



**Adoption of technology by public service employees: Case of
parolee electronic monitoring system in South Africa**

By: Sydwell Mnoneleli Nikani

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Technology: in Information Technology in the Faculty of Informatics & Design
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Supervisor: Prof. Ephias Ruhode

Cape Town Campus

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DECLARATION

I, Sydwell Mnoneleli Nikani, affirm that the content of this thesis represent my own unassisted work, and that the thesis has not been submitted for academic examination towards a qualification. Moreover, all the sources I have used or quoted have been recognised by means of reference

Signed

Date

ABSTRACT

The DCS invested in the ICT solution to drive their Enterprise Architectural strategic and objective goals. Government departments uses ICT on their day to day business activities and to pursue for competitive progression compare to other parts of the world. The challenges are entirely depending on the user adoption of new technology. Other challenges that might delay the progress in government department would be the financial constraints and the socio inequality among our community in the developing countries.

Government has a growth in e-government ICT's infrastructure used in everyday activities and online functionality. These emerge from private entities that the government does business with, to force them to move away from manual function to electronic function and processes.

Electronic monitoring system has been there in some parts of the world. Hence the South African government has opt to make use of this tool as it has been have a success results in some parts of the world. Even though there are some challenge the department has decided to implement EM system for monitoring of parolees.

This study explores the factors that influence the adoption of electronic monitoring systems of parolees in the Department of Correctional Services (DCS) in South Africa, which will assist the DCS to monitor parolees effectively under budgetary constraints. Also to overcome the challenges of overcrowding, saving more cost of building more new facilities.

Keywords: Electronic monitoring systems, Parolees, e-government, UTAUT, DCS participants, monitoring official, offenders.

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I would also want to thank the following people who contributed immensely to my successful completion of this thesis.

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- To my Christian community for their constant prayers.
- To my daughter Milani Kazimla Nikani for being my love and joy.
- To my late brother Mr. Luyanda Sydney Nikani, I will forever miss you.

DEDICATION

I dedicate this to my mother, Lydia Qukeza Nikani.

TABLE OF CONTENTS

DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS.....	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF FIGURES.....	ix
LIST OF TABLES	x
ABBREVIATIONS	xi
CHAPTER ONE: INTRODUCTION	1
1.1 Introduction.....	1
1.2 Background to the research problem	2
1.3 Statement of research problem	3
1.4 Aim of the study.....	3
1.5 Objectives of the study	4
1.6 Research question	4
1.6.1 Research sub-questions.....	5
1.7 Contribution of the research	5
1.8 Significance of the study	5
1.9 Delineation of the research	5
1.10 Ethical considerations	6
1.11 Thesis Structure	Error! Bookmark not defined.
1.10 Conclusion.....	7
CHAPTER TWO: LITERATURE REVIEW.....	7
2.1 Introduction.....	8
2.2 Electronic Monitoring System (EM).....	8
2.3 Issues that could affect the implementation of EM.....	9
2.3.1. Cultures and Digital gap	9
2.4 Perceptions of monitoring officials on electronic tagging	10
2.5 Information and Communication Technology.....	10
2.6 Parolee Tracking Technology.....	11
2.6.1 Enrolment Web Services	14
2.7 Benefits of parolee tracking systems.....	30
2.8 Successful parolee implementations	30
2.9 Current state of South African correctional centers.....	31
2.9.1 Correctional Facilities	31
2.9.2 Inmate population.....	31
2.9.3 Racial breakdown	32
2.10 Technology Adoption Theories.....	33
2.10.1 Technology Acceptance Model (TAM)	33
2.10.2 Diffusion of Innovation theory (DOI).....	35

