automated management system for offenders. This system will allow multiple individuals to gain access to offender's records and information at the same time and therefore mitigates the challenge of waiting for paper files. Implementation of automated management system by any agent is beneficial in many ways but the most beneficial is the fact that it allows sharing of information in real time. In instances where there are some changes made on a file of an offender all individuals accessing the files will receive the same updates.⁵⁷ The Penal Reform International⁵⁸ posited that effective case management systems were needed to ensure that the suspects are timely produced in courts and to collate information which can be applied in identifying levels of risk and needs among the inmates.

There are also systems that are used by some facilities to track the whereabouts of inmates. The entire prison facility is installed with sensors at different locations and all prisoners wear barcoded bracelets. When the inmate passes a sensor, their barcode is scanned and the time and location recorded. It is possible for the tracking systems to be programmed so that whenever inmates visit areas that are restricted or are gathered in large group an alarm is set off. This system is also helpful to officers because it helps them to identify where

⁵⁶ Bautista, M. B. (2014). Integrated Jail Management System for the Bureau of Corrections. *Ugo ng, 6 (1)*

⁵⁷ Drake, D.H. (2012). Prisons, punishment and the pursuit of security. Critical criminological perspectives. UK: Palgrave Macmillan.

⁵⁸ Penal Reform International. (2015). *Global Prison Trends*. London: Penal Reform International.

each prisoner is at any given time; this is even more beneficial whenever the prison is under lockdown.⁵⁹

Also, in some of the correctional institutions, officers are provided with devices that detect whenever a prisoner falls, especially as a result of an attack. Whenever an officer is attacked, it is possible for them to call for help or even inform their fellow colleagues on their specific location. Systems have the ability of handling both tasks of notifying officers so that they can come to the rescue. The UN Office on Drugs and Crime⁶⁰ explained that electronic monitoring is a new technique of keeping track and supervising those who have been released, but awaiting trial, as a way of enforcing a number of sentences that are executed in the community, and early release.

Reinhart⁶¹ noted that electronic monitoring was used to monitor offenders in the community and were used by their probation and parole officers. The commonly used forms of monitoring are the global positioning system (GPS) and radio frequency (RF). The GPS monitoring demands the offender to wear an ankle bracelet which allows their probation officer to track their specific locations at all times. There are areas that the offender is restricted from visiting and this can be permanent to a schedule set. Inclusion zones may be set limiting a given participant to be in a given workplace during working hours. On the other hand, exclusion zones can be established limiting an individual from going near certain addresses and whenever they go near those places, an alert is sent to the officer.

⁵⁹ Opafunso, Z. O., & Adepoju, O. O. (2016). Prison reforms system and inmate s welfare in Nigeria. *Arts and Social Sciences Journal*, 7 (1), 1-6.

⁶⁰ United Nations Office on Drugs and Crime. (2013). *Handbook on strategies to reduce overcrowding in prisons*. Vienna: United Nations.

⁶¹ Reinhart, C. (2014). *Electronic monitoring of offenders*. Hartford: Connecticut General Assembly . Available at www.cga.ct.gov/2014/rpt/2014-R-0065.htm No. 63

In addition, with the use of GPS system, one can track the speed in which the offender is moving in and whenever they stop at a particular location.

In regard to the RF system, the offender also wears a bracelet and a home monitoring unit is placed in their house. When the participant comes near the unit, the bracelet is detected and monitoring center operational 24/7 hours receive a notification. Based on the nature of the offender, the court sets an individual's schedule such that he or she comes and goes from the home according to that schedule. Video technology can also be adopted and used in arranging court hearings remotely, which will assist in barring transportation of detainees to the courtroom and back to the detention rooms⁶².

Efficiency has also been enhanced through automated commissary system which has also increased the possibility of facilitating safety. A Commissary store within the correctional institutions allows prisoners to buy products and can be automated so that it tracks the number of items an inmate purchases over a particular span of time. For instance, the facility can restrict the number of toothbrushes an inmate purchases within a month. Whenever they reach their limit, they can no longer buy the item. If an inmate is flagged to be purchasing too many toothbrushes it could suggest that they are using them to make a weapon.⁶³

Also, the program can be applied to monitor the amount of funds that are transferred to the prisoner's commissary account. If the system established that it is the same person who deposits funds to various accounts of the inmate, it

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Kimani P. (2006). Administration of the Kenya Prisons Organization', resource material series No .98.

⁶³ Muhoro P. (2005). Crime Prevention: current issues in correctional treatment and effective countermeasures', resource material series No. 57

raises alarm so that further investigations can be done. In such cases, it could imply that the offender is still carrying out illegal activities either inside or outside the prison. Another suspicious case is when the account of the offender receives large sums of money from individuals who are not immediate family members; and therefore, calls for further investigation.⁶⁴

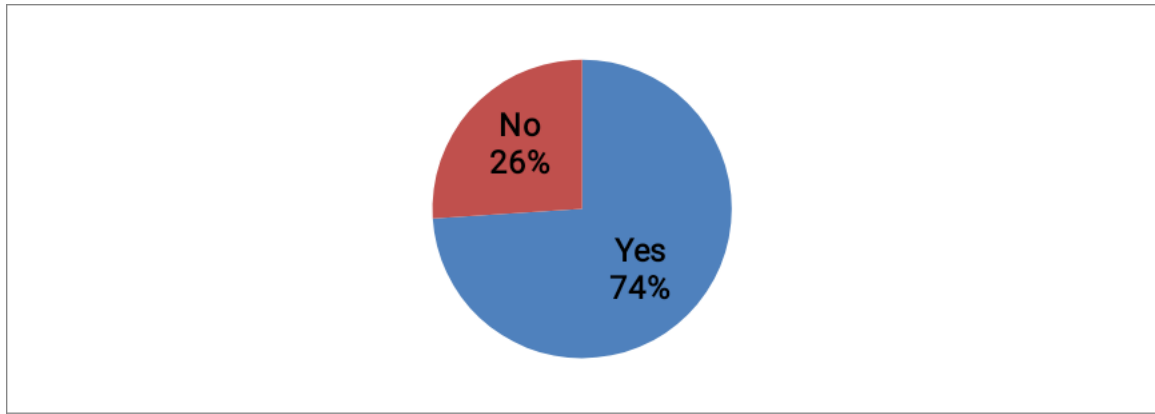
In 2011, the Kenyan government held talks with private security company G4S with a view to privatizing some prison services, a move that could change the face of Kenya's correctional centres. The company was bidding for electronic monitoring of prisoners under house arrest, where they are tagged with a gadget that sends signals once the prisoner leaves a restricted area.⁶⁵

Research on application of technology in improving security in correctional services in Kenya is as shown in Figure 2.1. The survey revealed that most respondents, 74 percent, indicated that technology is used in improving security in correctional services in Kenya. However, 25 percent disagreed that technology is used in improving security in correctional services in Kenya. This implies that technology is very important in improving security in the correctional services in Kenya.

Figure 2.1: Use of technology in improving security in correctional services in Kenya

⁶⁴ Amanda D. (2012). Good practice principles in reducing reoffending: a review of the literature..

⁶⁵ Mbogo, S. (2011). G4S opens talks to run Kenya's prison services. <https://www.businessdailyafrica.com>, 20/1/2011



On whether Kenya has adopted technology in its correctional services, the study revealed that Kenya has incorporated technology in its correctional services. This has helped the correctional services to be in line with others globally. The technology adopted to improve security in the correctional services include the use of CCTVs and use of trackers to spot prisoners.

2.3 Education in Correctional Services

The purposes of imprisonment or deprivation of individual's liberty is to rehabilitate the individual and protect the society from criminals. International laws stipulate that imprisonment is more than just depriving an individual of liberty but should also involve other opportunities that allow offenders to obtain skills and knowledge to help with their re-integration into the society and therefore reduce the number of re-offenders. Imprisonment alone lacks the ability to address the issue of social reintegration of prisoners. Crime can be reduced through vocational training offered to offenders while in prison since they can use them in the outside world to benefit themselves.⁶⁶ Therefore, the essential technology are important skills that each person requires to ensure they live their

⁶⁶ Audu, U.F. & Agbo, J.A. (2010). Educational Technology in Practice. De New Creation Publishing House Ltd., Kaduna

lives confidently, independently and effectively in this contemporary society".⁶⁷

Providing inmates with opportunities to learn and acquire skills and also allow them to develop work experience plays a very crucial role in reducing crime because once they are released. the skills they have acquired help them to stay away from crime and therefore contributes to the vision of the prisons service by ensuring public safety and reduction of recidivism. Prison inmates can and have taken the advantage of technology to further their education. Just like any other citizen, a prisoner according to international recommendations and conventions, has the right to education. Through education a prisoner is able to develop character and personality that defines them. The role of education in the reintegration process is very crucial.⁶⁸

Through E-learning, prisoners are provided with opportunities to learn vocational education and other subjects and also get a chance to enhance their digital literacy. In this era and age, digital literacy is necessary both at work and in daily lives and therefore providing prisoners with digital literacy is important in enhancing their reintegration into the society. Individuals who lack digital knowledge are at risk of being excluded.

In Nigeria, Daily Post and Vanguard reported that the Controller-General of the Nigerian Prisons Service (NPS), Ja'afaru Ahmed and the National Public Relations Officer, DCP Francis Enebore, in their separate media briefings in Abuja, claimed that there were over 420 prisons inmates across the country running different

⁶⁷ Okojie, M.U. (2010). Information and Communication Technology (ICT) and Curriculum Innovation in Secondary Schools in Nigeria: Nigeria Journal of Curriculum Studies: 17(3).

⁶⁸ Petersin, P. (2000). Computerization of Management Systems and Records, London: Pearson Publication Limited

degree programmes with National Open University of Nigeria (NOUN).⁶⁹ In the words of the Spokesperson of the service “As part of reforms in the Federal government, inmates are allowed to enrol for university education to ensure that their lives outside prison have a meaning”.⁷⁰

Education and technology are very important in our current society; therefore, prisoners should also be provided with an opportunity to use technology in training and education. By doing so, offenders are provided with better opportunities in the labor market once they are released and therefore reduce the chances of being re-offenders. Lockitt, insisted on the importance of education to the general public on the reasons why ICT is introduced in prisons, not for leisure purposes of prisoners but rather to ensure that inmates are provided with up to date qualifications which in turn enhances their reintegration into the society, the possibility of them securing jobs and also lower costs which results from recidivism; hence, making streets and homes safer.⁷¹

More so, through E-learning, prisoners are provided with opportunities to learn various subjects and vocational studies and also are given a chance to enhance their digital literacy. Currently, digital competency is a necessary skill both at work and in daily lives and therefore providing prisoners with qualifications in the field of multimedia technology will enhance the reintegration of prisoners back into the society.⁷²

Prisons in Kenya provide both male and female offenders with educational and

⁶⁹Daily Post (2018). Prisoners Become Degree Holders. Retrieved from <http://dailypost.ng/2018/01/29/430-prisoners-become-degree-holders> on

⁷⁰ Tenibaje, D. J (2012). Literacy, Information and Communication Technology as Tools for Empowerment of Inmates, *European Journal of Educational Research*, 1(2), .117-126.

⁷¹ Lockitt G. W. (2011). Technology in Prisons, Report by, Winston Churchill Travelling Fellowship, (2011) URL.: https://www.wcmt.org.uk/sites/default/files/migrated-reports/797_1.pdf

⁷² Onyango P. (2008). Correctional Systems in Kenya', Resource material serial No. 94, 157th International training course participants paper, (2008), 231.

technical and training which is inclusive of: carpentry, masonry, joinery, tailoring and dress making, hairdressing, weaving, theology, art and sculpture, computer studies, building and construction, mechanics, among others. The reasons for providing such programs is to equip inmates with expertise and skills that will be beneficial to them once they are released. This allows them to be self-sustainable, act as role models in the society, provide for their families and add value to the community. These education programmes go a long way to help the inmates to avoid recidivism.⁷³

Despite it being a rare case in Kenya, in 2015 there were nine inmates and 27 warders from Thika who graduated with certificates in ICT literacy. The graduands benefited from the *Eneza programme*, which was an initiative started by students of JKUAT who aimed to intensify computer literacy in areas that are underserved such as police stations and prisons. In the program, students mainly from School of Computing and Information Technology volunteered to teach prisoners and officers in prisons on internet, computer application, book keeping, emailing, among others.