2.10.3 Theory of Reasoned Action (TRA)	36
2.10.4 Technology self-efficacy	37
2.11. Theoretical framework for this study	37
2.11.1 Unified Theory of Acceptance and Use of Technology (UTAUT).....	37
Source: Venkatesh et al (2003).....	38
2.12 Conclusion.....	39
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY	40
3.1 Introduction.....	40
3.2 Research design	40
3.3 Research philosophy	40
3.4 Research Approach.....	41
3.5. Qualitative research	42
3.6 Quantitative research	43
3.7 Research Strategy.....	43
3.8 Research Site	44
3.9 Unit of Analysis.....	44
3.10 Research Population	44
3.11 Research Methodology	44
3.12 Research Methodology used in this study.....	45
3.13 Research Case.....	46
3.14 Sampling	46
3.15 Data collection methods	46
3.16 Validity.....	47
3.17 Reliability and Bias	47
3.18 Data Analysis Approach	48
CHAPTER FOUR: FINDINGS AND DATA ANALYSIS	51
4.1 Introduction.....	51
4.2 Descriptive analysis.....	51
4.2.1 Performance Expectance (PE).....	52
4.2.2 EFFORT EXPECTATION (EE).....	55
4.2.3 SOCIAL INFLUENCE (SI)	57
4.2.4 FACILITATING CONDITION (FC).....	59
4.2.5 BEHAVIOURAL INTERNTION (BI)	62
4.3 Thematic Analysis of the survey questionnaire	63
4.3.1 Theme from questionnaires response	64
4.3.2 Thematic analysis of the Interviews	66
4.3.3 Using theoretical framework for analysis.....	69
4.4 Conclusion.....	69
5.1 Introduction.....	70
5.2 Research Contribution.....	70
5.3 Research Limitations	70
5.4 Future research	70
5.5 Recommendation	71

5.6 Conclusion.....	72
REFERENCES.....	74
APPENDICES.....	83
APPENDIX A: Research questionnaire.....	83
APPENDIX B: Interview questions for DCS employees.....	89
APPENDIX C: Consent letters.....	90

LIST OF FIGURES

Figure 1.1: City of Cape Town Metro: The empirical setting.....	6
Figure 2.1: Household with Internet access, by region	10
Figure 2.2: Two-Piece GPS offender tracking systems.....	11
Figure 2.3: Electronic Monitoring Data Processing.....	13
Figure 2.4: EM Manager (Smart View) Log In.....	14
Figure 2.5: Enrolling contact details of an offender.....	16
Figure 2.6: Enrolling contact details continue.....	17
Figure 2.7: Enrolling an offender.....	18
Figure 2.8: Supervision Level.....	19
Figure 2.9: Offender Enrolment.....	20
Figure 2.10: Map Offender's Address.....	21
Figure 2.11: Offender General Information Page.....	21
Figure 2.12: Create Schedule for Home Inclusion Zone.....	22
Figure 2.13: Create Schedule for Home Inclusion Zone, continue.....	22
Figure 2.14: Create Schedule for Home Inclusion Zone, continue.....	23
Figure 2.15: Create Exclusion Zone.....	25
Figure 2.16: Create Exclusion Zone, continue.....	25
Figure 2.17: Create Exclusion Zone, continue.....	26
Figure 2.18: Create Exclusion Zone, continue.....	27
Figure 2.19: Deactivation Hardware.....	28
Figure 2.21: Deactivation Hardware, continue.....	29
Figure 2.22: Technology Acceptance Model (TAM).....	31
Figure 2.23: Theory of Reasoned Action.....	34
Figure 2.24: Diffusion of innovations.....	34
Figure 2.25: Theoretical framework of hypotheses (UTAUT) Model.....	35

LIST OF TABLES

Table 2.1: Correctional facilities.....	33
Table 2.2: Inmate population.....	33
Table 2.3: Racial breakdown.....	34
Table 3.1: Research question.....	18
Table 3.2: Methods of data collection.....	27
Table 4.1: Performance Experience.....	31
Table 4.2: Effort Experience.....	33
Table 4.3: Social Influence.....	35
Table 4.4: Facilitating Condition	37
Table 4.5: Behavioural Intention.....	39
Table 4.6: Themes, categories and sub categories from questionnaires response...41	
Table 4.7: Themes, categories and sub categories from interviews response.....	42

ABBREVIATIONS

DCS	Department of Correctional Services
E-government	Electronic governance
EM	Electronic Monitoring
GIS	Geographical information systems
GPS	Global Position System
ICT	Information and Communication Technology
IS	Information Systems
ISP	Internet Service Provider
IT	Information Technology
SA	South Africa
TAM	Technology Acceptance Model
TRA	Theory of Reasoned Action
UTAUT	Unified Theory of Acceptance and Use of Technology

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Mlangeni (2017) argues that the definition of an acute business tool used in the 21st century is Information and Communication Technology (ICT). According to Bhatnagar (2000), the most developed countries, ICT improved poverty and shapes social and technological infrastructure. The custom of ICT in government (also acknowledged as e-Government) is increasing as services are being made similar to those of the private sector (Ruhode, 2013). Although ICT is a critical business tool, some government officials are still struggling to make use of it.