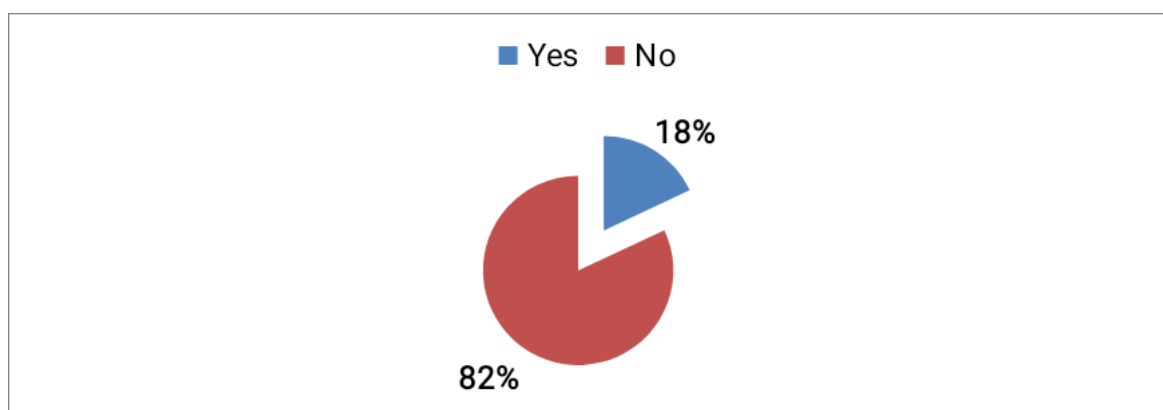
One of the inmates who graduated, a businessman before landing in prison; after receiving computer literacy, he is empowered more and is ready to be reintegrated into the society. The inmates hoped they will purchase computers to use in advertising their businesses unlike the traditional techniques that have been overtaken by technological advancements. Majority of young inmates having basic computer skills were convinced that once they are done with their term, they can make use of internet to apply for jobs and search for them.⁷⁴

⁷³ Muchiri, D. (2009). *Improving Health and Sanitation Facilities in Kenyan Prisons*. GOK Press

⁷⁴ Ibid, P 31

The researcher sought to find out whether use of technology in education plays a crucial role in correctional services as shown in Figure 2.2. Results show that 82 percent of the respondents support that the role of technology in education is very important in the correctional services while 18 percent were of the opinion that application of technology in education does not play a crucial role in correctional services. This implies that the role of technology in education is very important especially for correctional services.

Figure 2.2: The Role of Education in Correctional Services



The study also revealed that use of technology in education in correctional services helps inmates to be computer literate. Computer knowledge is very important in the changing business world. Knowledge on information technology is highly needed in the job market nowadays.

2.4 Healthcare in Correctional Services

Inmates experience mental health due to various challenges such as overcrowding, lack of privacy, enforced solitude, being cut off from social networks, being insecure regarding future prospects (work, relationships, etc.), and lack of adequate healthcare especially dealing with mental health.⁷⁵ In addition, most of the correctional institutions receive health care services that are substandard. Because most institutions do not have psychiatric services the result has been mental illnesses that are not treated such as anxiety, depression, schizophrenia and bipolar disorders; which are common illnesses experienced by prisoners.⁷⁶

Based on a report by Bureau of Justice, 44.7% prisoners reported to have serious

⁷⁵ Leathard, A. (2002). *Going inter-professional: Working together for health and welfare*. London: Routledge.

⁷⁶ Welch, M. (2011). *Corrections: A critical approach*. 3rd ed. New York: McGraw-Hill Companies, Inc

conditions such as hypertension and diabetes which is approximated to be twice as much as compared to the case in general population (26.9%).⁷⁷ The case of mental illness is even much higher; more than half of prison population (64.2%) suffer from mental illnesses in comparison with only 11% of general public aged 18 years and above.⁷⁸

The use of technology can be helpful in improving health services in prisons. Meaningful developments in technology have been in the area of telemedicine which allows healthcare to be delivered across distance with the use of technology and other modalities of communication. Through the use of telemedicine, exchange of medical information is possible and also it facilitates diagnosis, monitoring, referrals and interventions offsetting high costs that relate with patients who initially it was challenging to gain access of them.⁷⁹

Most of the time, telemedicine is applied in instances where health care providers cannot come in contact with their patients because of physical barriers. Therefore, its potential use in correctional facilities is high. Through the use of telemedicine, healthcare access is improved, transport cost is decreased and the risk of escape is reduced.⁸⁰ All over the world, correctional institutions maintaining quality health care programs usually employ few physicians and their access to outside specialists is limited. Whenever there is need for specialized medical care, the inmates have to be transported to secure facilities or external medical facilities so that they can be attended to. Health care can be improved by

⁷⁷ Bureau of Justice Statistics, Medical Problems of State and Federal Prisoners and Jail Inmates, 2011–12 (NCJ 248491).

⁷⁸ Bureau of Justice Statistics, Mental Health Problems of Prison and Jail Inmates. (NCJ 213600).

⁷⁹ Hill R, Luptak M, Rupper RW (2010). Review of Veterans Health Administration telemedicine interventions. *Am J Manag Care.* 16(12), e302–10.

⁸⁰ Moore J (2002) Management and administration of correctional health care. Civic Research Institute, USA.

the use of telemedicine because it allows access to specialists and lowers transport cost and other costs that relate with security management.⁸¹

Watson explained that telemedicine has allowed highly demanded specialists to be accessed and therefore prisoners can benefit from expert consultations. Prisoners with limited access to health care can benefit from remote physicians for consultations facilitated by telemedicine. In cases of burn patients, experts can evaluate the burns using telemedicine and therefore physicians will be more confident when dealing with these patients.⁸² Watson further did argue that telemedicine in prison is effective in cost and benefits psychiatry and emergency medicine. Aoki in his study on comparison between tele-ophthalmology and non-tele ophthalmology strategies in inmates established that the promise held by tele-ophthalmology is high in reducing prisoners care cost, lowers chances of blindness as a result of diabetic retinopathy in type 2 diabetic patients.⁸³

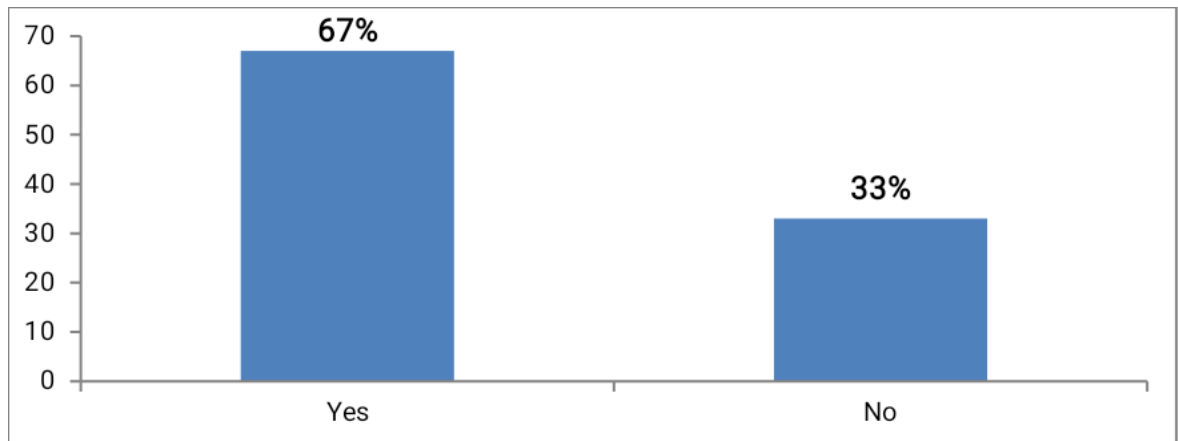
The study sought whether the use of technology has improved health care provision in correctional services in Kenya. Results in Figure 2.3 show that technology has improved healthcare provision in correctional services in Kenya as shown by 67 percent. However, 33 percent of the respondents were not of the opinion that technology has improved healthcare provision in correctional services in Kenya. Generally, the results imply that technology has improved healthcare provision in correctional services in Kenya.

Figure 2.3: Importance of technology in improving provision of healthcare in correctional services in Kenya

⁸¹ Wortley, R. (2011). *Psychological criminology: An integrative approach*. Oxon: Routledge.

⁸² Watson R, Stimpson A, Hostick T (2004) Prison health care: a review of the literature. *Int J Nurs Stud* 41: 119-128.

⁸³ Aoki N, Dunn K, Fukui T, Beck JR, Schull WJ, et al. (2004) Cost-effectiveness analysis of telemedicine to evaluate diabetic retinopathy in a prison population. *Diabetes Care* 27: 1095-1101



Also, it was established that the use of technology in health provision in correctional services has helped inmates to access medical services more easily and this has improved the health of prisoners.

2.5 Employment in Correctional Services

Application of advanced and innovative technology makes it possible for correctional institutions to better and widen the employment programs that exist in their institutions. Increasing levels of accessibility to internet, email and computers in prisons allow inmates to acquire skills and abilities required in securing them employment once they are released.⁸⁴ Justice Action explained that when prisoners are allowed to have personalized computers and access to internet, it enhances the inmates' ability to look for jobs while still in prison and also study any course of interest to them.⁸⁵

Based on research, it has been established that offenders who take part in correctional education are 43% less likely to be re-offenders unlike those who do not get involved. The basis of these estimates is researches that carefully considered various motives and the variations between beneficiaries and non-

⁸⁴ Knight V. (2015). Some observations on the digital landscape of prisons today. *Prison Service Journal* 220(3): 3–9

⁸⁵ Justice Action, (2011). *Computers in cells: Maintaining community ties and reducing recidivism*. Sydney: Justice Action

beneficiaries of correctional education.

In the United Kingdom (UK), a research conducted in 2012 on usage of ICT established that among the 42 prisons that were investigated, 22, translating to 52 percent allowed inmates to apply for jobs through secure messaging systems, 33% made use of relay massaging to contact various agencies, 31% made use of ICT in workshops located inside the prison and 21% applied them for conducting virtual interviews. In the UK, there is the virtual education system which offer campus education offering various employment-related functionalities, but in relation to educational functionality, it is seen to be under developed.⁸⁶

In San Francisco, there is a couple of tech veterans (Beverly Parenti and Chris Redlitz) who offer training to prisoners on coding and entrepreneurship even before they are released from prison. Their services are non-profit and some of the things they teach is software programming, entrepreneurship and coding and they cover prisons in California, and four of them use computers that lack access to the internet. In a period of four years they have had several guest speakers including tech executives, and entrepreneurs and have built connections which help secure high-paying jobs for prisoners once they are released. In San Quentin State Prison there is a group of web developers who despite still imprisoned design for businesses and therefore build their portfolio, reference and earn money that can benefit them once they are released. In order for a prisoner to be a participant, they must have had good behaviour for 18-36 months and must have GED, take part in math and algebra classes, take a logic test, write an essay and agree to be interviewed in the prison. Over the past eight years, there have been a total of 320 trainees, none of them has ever returned to prison and

⁸⁶ Champion N & Edgar K. (2013). *Through the gateway: How computers can transform rehabilitation*. London: Prison Reform Trust

majority of them have secured jobs in tech firms after they were released.⁸⁷

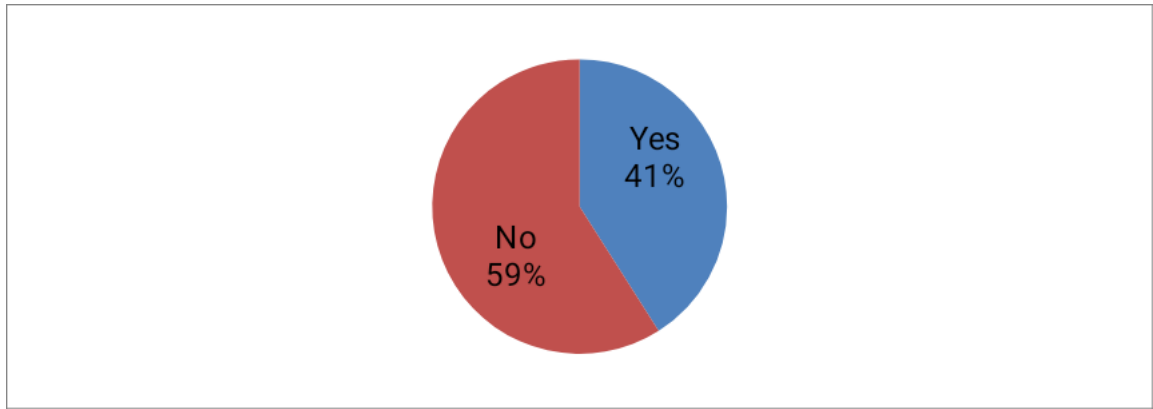
Through vocational training and apprenticeship programs offered to prisoners in Kenya, they are able to connect with prospective employers. Additionally, there are programs that provide prisoners with opportunities to study for credentials and certificates that are recognized by the industry. Based on a research study that was conducted recently regarding the state of education in correctional institutions, Ndombi⁸⁸ established that the common certifications were in the field of construction, plumbing, electricity, occupational safety and welding. More than 50% of the respondents also indicated that they had Ms Office certificates which illustrates that they considered computer skills to be an important area for prisoners to learn. Some of the vocational training can land one college credit, especially for the postsecondary programs.

The focus of this study was to establish whether the use of technology has assisted inmates to secure employment after serving their term in correctional services in Kenya. Results are as indicated in Figure 2.4. The results show that 59 percent of the respondents disagreed that use of technology enable inmates to secure employment after serving their term in correctional services in Kenya. Moreover, 41 percent agreed that use of technology enable inmates to secure employment after serving their term in correctional services in Kenya. This is an indication that use of technology has not helped most inmates to secure employment after serving their term in correctional services in Kenya.

Figure 2.4: Employment of Inmates in correctional services in Kenya

⁸⁷ Mamdani, M. (2018). *Citizen and subject: Contemporary Africa and the legacy of late colonialism*. Princeton University Press.

⁸⁸ Ndombi, C. S. (2014). *Impact of prison rehabilitation programs on recidivists: A case of prisons in the North Rift region of Kenya* (Doctoral dissertation, Moi University).



2.6 Rehabilitation in Correctional Services

Research has started focusing on ways through which ICT application can be applied in rehabilitation programs, for instance training on cognitive skills. Based on a research by Melbourne's Swinburne University of Technology in collaboration with private operators in prisons and developers of games, it investigated ways through which games and other technologies can be applied in developing cognitive skills which will assist in reintegrating released prisoners.⁸⁹

Based on a wide forensic psychological evidence, the level-up programs are delivered over 3-hour sessions with 14 sessions and there are 12 modules that relate with key cognitive skills and acceptance, locus of control, being open to interventions, decision-making, regulations, emotional intelligence, motivation and resilience. It has been claimed that skill development is possible with the use of numeracy life skills and also literacy in a way that a wide range of inmates is involved and in a manner that is cost effective. This is a single example which shows how capable technology is in rehabilitating offenders in the future.

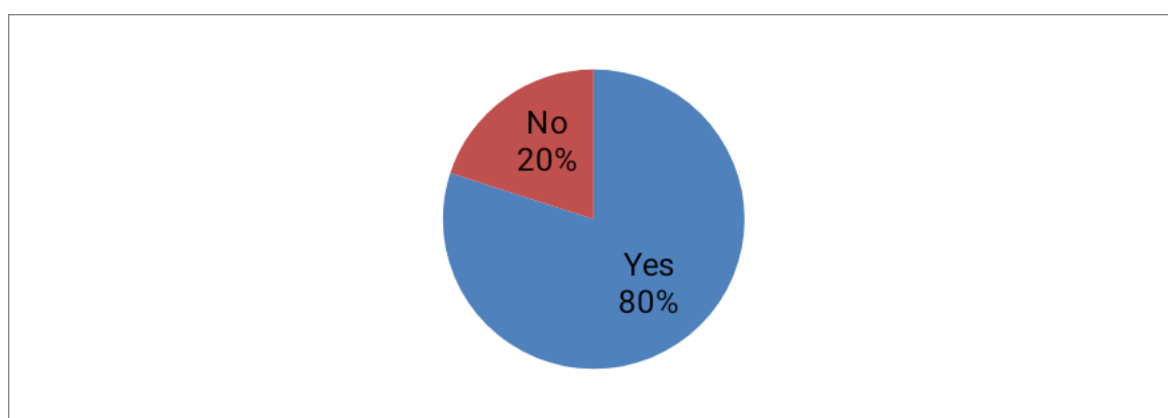
Technology has both negative and positive influences on performance of rehabilitation programs in Kenya prisons. Men generally interact with technology

⁸⁹ Pfeifer J. and Conway S. (2015). *Digital gaming and corrections: Examining the potential uses for offender rehabilitation and well-being*. International Corrections and Prisons Association (ICPA) 17th annual conference, Melbourne, 25–30 October

from an early age more due to stereotyping and the socialization aspect of science being a man's domain. Male inmates have gone high tech especially in smuggling of mobile phones in to prison, which they use to con the public, and this negatively impacts on the Departmental core function. In order to prevent that, searches are thoroughly conducted. To search is to examine carefully in order to find contraband. Prison security largely depends on thoroughness of searches carried out to detect and prevent any prohibited or dangerous articles from being smuggled into prison.⁹⁰

The study sought to determine the role of technology in rehabilitation in correctional services in Kenya. Results show that 80 percent of respondents agreed that the role of technology in rehabilitation in correctional services in Kenya is important. While, 20% were not of the opinion that the role of technology in rehabilitation in correctional facilities in Kenya is important. This implies that technology plays an important role in correctional services in Kenya.

Figure 2.5: The role of technology in rehabilitation in correctional services in Kenya.



The study also found that technology has enabled inmates to communicate with their loved ones back at home. This has highly improved the rehabilitation

⁹⁰ Brenston, M., (2011), world's part: Men, Women and Technology. Centre for media literacy

process since they feel that they can change to get back to their families. Further, ensuring that inmates are in constant contact with their families is very important in ensuring successful reintegration back into the society once they are released.

2.7 Summary of Key Findings

The study established that the role of technology in improving security in the correctional services is very crucial. This has helped in improving the safety of prisoners. The study also found that technology is very important in promoting education in the correctional services. The use of online learning systems has helped prisoners to learn. The study revealed that healthcare provision has improved in the correctional services due to technological application. The study found that prisoners are able to look for jobs using online systems. The rehabilitation in correctional services has improved because technology has made it more efficient.

CHAPTER THREE: THE CHALLENGES FACING THE USE OF TECHNOLOGY IN CORRECTIONAL SERVICES IN KENYA

3.1 Introduction

In this chapter, the study presents the challenges that are faced in the use of technology in correctional services in Kenya.

3.2 Challenges of Using of Technology in Correctional Services

In the developing world, corrections are shifting from punishment and are focusing more on rehabilitation challenges and reintegrating offenders. On the other hand, the main focus of correction officers is improving their level of efficacy and effectiveness. Most of the time, availability of resources is a challenge especially the ones needed for managing and providing quality correctional services, even when there is the will to do so⁹¹. Adding to the challenge is the fact that majority of correctional and prison systems in developing countries are yet to conform to the information age; their reliance is mostly on traditional methods that are paper driven, unreliable, resource intensive, unsecure and access to record poses a challenge. The process of providing offenders with humane and professional rehabilitation has proven to be complex and requires an approach with several phases and the need to adopt modern strategies and principles for modern management.⁹²

Many government organisations have started their digital transformation journey with the ambition to develop citizen-centric digital services. The bad news however is that many of them are still struggling with slow or partial progress in digitizing their internal processes which makes it sometimes difficult to respond

⁹¹ Nathan, J. (2013). Federal Prison Industries: Overview and Legislative History. Congressional Research Service.

⁹² O'Brien, J.A. & Marakas, G.M. 2011. Management Information Systems (10th edition). New York, NY: McGraw-Hill/Irwin

to user-expectations.⁹³

For corrections, this digital transformation path is laden with even more obstacles and frustrations, mainly inherited by the specific relation the government has with people that have been sentenced. Although recent reports on prison reform emphasize the increasing role technology is playing in criminal justice and prison systems, introducing new technologies in corrections is still a balancing act: both prison and probation services are challenged to increase efficiency (do better or different with less), focus much more on rehabilitation whilst keeping society safe⁹⁴. This context makes it very challenging for both the governmental agencies, who are struggling with the development of their digital strategies, incorporating them into business plans and hunt for the necessary resources, and technology companies, who are trying to understand the business drivers, develop innovative solutions, keeping up with new technologies and struggling with the long, expensive and complicated public tender processes.

To motivate governments on why they spend tax-payers money, they need evidence that using technology improves the way they operate and supports their mission and vision. The enormous speed by which technology is evolving does not make it easy for researchers and correctional experts to keep up, evaluate, analyse and develop evidence-based practices. This takes time and can only be achieved by intensive collaboration between different actors and different disciplines. Technology has had both negative and positive effects on the correction fields. This has made individuals operating in these fields to face dilemma on which technology to adopt, if any. Change in technology is so fast as

⁹³ Pattavina, A. (ed.). (2005). *Information Technology and the Criminal Justice System*. Thousand Oaks, California: Sage.

⁹⁴ Wright, K.N. (2014). An Assessment of the Capacity to Measure Performance among the Nation's Prison Systems. *Federal Probation*, 68(1): 51-58

compared to that of corrections and the society and therefore poses a challenge in keeping up with the transformations⁹⁵.

3.2.1 Operational Challenges

There are operational and logistical challenges that are experienced with the introduction of technology in a number of prison facilities.⁹⁶ It is important that aside from introducing relevant and reliable technology in prisons, it is also important to accompany it with trained personnel and sophisticated hardware and software. This allows the threshold for prisoners to increase, especially for those who could or could not afford it especially the ones involved in learning activities such as E-learning. This implies an increase in the gap existing between the haves and the have nots. There are a number of prisoners who would like to participate in educational training but because of financial challenges, lack of proper skills and education, they are unable to enrol.

3.2.2 Digital Divide

The issue of “digital divide” is real in the actual society and the case can be the same in prisons as the use of ICT continues to increase. Those individuals who are not competent with technology are at a risk of being socially excluded. This is the case not only for employees in prisons but also with prisoners themselves. With the use of ICT, it is very easy for individual privacy to be violated. Through the use of ICT for surveillance and tracking of prisoners, it makes the work of changing prisoners’ behaviour more leveraging. Therefore, the rights and status of prisoners become low and weak⁹⁷. There is a group of individuals who on one hand are optimistic regarding the development expected in the future regarding

⁹⁵ Suzanne, M. K. (2010). Economic Impacts of Prison Growth. Congressional Research Service.

⁹⁶ Ibid, p 39

⁹⁷ Opafunso, Z. O., & Adepoju, O. O. (2016). Prison Reforms System and Inmate S Welfare. *Arts and Social Sciences Journal, Vol. 7 (1)*, 1-6.

incorporation of ICT in prison systems. In their view, technological advancement could transform positively the entire paradigm of prisons. Aside from maintaining and supporting prison administration and ensuring availability and quality of operations, it also improves prisoners' mental and intellectual capabilities⁹⁸.

⁹⁹There are individuals who on the other hand are not in support of ICT usage in prisons. Their opinion on ways in which ICT can be applied in prison is skeptic and negative. Their opinion was that with the introduction of ICT in prisons the routine activities of prisoners will be vulnerable and will go against the most basic rights of an individual. In addition, the work of prison employees becomes more inhuman and routine. The result would be a decline in the relationship existing between prisoners, prison employees and prison administration. Increased use of ICT will result to a decline in human relations and the outcome would be that the long-established prison systems will be destroyed. This simply means that the community connections will be lost which is very important for prisoners once they have finished serving their sentence and have been released.

Nonetheless, there are several barriers inhibiting meaningful contacts that are created by prison system structures. Most of the time, people serve their sentences in prisons located far away from their homes and in areas that are inaccessible by public means of transport. A visitor can experience substantial amount of burden when offered personal visits, and this might force them to miss work, employ someone to take care of their children, and pay for travelling expenses of their loved ones¹⁰⁰. These reasons justify reasonability on the use of

⁹⁸ Penal Reform International. (2015). *Global prison trends*. London: Penal Reform International. Available at: <https://www.penalreform.org/resource/global-prison-trends-2015>

⁹⁹ Ibid, p 43

¹⁰⁰ Donnell, P. (2015). A new age of humane treatment: How technology can change prisons, eTeknix, November, 2015. Available at: <https://www.eteknix.com/a-new-age-of-humane->

ICT in prisons. Additionally, it is very crucial to ensure that ICT used in prisons is very secure. There are instances when prisoners in collaboration with prison employees try to tamper with already existing ICT systems such as the security surveillance system and E-learning facilities. To prevent such activities from happening in the future, it is important for relevant authorities and individuals competent with ICT to come up with rules, procedures, regulations, and programs both hardware and software that will be well compatible with the introduced sophisticated systems¹⁰¹.

After the introduction of relevant and reliable ICT, it is important to ensure that such sophisticated hardware and software is managed and operated by trained individuals. Huge amounts of investments should be directed towards the introduction of new technology. Most of the time, budgets set by prisons do not plan for new and unique technology, but in actual sense that is where they should invest the most¹⁰².

3.2.3 Ethical Issues

Another challenge facing the implementation of new technology relates with ethical concerns about prisoners' rights. It is important for coherent legal mechanisms to be created to make sure that basic rights for prisoners are protected; this includes their right to privacy. Does this suggest that when imprisoned, one can lose their privacy even when using the bathroom and toilet? Is it not infringement of human rights which can be applied to prisons too? Both

treatment-how-technology-can-change-prisons-2015

¹⁰¹ Burr, T. (2009). The National Offender Management Information System: Report of the Controller and Auditor General. National Audit Office. London: The Stationary Office

¹⁰² Maruna, S. & Immarigeon, R. (2004). After crime and punishment: Pathways to offender reintegration. Cullompton: Willan.

stakeholders in low and high levels should give their assurance¹⁰³.

3.2.4 Professional Knowledge and Technical Know-How

In prison facilities, the application of ICT is still new more so in developing countries. Due to the technicalities involved, there is the need for staff to understand how it can affect their responsibilities. As much as gadgets differ in terms of technical design, components and set-up they are also different in the way they are used. There are those with multiple dimensions having the ability to perform various functions like logical outcome, information manipulation etc. If the employees are not knowledgeable with the application of ICT, they cannot optimally benefit as expected¹⁰⁴.

3.2.5 Lack of Constant Power Supply

There are still some Prisons that are yet to be connected to electricity in developing countries. The government is yet to connect the entire nation with electricity. Prisons located in such areas especially those in rural areas which cannot afford to purchase power generating sets remain handicapped and may lack the ability of enjoying benefits of ICT. It is quite embarrassing that even urban Prisons are faced with the challenges of epileptic power supply¹⁰⁵.

3.2.6 Unacceptability of Technology

The relative newness of ICT in Prisons Administration poses a great problem of acceptability of the use of ICT to many 'doubting Thomas'. Okojie¹⁰⁶ supported this view that old brigade staff are unwilling to change to the ICT way of doing things but rather prefer the age- old method of doing things. According to

¹⁰³ Ibid, p 41

¹⁰⁴The Economist. (2015). Planet of the phones. Available at <https://www.economist.com/leaders/2015-planet-of-the-phones>

¹⁰⁵ Ibid, p 44

¹⁰⁶ Okojie, M.U. (2010). Information and Communication Technology (ICT) and Curriculum Innovation in Secondary Schools in Nigeria: Nigeria Journal of Curriculum Studies: 17(3), 32-53.

Correctional Technology Experts such as Steven Van “the biggest challenge of Prisons in integrating ICT in its administration is to establish proper balance in efficacy, security and rehabilitation”.

3.2.7 Illegal use of Technology

Bulman¹⁰⁷ indicated that a prisoner according to the Federal prosecutors in Maryland was accused of planning a murder using a phone and offered to pay \$2,500 for the crime to be executed. The prisoner was in Baltimore City Jail when he made the call and this could not have been possible if he did not get access to a cell phone. Based on the report of the Federal indictment, the man was being held because of murder charges and his call was to instruct the murder of the witness of the first murder.

Currently, the most common contrabands that prisons deal with on a daily basis are cell phones and their chargers. Other attempts that officers are faced with are the attempt to smuggle drugs and weapons and inmates who use ordinary materials to make weapons.

Prison wardens face a major challenge of smuggled contrabands and the worst of are mobile phones. Most prison escapes are facilitated by mobile phones which allow prisoners to communicate with their accomplices outside the prison. With the increasing number of mobile phones and their significant reduction in size and metal components it becomes more challenging to detect them using metal detectors. The most effective way of dealing with such challenges has been the use of frequency jamming.¹⁰⁸

¹⁰⁷ Bulman P. (2016). Using Technology to Make Prisons and Jails Safer, p.4. URL. <https://www.ncjrs.gov/pdffiles1/nij/225764.pdf>

¹⁰⁸ Ibid, p 47

3.3 Demographics in Correctional Services

There are several significant challenges that correctional facilities are facing. One of the challenges is with inmates' demographics; over the years they have been significant change in their demographics. Currently, the population of prisons is crowded with aged individuals and a greater percentage being women and individuals with mental illness and physical disabilities.¹⁰⁹ These changes in prison demographics strain involved agencies in service and facility delivery. Also, the population of those being supervised has increased and this results to struggle by correction agencies in the community to provide supervision and needed immediacy that will assist them in reintegrating into the society. Adding to the challenge is compounded by shifts in probation case: there are officers who in one time were dealing with less risky individuals who posed lesser threats and their criminogenic needs were few but now they have to deal with individuals with high risk levels whose threat is greater and they need more services and more supervisions. Lastly, it has proven to be a challenging task to recruit, train and retain correction officers with appropriate skills¹¹⁰.

Kenyan prisons are at more than double their capacity. Of those incarcerated, over 40% - roughly 23,000 people - stay in custody for approximately 2.5 years before their trials begin, mainly because they do not understand the law or do not have funds to hire lawyers. Prison conditions affect inmates physically, psychologically, and economically. Families lose income, forfeit education opportunities and lose caregivers when a family member is imprisoned. African Prisons Project's legal aid clinics empower inmates with legal knowledge to

¹⁰⁹ White, Rob, and Graham, Hannah. 2010. Working with Offenders: A guide to concepts and practices. New York: Willan Publishing

¹¹⁰ Wardrop, K., & Sheahan, C. (2018). The use of technology in the delivery of correctional intervention programs: A rapid review (Research Report R-423). Ottawa, Ontario: Correctional Service.

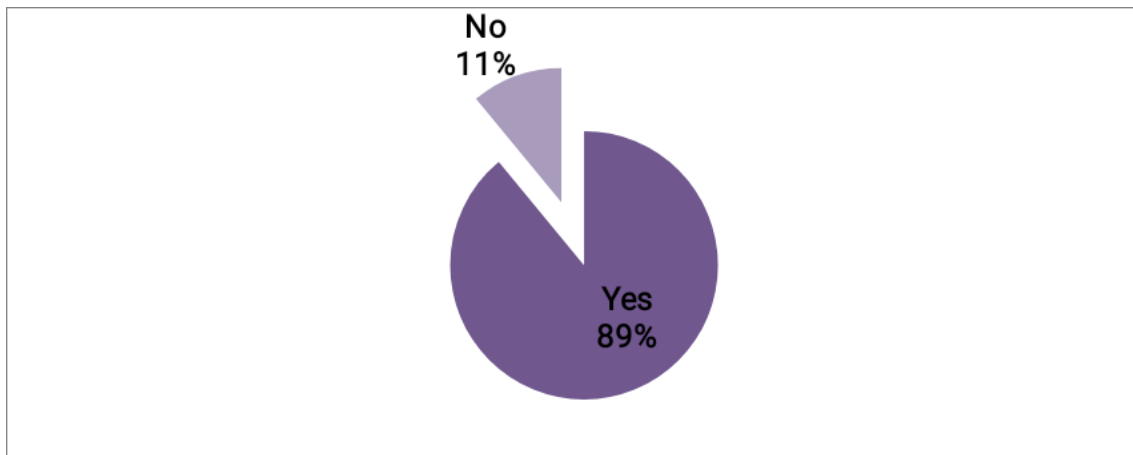
progress their cases and access justice through self-representation. These are services they could not ordinarily afford. Freedom brings back dignity to individuals, income to the families and care-givers back to their communities¹¹¹.

With the use of technology, the challenges can be partly resolved. For instance, with the use of mobile applications, officers can supervise offenders on parole or probation effectively and allow those being supervised to access programs and services with ease. Health care can be improved with the use of technology such as telemedicine and visitation opportunities can be increased using video visitation; and educational opportunities for prisoners can be increased with the use of technology.

The study sought to determine whether demographics affect the use of technology in correctional services in Kenya. Results are presented in Figure 3.1. The results established that 89% of the respondents agreed that demographics affect the use of technology in correctional services in Kenya. While 11% disagreed that the use of technology in correctional services in Kenya is affected by demographics. This is an indication that the use of technology in correctional services in Kenya is affected by demographics.

Figure 3.1: Effects of demographics on the use of technology in correctional services in Kenya.

¹¹¹ Kenya Prisons Service. (2007, 2011). Kenya Prisons Service Strategic Plan. Prisons Headquarters, Government Press, Nairobi.



3.4 Safety and security

Based on existing literature, security is the main challenge that inhibits adoption of technology in correctional institutions. When inmates are allowed to access technology especially interactive and more advanced, they will be in contact with the outside world. This therefore poses the risk of prisoners exploiting access to ICT in engaging in crime or gain access to contrabands such as pornography¹¹². That is why correctional institutions restrict or prohibit the use of ICT which includes personal computers, internet and email. Prisoners can also exploit computers and use them to develop weapons, hide contrabands, be part of clandestine communication and tamper with prison systems. Nonetheless, suggestions by researchers have been to limit the access to technology due to security concerns which exposes the public to greater risks¹¹³.

Champion and Edgar explained that so long as access to the internet in prisons is considered to be a bridge in security, the outcome could likely be more insecurity to the community since offenders will be reintegrated back to the society with

¹¹² Champion, N. & Edgar, K. (2013). *Through the gateway: How computers can transform rehabilitation*. London: Prison Reform Trust

¹¹³ Fabre, R. & Zymaris, C. (2016). *Designing secure prisoner computer systems*. Lulu.com

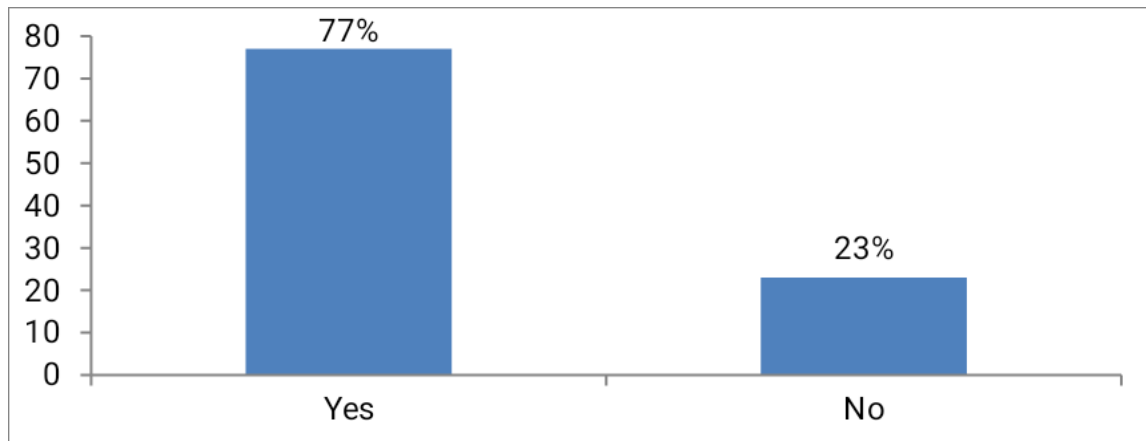
major deficits. Harrison¹¹⁴ explained that it will be more beneficial to develop ways of dealing with the challenges instead of prohibiting the use of internet completely. Based on existing literature, there are a number of ways that prisons can use to control the use of computers, internet, email and other technologies by inmates. Particularly, these institutions can restrict prisoners' access to some contents, limit technological functionality, monitor their use, and implement strict measures on their use. Justice Action¹¹⁵ explained that allowing prisoners to use ICT is beneficial in reducing inmates' misbehavior and disruptions due to the fear of rescinding access.

The study sought to determine whether there are safety and security issues in correctional services in Kenya due to the use technology. Results show that 77% of the respondents agreed that there are security issues due to the introduction of technology in prisons while 23% disagreed that there are security issues due to the introduction of technology in prisons. This is an indication that there are security issues due to the introduction of technology in prisons.

Figure 3.2: Effects of Technology in safety and security in correctional services in Kenya

¹¹⁴ Harrison, L. (2014). Prisoners and their access to the internet in the pursuit of education. *Alternative Law Journal* 39(3): 159–162

¹¹⁵ Justice Action (2011). *Computers in cells: Maintaining community ties and reducing recidivism*. Sydney: Justice Action



The study also revealed that inmates use technology in planning for escape and killings of other inmates. The technology is also used in committing cybercrimes.

3.5 Initial cost and ongoing funding

Correctional facilities face another challenge of cost which relates with installation and maintenance of new technology. In the long term, the use of technology can cut on prisons cost by enhancing effectiveness and efficiency of processes. Nonetheless, the cost of installation and funding challenges is another significant barrier. This is mainly because the population of prisons has significantly increased and therefore strain on prison services including education and this is at the expense of security requirement¹¹⁶.

Stone and Scharf¹¹⁷ suggested that correctional institutions sometimes are not willing to invest in new technology mainly because of uncertainty revolving around whether in the long run they will save on costs. It could also be challenging for correctional facilities to secure funds to buy, maintain and upgrade technology especially in this current environment where there is constant innovation in technology. Adoption of new technology also requires

¹¹⁶Desoria, V. (2001). *Living Inside Prison Walls*. Adjustment Behaviour. Collins Publishing Group, New York.

¹¹⁷ Stone, W.E. & Scharf, P. (2011). Examining the correctional technology paradox: Can correctional technologies save aggregate correctional costs? *Journal of the Institute of Justice & International Studies* 11(1): 171–184

more resources to be invested in creation of new policies and for training employees. These issues combined pose a challenge for correctional facilities in implementation and use of updated and efficient technologies. Most of the time, by the time prisons complete buying, installing, adopting and fully implementing new technologies, there are other new technologies released to the market. This causes frustration to prison employees and inmates who use old and inefficient technology as explained in triple E project e-book¹¹⁸.

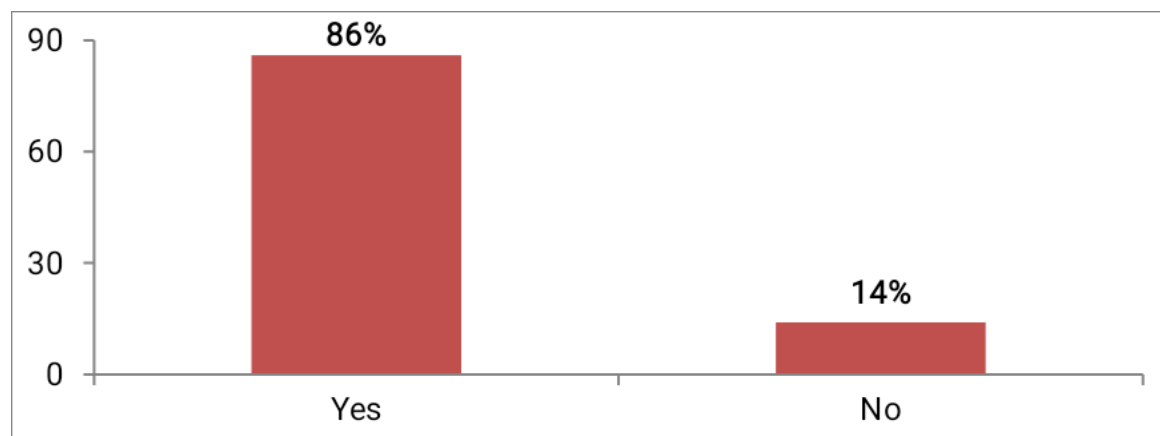
The challenge of cost and funding is resolved by having business models that provide hardware as well as installed software at a lowered cost. Using such a model also transfers the risk of hardware redundancy from the institution to the providers to the said services. Nonetheless, the initial and ongoing cost can be shifted from the government and the institution to offenders themselves and their families. In instances where the prisoners and their families are not willing to meet the cost, conflict and marginalization can arise. Less fortunate families might suffer when service providers start charging fees on some services that were free such as money transfer to benefit themselves at the expense of others. Most correctional facilities globally are shifting to the use of technology and this comes with both risks and benefits with the engagement of private service providers and therefore before selecting the model to be used, it should be considered carefully.

The study sought to determine whether the use of technology in correctional services in Kenya is affected by funding. From the results 86% of the respondents were of the opinion that the use of technology in correctional services in Kenya is affected by funding. While 14% disagreed that the use of

¹¹⁸ Tolbert, M. & Hudson, J. (2015). *Educational technology in corrections 2015*. Washington, DC: US Department of Education

technology in correctional services in Kenya is affected by funding. This implies that the use of technology in correctional services in Kenya is affected by funding.

Figure 3.3: Effects of Funding on use of correctional services in Kenya.



3.6 Public perception

Most of the time, the public conversation around punishment is the approach of being tough on crime. Therefore, correctional institutions trying to incorporate technology in improving the rehabilitation process of prisoners and reducing their boredom is seen by the public as providing them with a lenient environment or that it is offering offenders favors. For example, instances that are covered by the media highlight the licit or illicit use of technology by prisoners and they cover these instances with headlines such as “a convicted killer aged 19 years boasts of his TV, hoard snacks and play station”; “violent thug who killed a teenage boy brags of easy life on his Facebook account while still serving his sentence”¹¹⁹.

¹²⁰The families of victims and victims themselves have expressed their concerns on injustice and claimed that offenders have privileges such as internet access yet the crimes they committed are very serious such as murders.

¹¹⁹ Silvester, N. & Jones, S. (2016). Violent thug who kicked teenage schoolboy to death boasts about ‘easy life’ behind prison bars on Facebook. *Mirror* 11 Dec. <http://www.mirror.co.uk/news/uk-news/violent-thug-who-kickedteenage-9434951>

¹²⁰ Knight, V. (2015). Some observations on the digital landscape of prisons today. *Prison Service Journal* 220(3): 3–9

Access to technology by prisoners is a perception that custodial employees might not share. Reisdorf and Jewkes¹²¹ argued that during the implementation of technology, this could pose a significant challenge. Based on qualitative research conducted, implementing the use of Skype in British correctional facilities was faced by significant challenge from employees who did not allow the prisoners to access the services comfortably and fully. Additionally, implementation of such technology lowers the cost of labour which the public and custodial employees might oppose especially in times when there are high rates of unemployment in the society. Therefore, it becomes challenging for the correctional institutions to get approval from politicians and funds to deploy technological innovations especially when there is no guarantee on Return on Investment (ROI) and the public considers the technology to be unnecessary.

The most effective way through which correctional facilities can address the issue of security relating with provision of access to technology by inmates is by creating well-coordinated ICT strategies. A detailed consolidation plan to implement, evaluate and manage technology in correctional facilities can provide these departments with assurance that they will attain maximum benefits through the adoption of new technology¹²².¹²³ Using technology effectively in correctional institutions involves more than just adopting new technology. Rather, it requires the institutions to invest in the creation of sustainable culture which values application of technology in enhancing rehabilitation of prisoners and provide the time, resources, space and be committed in doing so. Based on this notion, Hopkins and Farley explained that what matters is not the technology

¹²¹ Reisdorf, B. C. & Jewkes, Y. (2016). Blocked sites: Cases of internet use in three British prisons. *Information, Communication & Society* 19(6): 777–786

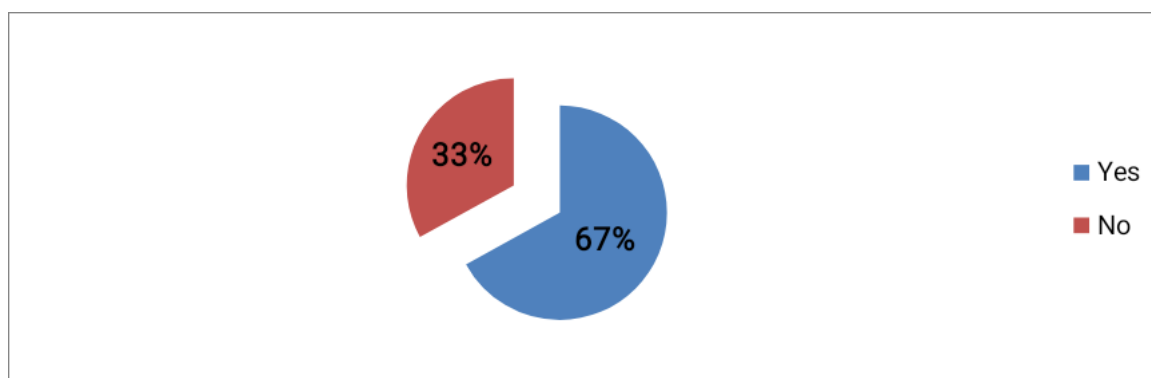
¹²² Ibid, p 52

¹²³ Hopkins, S. & Farley, H. (2015). e-Learning incarcerated: Prison education and digital inclusion. *International Journal of Humanities Education* 13(2): 37–45

itself, but rather inclusivity of what is afforded by the technology. Their suggestion was that technology is just but a tool applied in improving the relationship of prisoners, their employment opportunities once they are released and essential access to education which will enhance their reintegration into the society once they are released.

The focus of this research was to determine the impact public perception has on use of technology in correctional services in Kenya. Results in Figure 3.4 show that 67% of the respondents agreed that the use of technology in correctional services in Kenya is affected by public perception. While 33% disagreed that the use of technology in correctional services in Kenya is affected by public perception. This is an indication that the use of technology in correctional services in Kenya is affected by public perception.

Figure 3.4: Effect of public perception on use of technology in correctional service in Kenya.



3.7 Summary of Findings

The study found that correctional services in Kenya are facing challenges in technology use. Some of the challenges include ethical issues that arise due to misuse of technology, operational challenges arising from lack of skills and knowledge on use of some technology such as the use of technology to commit

crime in the correctional services in Kenya. It was also revealed that changes in demographics of inmates affect the use of technology in the correctional services. This is because correctional services staff are dealing with high risk inmates. This always requires the changes in technology to improve correctional services. It takes time for correctional services staff to adopt new technologies. The study also revealed that the use of technology in correctional services brings about safety and security issues. Further, lack of consistent funding of the technology would hinder the use of technology in the correctional facilities.

CHAPTER FOUR: USE OF TECHNOLOGY TO IMPROVE EFFICIENCY IN CORRECTIONAL SERVICES

4.1 Introduction

In this chapter, use of technology to improve efficiency in correctional services is examined.

4.2 The use of Technology in Correctional Services

As a critical sub-sector of government, corrections and prison systems throughout the world are intended to contribute to public safety and the preservation of the rule of law. These are laudable and challenging goals to meet even under optimal circumstances. However, although all correctional and prison systems share some common challenges, it is obvious that there is considerable divergence in resources available to contend with them¹²⁴. There is wide disparity in available resources for managing and providing services in correctional facilities, the infrastructure in terms of modernization and their adequacy, breadth of services and programs to address the needs of inmates, staff training and their professionalism, entrenchment of respect of basic human rights and several other variations that were established. Adding to the disparity is the fact that in developing countries most of their correctional and prison institutions are yet to conform to the information age; they still use the traditional methods which cannot be relied upon; they use paper, they are resource intensive, are insecure and accessing records is difficult¹²⁵.

Increasingly, modern correctional practice is moving towards a focus on rehabilitation and reintegration rather than only punitive warehousing of

¹²⁴ Maruna, S. & Immarigeon, R. (2004). After crime and punishment: Pathways to offender reintegration. Cullompton: Willan.

¹²⁵ Lupton, D. (2015). Digital sociology. New York: Routledge.

offenders. Without technology-based tools to monitor and track the characteristics of offender populations, the assessment of their risk and needs, outcomes of interventions, and other critical offender management issues, this renewed focus on public safety through effective reintegration will not be easily realized¹²⁶. Correctional and prison systems that wish to become up-to-date and adopt modern principles of practice will need to embrace the use of technology to meet their objectives. In the developed world, cutting-edge technology is increasingly being applied to improve prison conditions and service delivery to offenders in a variety of ways¹²⁷. As well, the ability to gather, store and retrieve a range of information about offenders through application of automated information systems has now become commonplace.

4.2.1 Use of Technology by Administration in Correctional Services

The entire prison system is sensitive in areas of information, administrative, legal and financial areas. Prison administrators being the leaders of the correctional institution get their power from knowing what is transpiring within the institution in order to facilitate their urgent reaction to the problem and also prevent the problem from happening. Over the recent years, technology has brought about significant change. Through technology, prison management can share information with relevant organizations in real-time using e-mails and therefore assists in optimizing the available resources¹²⁸. Technological advancements in areas of information sharing has facilitated quick sharing and access to information by prison units. Current structure of prison administration is

¹²⁶ Pattavina, A. (ed.). (2005). Information technology and the criminal justice system. Thousand Oaks, California: Sage.

¹²⁷ Donnell, P. (2015). A new age of humane treatment: How technology can change prisons, eTeknix, November, 2015. Available at: <http://www.eteknix.com/a-new-age-of-humane-treatment-2015>

¹²⁸ Schmallegger, F., & Smykla O.J. (2010). Corrections in the 21st century, Glencoe/McGraw-Hill, (.186-18).

characterised by accurate, timely and relevant sharing of information with both employees and management of the prison and this is a crucial aspect. Globally, the following are some of the technologies that are applied in correctional facilities.

Thoughts and ideas are shared with administration of correctional facilities through video conferencing. In the past, there are meetings that were expensive because it required the delegates to travel for long distances but now the meetings can be held at the comfort of one's office or use of teleconferencing sites. Additionally, technologies on video calls and satellite TV have improved on distance communications by management of correctional institutions¹²⁹. Other technological solution is the use of mapping tools such as the electronic bracelet. This has enabled prison management to track offenders, their medical records/state, travel patterns; identifying daily routine of an offender; escape threats and manage gangs. In regard to collecting and storing data as well as their processing systems, technology has allowed correctional institutions to collaborate with the government and therefore reduce their dependency level of head-on firms. Different systems for managing information exist and they suit different scenarios and are best suited for different institutions/departments for instance the detention centres for pre-trial, highly secure prisons, and regular prisons.¹³⁰ This suggests that the decision-making process and setting up of agendas would be more productive and supple. In everyday management of prison administration, it is very important to ensure that software, internet, intranet and computers are secure.

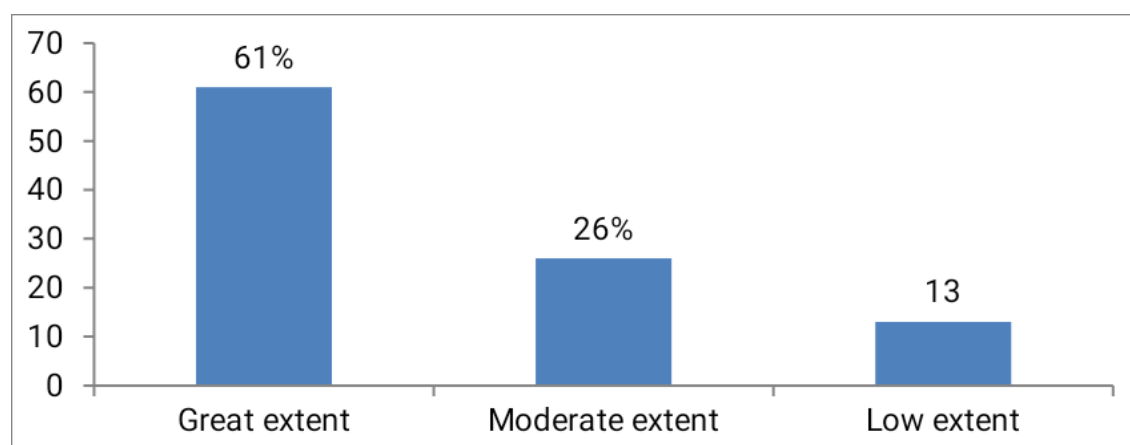
The focus of this research was to establish the level to which use of technology

¹²⁹ Ibid, p 59

¹³⁰ Mannering, D. W. (2012). Future role of the prison officer. *Prison Service Journal*, (200), 31–32.

by administration has improved efficiency in the correctional services in Kenya. From the results in Figure 4.1, 61 percent of the respondents were of the opinion that use of technology by administration has improved efficiency in the correctional services in Kenya to a great extent, 26 percent opinion was that use of technology by administration has improved efficiency in the correctional services in Kenya to a moderate extent and 13% to low extent. This implies that the use of technology by administration has improved efficiency in the correctional services in Kenya to a great extent.

Figure 4.1: Extent to which use of technology by administration has improved efficiency in the correctional services in Kenya



4.2.2 Use of Technology by Staff in Correctional Services

Introduction of advanced technology in correctional institutions has reduced costs and enhanced the level of operational efficiency. Main concern of prisons is with the security of its officers and this is by adopting modern security systems. The main source of power in prisons is information. In order to enhance effectiveness in management of prisons, it is important to ensure that information is controlled at all levels. Despite the challenges relating to prison environment where inmates have the tendency of withholding information, the management of prisons should ensure that they are well informed of what is

going on at all times¹³¹.

Prison security can be significantly enhanced through the adoption of new advanced technology. Prison staff face challenges every day and this could affect their life and wellbeing; this is mainly because of the unique state in prisons. The persistent challenge of safety and security can be resolved through adoption of technological solutions in advanced prison systems. Some of the measures are physical security and it involves the use of X-ray machines, metal detectors and wands. There are also systems that detect explosives and visitors are required to enter using biometric systems to make sure that prisoners do not pose as visitors and manage to escape¹³².

Most of the time, medical employees in prisons make use of telemedicine. Through the use of telemedicine, consulting is made possible through the use of video conferencing via equipment such as medical video cameras and therefore physicians can consult with medical personnel. The health care in prisons can therefore improve and healthcare cost reduces, and also enhance the efficiency in work performed by medical employees in prisons. When a prisoner is taken to an outside facility for medical attention it poses a great risk to the society, prison staff and also gives the prisoner an opportunity to escape¹³³.

Global Positioning System (GPS) is a newly developed feature for prison systems. Using this feature, it warns on those prisoners who are about to get out of the prison facility and with the use of computers it is possible to establish their specific locations an any given time. Prison staff can see different locations of

¹³¹ Walmsley, A. (2015). Physical Readiness Assessment and staff resilience. Practice: *The New Zealand Corrections Journal*, 3(1), 1–5.

¹³² Ibid, p 57

¹³³ Tenibiaje, D. J. (2012). Literacy, Information and Communication Technology as Tools for Empowerment of Inmates, *European Journal of Educational Research*, 1, No. 2 (ISSN 2165-8714), pp.117-126.

the prison at the same time with the use of surveillance technology. Also, there are personal alarms that are computerized and track locations and allow prison officers to respond to any distress and therefore send officers close to the site to attend to the emergency¹³⁴.

Furthermore, prison employees depend on the new technology in tracing released prisoners and current ones. Another technology that is applied in tracking those individuals whom prisoners communicate with, is the speaker ID technology and it also assists in keeping an eye on any plans such as escape plans, smuggling of illegal stuff and gang activities. It is expected that very soon monitoring of prisoners will even be more efficient with the use of a smart card which is a plastic card having a computer chip with the ability to store all kinds of information about an individual prisoner which includes their medical history and the food they use. Through the use of ICT, prison employees have the ability of operating cell doors remotely in unison and independently and can also control flushing of toilets remotely.

In addition, for a long time, prisons have been using CCTVs to facilitate remote viewing of different parts of the prison at the same time. In prison, there is a lot of violence witnessed and negative behavior is common and therefore, it is possible that CCTVs help in managing this bad behavior. Prisoners are the ones engaging in such activities and the result is negative; they include physical harm such as assaults between prisoners themselves, prisoners and officers, sexual aggression and the worst is murder. There are also psychological effects such as threats and verbal abuse; or economic risks such as robbery, theft and extortion.

¹³⁴ Porporino, F. (2010). Bringing sense & sensitivity to Corrections: From programs to 'fix' offenders to services to support desistance. In J. Brayford, F. Cowe & J. Deering. (Eds). What else works? Creative work with offenders. London: Willan

CCTV also acts as a general tool for monitoring in prisons and helps in detecting crime and lack of order and enhances internal control.

In order to satisfy prison officers' communication requirement, they use the PMR (professional mobile radio).¹³⁵ Priority and group management are also facilitated by the use of PMR. Transmission of alarm information is also made possible through the use of smart terminals that facilitate the use of radio communication infrastructure.

Prison staff equipped with PMR terminals have access to the following functionalities: radio communications, hidden alarm button for alarm and emergency backup calls (gradually replacing wall-mounted alarm buttons), tamper detector, lone worker protection terminals, which are worn in the vertical position, and an alarm is generated if they are tilted to the horizontal, i.e. in the event of a member of prison staff falling ill or being attacked, integrated GPS and patrol management¹³⁶. Transmitting voice, alarms and data to PMR make it possible for staff to locate fast and effectively manage situations and also allow them to characterize and verify emergencies. This allows the incident to be managed effectively by sending the appropriate backup. Aside from the benefits brought about by technology, there are also disadvantages on the everyday activities by prison employees such as reduced movements, diminished task routines and versatile communication between employees and prisoners. ICT used with software and hardware such as computers and programs form a complicated network and makes it possible to process information like storing, manipulation, management, displaying, interchanging and transmitting data. The

¹³⁵ Kimmet, E. (2013): Through the gateway: How Computers Can Transform Rehabilitation, Nina Champion, p.6

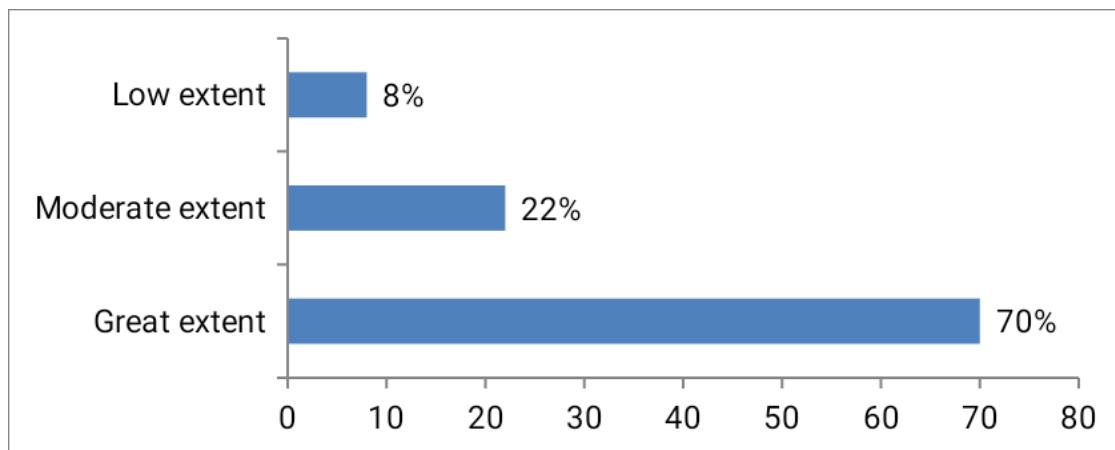
¹³⁶ Bulman, P. (2016) Using Technology to Make Prisons and Jails Safer, p.4. URL.: <https://www.ncjrs.gov/pdffiles1/nij/225764.pdf>

qualification of prison employees can be enhanced through e-learning. With the application of e-learning systems for personal gains help prison staff to realise the benefits that come with ICT literacy. ¹³⁷Through e-learning, employees are provided with tools that necessitates continuous qualification and also increases knowledge on the benefits brought about by e-learning. Moreover, correctional facilities have started using videoconferencing for visitation and interrogation. Travel cost has been significantly reduced for prosecutors and officials of criminal justice because they can use videoconferencing with offenders and prisoners; it also allows the victims to avoid long standing in queues.

This study's focus was on determining the level to which the use of technology by staff has improved efficiency in the correctional services in Kenya. The presentation of the results in Figure 4.2 show that 70% respondents agreed that the use of technology by staff has improved efficiency in the correctional services in Kenya greatly. Twenty two percent were of the opinion that the use of technology by staff has improved efficiency in the correctional services in Kenya moderately while 8% to a low extent. This is an indication that the use of technology by staff has improved efficiency in the correctional services in Kenya to a great extent.

Figure 4.2: The extent to which the use of technology by Staff has improved efficiency in the correctional services in Kenya

¹³⁷ Ibid, p 62



4.5 Use of Technology by inmates in Correctional Services

The use of ICT in correctional facilities benefits the institution, offenders and the society. There are several benefits that come with the use of monitoring equipment such as electronic bracelets which includes the increase in tax revenue, reduced costs of welfare and also the need for more prisons reduces. Another auxiliary benefit is that prisoners are able to maintain ties with their families and the community at large.¹³⁸

Technology plays an important role in programs to provide offenders with education. Through their participation in such programs, inmates get basic digital literacy (E-learning). Such programs could help in the rehabilitation of prisoners and increase the possibility of them having more contact with their families. Through ICT programs, the opportunities that inmates will be empowered with knowledge and opportunities increases¹³⁹.

It is in human nature for them to want connection with each other. This can be very important especially for those individuals imprisoned in prisons. The pain of being imprisoned can be alleviated by having them regularly contacting family,

¹³⁸ Rumberger, R. W. (2011). Dropping out. Harvard University Press.

¹³⁹ Meurisse, H. (2016). The use of modern technologies and the impact on prison life, Director General EPI, Belgium. URL.: <https://www.coe.int/t/DGHL/.../PRISONS/...20.../Hans%20MEURISSE%20presentation.pdf>

supporters and friends. The processes mentioned above have the ability of improving chances of succeeding. In order to enhance sustainability of such activities, management of prisons is trying to develop new ways. For example, the introduction of video visitation allows prisoners to video call with their family and friends through personal computer. Through video visitations, prisoners can not only see but also hear the voices of their loved ones;¹⁴⁰ this has an emotional effect.

Imprisoning an individual entails depriving them of their freedom. In addition to the aspect of security, prisons also have the responsibility of reintegrating convicts into the society once they have served their sentences. Just like any other citizen, a prisoner according to international recommendations and conventions, has the right to education. Through education a prisoner is able to develop character and personality that defines them. The role of education in the reintegration process is very crucial.

Globally, all prisons apply prison education. It has been established that prison education is effective in lowering criminal behavior among some prisoners. Not all criminals will change because of being imprisoned but still it is important in preventing crime. Based on findings of a meta-analysis, there are basic principles that tend to be followed by any correctional treatment. Any form of treatment or education provided in prisons will be effective based on their quality. Success levels of the programs mainly depend on the general atmosphere of the prison, level of cooperation and free will. Prisons form part of the society and prisoners are just like any other human beings and when they commit a crime they have to be punished. The difference is that the form of punishment applied against them

¹⁴⁰ Tolbert, M. & Hudson, J. (2015). *Educational technology in corrections 2015*. Washington, DC: US Department of Education

is more vital¹⁴¹. The use of ICT in the society has advanced and therefore, it is also important to provide prisoners with the opportunity to use ICT in training and also education (E-learning).

By providing prisoners with e-learning, they can gain access to both online and offline materials from various schools and vocational training institutions. Additionally, prisoners can obtain their degrees from central examination facilities through secure internet channels. Through e-learning prisoners are provided with huge opportunities for enhancing prison education by widening their qualification opportunities, improve training and education quality and motivate other inmates especially the new ones. Through e-learning, inmates are provided with opportunities to study general and vocational education and also build their digital literacy¹⁴².

Digital skills are a necessity in current society both in work environment and in daily lives and therefore equipping inmates with digital literacy makes their reintegration into the society more successful. Experts in this field have insisted on the importance of educating the general public on the reasons why ICT is introduced in prisons, not for leisure purposes of prisoners but rather to ensure that inmates are provided with up-to-date qualifications which in turn enhances their reintegration into the society, the possibility of them securing jobs and also lower costs which results from re-offenders.¹⁴³.

The study sought to determine whether the use of technology by inmates has improved efficiency in the correctional services in Kenya as shown in Figure 4.3.

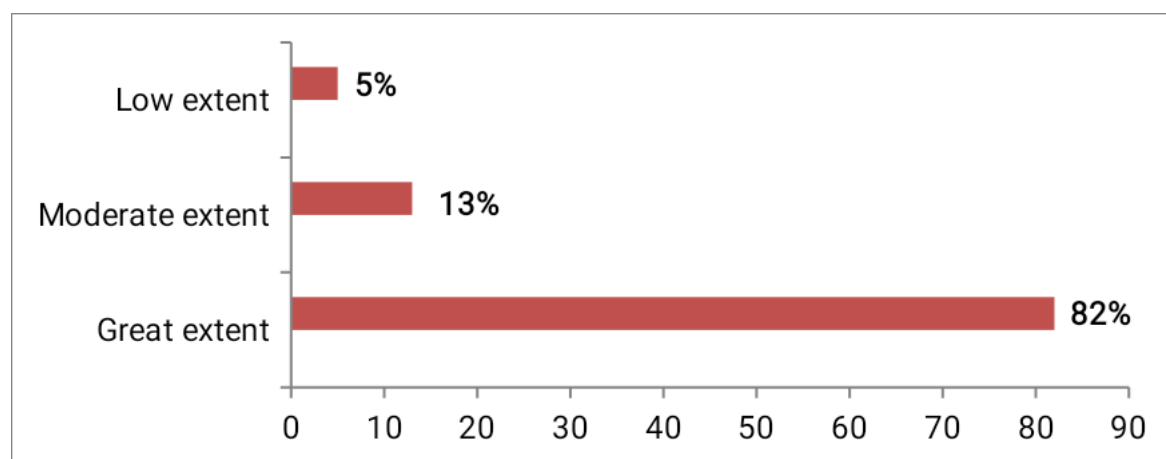
¹⁴¹ Kimmett, E. (2016). Through the gateway: How Computers Can Transform Rehabilitation, Nina Champion, p.6. (2013) URL.: <https://www.prisonreformtrust.org.uk/>

¹⁴² Sellers, M.P. (2016). Online learning and recidivism rates. *International Journal of Leadership in Education* 19(5): 632–636

¹⁴³ Ibid, p 64

The results show that 82% of the respondents were of the opinion that use of technology by inmates has improved efficiency in the correctional services in Kenya to a great extent. Thirteen percent opinion was that use of technology by inmates has improved efficiency in the correctional services in Kenya to a moderate extent while 5% opinion was that use of technology by inmates has improved efficiency in the correctional services in Kenya to a low extent. This is an indication that use of technology by inmates has improved efficiency in the correctional services in Kenya to a great extent.

Figure 4.3: The use of technology by inmates to improve efficiency in the correctional services in Kenya



4.3 Automated and Integrated Information System

¹⁴⁴The manual procedures of a nation's correctional system are complex and there is the need to automate the huge amount of highly viable documents. The Penal Reform International¹⁴⁵ posited that effective case management systems were needed to ensure that the suspects are timely produced in courts and to collate information to be applied in identifying risk levels and needs among the inmates. The overcrowding problems in prisons cannot be solved by expanding

¹⁴⁴ Becker, G. (2001). Criminal and Punishment an Economic Approach. University of Columbia, USA.

¹⁴⁵ Miller, W. & Stephen, R. (2002). Motivational activities. Preparing People to Change, Guilford Publication, New Mexico

the infrastructure, but rather via innovative solutions such as databases that are connected electronically across various correctional facilities to monitor the qualifications of offenders, enable fast as well as timely release of inmates and track the aging cases that require prompt and immediate actions by the courts¹⁴⁶. For example, the Indian government was working with the National Informatics Centre to develop software for tracking pre-trial detainees through the system and ensure that they do not take longer in prison than they should.

Correctional institutions have also adopted the offender management information systems. In the modern society, it is indisputable that a comprehensive and well-designed OMIS is the way forward in managing services in correctional institutions and prisons. These systems allow prisons to transform information into knowledge and also bring about several advantages:

- Reducing data redundancy and inconsistency and increasing the potential breadth of 'corrections relevant' data collection; Increasing accuracy as automatic checks can be programmed into the system; Minimizing the possibility of data loss since all the information on offenders can be stored on a central server where there is a regular 'backup' schedule and disaster recovery mechanism in place;
- Allows easy searching for any recorded information on an offender. The user can instantly search for the offender with their name, offender number, biometric information etc. This allows, for example, for much quicker response time in dealing with critical incidents or information requests at the regional or Head Office level rather than constantly barraging i

¹⁴⁶ Ibid, p. 68

nstitutions to provide information;

- Ensuring that controlled and restricted access is easy to manage and monitor; Allowing for regular and quick production of automated counts and other daily, monthly or quarterly monitoring reports. Ease of creating 'report summaries' in many ways is perhaps one of the most important aspects of such a system. Critical reporting summaries (e.g., overcrowding figures by institution) can be generated easily and these computer generated reports can be checked for suspicious instances of inaccuracy. Ease of access to this information (e.g., distribution of offenders across institutions) can also translate into more effective systems level management.
- Be programmed to provide automated alerts for example of offender movement or incidents they are involved in. Moreover, the information system can alert automatically if the offender may be required for a court appearance, medical appointment, family visit, release or transfer, thereby ensuring that both the offender's needs and rights are respected;
- Assisting in managing the offender's progress throughout their sentence and after release. For example, the educational or vocational programmes the offender is involved in can be tracked. The 'reintegration roadmap' or sentence journey the offender may have followed can be outlined and this in turn can significantly assist in making appropriate decisions about the offender.
- Finally modern offender management system can give senior corrections officials access to critical information on offenders at any time, in any place, and not just in their office, but wherever they may find themselves (

through retrieval of information with various Smart Devices)¹⁴⁷.

Though it may be true that political support and an adequate information technology budget are required, there are ways to realize cost efficiencies when development and implementation of such a system is managed mostly in house. The advantages of such a system, even for developing jurisdictions that have a serious scarcity of resources, are immeasurable. It should be seen as an investment and as a way to actually save money in the longer term. It should also be seen as a very practical way to better respect the human rights and dignity of both offenders and staff members¹⁴⁸.

For offenders, it can help ensure, for example, that they are more effectively managed in less overcrowded institutions, that their health conditions are more closely monitored, their court appointments are not missed and their release occurs when it should. For staff members, an effective offender management information system allows them to use accurate information on a daily basis in better managing their offender caseloads. Fundamentally, better and easier access to information allows correction professionalism to mature and grow¹⁴⁹.

The Offender Management Information System (OMIS) is an electronic system for managing data and allows corrections officials to store and retrieve critical offender details from admission to release electronically. Because it has been designed in modular format that allows easy customization it provides solutions that are affordable in addressing the needs for information for correctional institution systems and prisons in any nation especially developing. This modern

¹⁴⁷ Human Rights Watch . World Report. New York: Human Rights Watch; 2012

¹⁴⁸ Charnes, A, Cooper W, Rhodes E. (2013). Measuring the efficiency of decision-making units. *Eur J Oper Res.* 2:429–444

¹⁴⁹ Butler, T, Johnson, W. (2010). Efficiency evaluation of Michigan prisons using data envelopment analysis. *Crim Justice Rev.* 22:1–15.

and automated approach to offender information management has some obvious advantages: It is simple to use, tailor-made and comprehensive. The modular web-based design allows the permitted users to access the system from any network-attached workstation or other smart device provided the user was given access. It allows for effective, accurate and instant searching and reporting of information on either individual offenders or general offender population characteristics (e.g., at the institutional, regional or national level). It includes strict access control mechanisms. The system covers all aspects of offender management, from intake and release to daily management and community re-entry. It can serve as a communication point with other Criminal Justice partners (e.g. Police, Courts)¹⁵⁰.

In California, there is a facility that received an offender and they were not aware that he was a very dangerous individual. Offender's information had been provided in his file but the file was located in a different facility and therefore the officers in the facility did not have the proper measures to secure the offender. The result was that a warden was attacked by the offender who eventually killed him. If there was real-time sharing of information, the officers in the facility would have received the information and therefore provide the needed security to prevent any attack from happening while around him. Real time information about offenders would be available if the institutions had automated systems for managing offenders. The record would provide information on probable security risks and therefore enhance the safety of officers.

Such systems have high chances of enhancing security within the institutions, the technology would be more effective if the individuals using them were also

¹⁵⁰ Cowper, D.G. (Chair). (2012). *A Criminal Justice System for the 21st Century*. Retrieved from <http://www.ag.gov.bc.ca/public/justice-reform/CowperFinalReport.pdf>

efficient and good. For instance, having updated information in prison systems depends on how timely and correctly the officers input data to the system. It is important that the relevant agencies emphasize on regular maintenance of the information system¹⁵¹.

In addition, the correctional officers have a radio frequency identification (RFID) technology that applies the use of tags which are small transponders that helps in tracking movements of offenders. There are a number of objects that the RFID tags can be incorporated in or attached to. In every tag, there is an integrated circuit and an antenna for handling radio signals and they are effective within a range of RFID sensor readers that helps in tracking movements. For instance, there are a number of correctional facilities that have applied the use such systems in tracking offenders' movements and whenever there is a huge concentration of people, it alerts officers. It is possible for information on movement to be stored in computers and could help in investigating the people who were in a particular place at a particular time¹⁵².

4.4 Electronic Monitoring

The UN Office on Drugs and Crime noted that electronic monitoring is a new technique of keeping track and supervising those who have been released, but awaiting trial, as a way of enforcing a number of sentences that are executed in the community, and early release. Electronic monitoring was first developed in the United States in the 1980s to keep track of suspects and offenders, and has since become predominantly used in high-income economies.

Among the ways in which it is used include: a pre-release measure for the

¹⁵¹ Bayer, P., & Pozen, D. (2005). The effectiveness of juvenile correctional facilities: public versus private management. *Journal of Law and Economics*,48(2), 549-589.

¹⁵² Beck, A. R. (2001). Recidivism: a fruit salad concept in the criminal justice world. Kansas City, MO: Justice Concepts, Inc.

imprisoned, during pre-trial phase, as a condition for executing or suspending a prison sentence, in combination with other probation interventions, monitoring the execution of a criminal sanction, an intensive guidance and supervision measure for certain offenders after release, monitoring internal movement of inmates, and a means of protecting certain crime victims from suspects or offenders¹⁵³.

4.5 Tracking Systems

Correctional facilities can track officers. Some facilities have equipped officers with a monitoring device that detects if the person falls likely an outcome of being attacked. Officers who are attacked are often unable to request help immediately or relay their exact location. The system can handle both tasks, notifying other officers who can come to the rescue.

While tracking systems could improve safety and efficiency, Wallace noted that they are expensive. And it's not always the cost of the technology itself that is expensive. The inmate barcoded bracelet tracking system, for example, is expensive because it requires the building to be retrofitted with necessary cabling. Due to the thick walls of most prisons, many facilities cannot use WiFi and must instead run cabling throughout the facility.

4.6 Summary of Findings

The study established that correctional services in Kenya have adopted different technologies to improve the efficiency in the correctional services. Such technologies include the use of CCTV to monitor the activities of the inmates and the use of video and audio technology to communicate with the inmates. The study also revealed that the use of technology by administration has improved

¹⁵³ Penal Reform International. (2015). *Global prison trends*. London: Penal Reform International.

efficiency in the correctional services in Kenya greatly. The use of technology by staff has improved efficiency in the correctional services in Kenya to a great extent and the use of technology by inmates has improved efficiency in the correctional services in Kenya to a great extent. For example, since the outbreak of the corona virus pandemic, departmental meetings for senior officers and court sessions have been done virtually through the use of ICT and mobile technologies. Prisoners have had their cases handled through video conferences without moving out of prisons thus, reducing possibility of contracting and spreading the corona virus.

CHAPTER FIVE

FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter highlights the summary of the study results conclusions and recommendations. It provides a summary of the findings on the impact of technology on the efficiency of correctional services in Africa, with focus on Kenya. The conclusions and recommendations from the findings are also provided.

5.1 Summary of Findings

In relation to *objective one* which was to establish the role of technology in correctional services in Kenya, the study revealed that technology plays an important role in correctional services in Kenya. It helps in improving the security in the correctional services. This is as shown by 74 percent of respondents who agreed that technology is very important in improving security in the correctional

services in Kenya. Technology such as the use of CCTV which is common in Kenya helps to keep track of prisoners throughout. This helps in taking action immediately any problem is detected.

The study also revealed that technology has helped in educational activities in the correctional services in Kenya. 82 percent of respondents agreed that use of technology in education plays an important role in the correctional services. The use of technology has helped to equip the inmates with information technology. They would be able to use computers in their businesses and also in other areas once they get out of prison. The study established that the use of technology has improved provision of healthcare in the correctional services. This is as shown by 67 percent of the respondents who agreed that technology has helped in improving provision of healthcare in correctional services in Kenya.

The study found that technology is important in employment programs in correctional services. Fifty nine percent of the respondents disagreed that use of technology enables inmates to secure employment after serving their term in correctional services in Kenya. The study also revealed that 80 percent of respondents were of the opinion that technology plays an important role in rehabilitation in correctional services in Kenya. Technology has improved rehabilitation activities in correctional services in that inmates are able to get in touch with family which goes a long way in helping them integrate back and rebuild their lives after their release.

The *second objective* was to determine the the challenges facing the use of technology in correctional services in Kenya. The study found that correctional services in Kenya face challenges in the usage of technology. These are ethical issues that arise due to misuse of technology, operational challenges due to lack

of knowledge of how some technologies are used and illegal use of technology such as the use of technology to commit crime in the correctional services in Kenya.

The study also found that demographics affect the use of technology in correctional services in Kenya represented by 89% who agreed. The challenges of demographics are that there are always changes in the needs of inmates so new technologies need to be adopted from time to time. This requires staff to be trained regularly which is a challenge. Furthermore, majority of the respondents as shown by 77 percent agreed that there are security issues due to the introduction of technology in prisons. This is because inmates may use technology for the wrong purposes such as to commit suicide or also escape. From the findings 86% of the respondents were of the opinion that funding affects the use technology in correctional services in Kenya. This depicts that funding affects the use technology in correctional services in Kenya. Failure of the government to support technology development in correctional services in Kenya has an adverse effect to the correctional services. This is because the functionality of the correctional services is dependent on government support.

The study also sought to determine the use of technology to improve efficiency in correctional services. The study established that 61 percent of the respondents were of the opinion that use of technology by administration has improved efficiency in the correctional services. This is because the administration is able to use technology in monitoring all the activities in the correctional services. Further, 70 percent of the respondents agreed that the use of technology by staff has improved efficiency in the correctional services in Kenya to a great extent. This is because the correctional services staff are able to

track all the activities of the inmates and take corrective measures in case of any problem. The results show that 82% of the respondents were of the opinion that use of technology by inmates has improved efficiency in the correctional services in Kenya to a great extent. This is because technology has helped them to gain computer knowledge which is helpful once they are released.

5.2 Conclusion

The first goal of the study was to establish the role of technology in correctional services in Kenya. The study found that technology in the Kenyan correctional services played a vital role in improving security in the facilities. The study also revealed that technology in the correctional services in Kenya has helped in enhancing provision of education in the facilities. The study established that health care provision in Kenyan correctional services has improved due to the use of medical technologies. Furthermore, technology plays a significant role in the employment of inmates once they are released from the facilities. The study also revealed that technology plays a vital role in the rehabilitation activities in the correctional facilities. The study concludes that technology plays a significant role in correctional services in Kenya.

The second objective of the study was to examine the challenges facing the use of technology in correctional services in Kenya. The study established that demographics have a significant effect in the use of technology in correctional services. The study also revealed that technology use affects security in the correctional facilities. The study also found that initial cost and on-going funding affects the implementation of technology in the correctional facilities. The study established that public perception may hinder the use of technology in the correctional facilities. The study concludes that there are challenges in the use of

technology in correctional services in Kenya.

The third objective of the study was to find out how technology can be utilized to improve efficiency in Kenyan Correctional services. The study found that technology plays a significant role in improving efficiency in the Kenyan Correctional services. The study found that use of technology by the administration has improved efficiency in the correctional services in Kenya to a great extent. It further found that the use of technology by staff has improved efficiency in the correctional services in Kenya to a great extent. The study also revealed that the use of technology by inmates has improved efficiency in the correctional services in Kenya significantly. From the findings the study concludes that technology has a significant role in improving efficiency in Kenyan Correctional services.

5.3 Recommendations

The study recommends that there is need to support technology in the correctional facilities in Kenya. This is because technology has proved to play an important role in Correctional services. Strategies should be put in place to ensure proper use of technology in the facilities. This will improve service delivery in the correctional facilities as indicated by use of mobile technologies to manage court cases and staff meetings as a result of the outbreak of the corona virus pandemic.

The study recommends that proper measures should be put in place to mitigate the challenges that come as a result of use of technology in the correctional facilities. The staff in the correctional facilities should be trained on how to tackle the problems that arise due to the use of technology. This minimizes the problems that come as a result of use of technology.

The study recommends that the government should support the implementation of technology in the correctional services. This can be done by training staff and inmates on technology use. This will promote the effective use of technology in correctional services in Kenya.

5.4 Area for further Research

This study sought to establish the impact of technology on the efficiency of correctional services in Africa, with special reference to Kenya. The study recommends that another study should be done to critically analyse the application of technology in correctional services in Kenya. There is need for other studies to determine ways and means to improve technology use in correctional services in Kenya.

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APPENDICES

Appendix I: Introductory Letter

Dixon Mwakazi

Dear Respondent,

Re: Data Collection

My name is Dixon Mwakazi, a Master of Arts Degree Student at the University of Nairobi. I am conducting a study about **'THE IMPACT OF TECHNOLOGY ON THE EFFICIENCY OF CORRECTIONAL SERVICES IN AFRICA: A CASE STUDY OF KENYA.'** You have been requested to participate in the study. I kindly request you to fill in the questionnaire on the provided spaces. Your honesty will be highly appreciated.

Thank you for your cooperation,

Dixon Mwakazi

Appendix II: Questionnaire

1. Do demographics affect the use of technology in correctional services in Kenya?

Yes () No ()

2. Does technology in safety and security affect correctional services in Kenya?

Yes () No ()

3. Does funding affect the use of correctional services in Kenya?

Yes () No ()

4. Does public perception affect the use of technology in correctional service in Kenya?

Yes () No ()

5. To what extent has the use of technology by administration improved efficiency in the correctional services in Kenya?

Great extent ()

Moderate extent ()

Low extent ()

6. To what extent does the use of technology by staff improved efficiency in the correctional services in Kenya

Great extent ()

Moderate extent ()

Low extent ()

7. To what extent does the use of technology by inmates improve efficiency in the correctional services in Kenya?

Great extent ()

Moderate extent ()

Low extent ()

Appendix III: Interview Schedule

- i. What is the role of technology in correctional services in Kenya?
- ii. What challenges are faced in the use of technology in correctional services in Kenya?
- iii. How can technology be utilized to improve efficiency in Kenyan Correctional services?
- iv. What types of technologies have been adopted in correctional services in Kenya?