According to Tapscott and Agnew, (1999) they argues that “e-Government is not about place public services online, but it is about government harnessing information technology in order to remain relevant in a more interactive and information era”. Carter and May, (2001) says that most government around the world prioritise high on e-Government implementation. Nonetheless, other Africa countries have to show a severe assurance to e-Government improvement, regardless of some enormous political and socio-economical encounters (Ruhode, 2013).

In its simplest form, e-government is described as the “use of information and communications technology (ICT) based initiative to connect government to citizens and business nationally and internationally; provide information to government employees; and to connect government agencies together, in order to achieve higher levels of service delivery, internal processes and sharing of government information” (Ruhode, 2013:25). “e-Government implementation can result in significant benefits such as improved efficiencies, greater access to services, greater accountability, transparency and citizen empowerment (Lam, 2005; Tung & Rieck, 2005), lowered costs and time for services (Bhatnagar, 2000; Gilbert et al., 2004).” Nevertheless, this is not continuously the situation, predominantly in emerging states, where things are slow.

One of the slow e-government implementations is the adoption of technology aimed at improving the internal workings of government operations in a developing country

setting. This research, the aim is to exploring factors that affecting the adoption of electronic monitoring systems. The system under study is the electronic device that is used to track parolees by monitoring officials. The system is discussed in the next section, which presents the contextual to the exploration.

1.2 Background to the research problem

It's been more than 50 years, ever since the Department of Correctional Services in South Africa uses the manual tracing and monitoring of parolees under supervision. The use of manual (hand writing) and monitoring of parolees was recently supplemented with an electronic monitoring system (Nicro, 2011). Parolees are monitored through electronic monitoring system when they go out to the public. According to Vermeulen (2013) argues that the Geographic Positioning System (GPS) technology is used to trace parolees' activity once at home. It has been in place in the United States, Australia and Canada. Although the systems has been used in many countries, including South Africa, it does not stop offenders from committing crime again (Nicro, 2011).

According to Naidoo (2011), reoffending of offenders has led to overcrowding of correctional centres and the need to build new correctional facilities has increased. The Department of Correctional Services is currently housing close to 172 271 offenders in total and the facilities in the country ware meant to lodge 100 668 inmates. Goko (2013) argues that in a country like South Africa, cost to taxpayers on housing and feeding offenders will be reduced by up to R6, 500 per inmate a month as South Africa increase the rolling out of electronic monitoring of parolees. Meanwhile, the South African population is about 57 million citizens and South Africa has the highest percentage of incarceration in Africa, each inmate cost taxpayers money R10850 on a monthly bases to care.

Electronic monitoring cost per monthly is far less at R5 187 per offender and currently just over a 1000 parolees who are enrolled into the programme nationwide (Nicro, 2011). Although electronic monitoring in South Africa seems to be inexpensive, its effectiveness has been a concern. The training of staff has been a major worries, as to how fast they will be to action the training and efficiently reply to defilement of parole contracts. The success of electronic monitoring system it also depend on the

adoption technology by users and the usability. Furthermore, literature is not showing and providing a clear degree of consideration of the reflection of the users. The functionality of the tool and the operationality of the technology is obtainable but the literature is not available. The suggestion displayed is that the tool has its advantages and disadvantages, and issues such as legal, ethical and practical challenges remain the argument.

Meanwhile, the success of electronic monitoring entirely is subjected on the acceptance of the technology by the users using the system, hence in any organisation or state entity that presents an invention, research has to be done on end users' perceptions. Even if the government can spend more money on technology, users are responsible for the successful utilisation of the system to its full maximum or purpose of presenting it; the system is useless. The aim of DCS to lessening the issues of Justice Department at hand is brilliant. The main objectives of the study is to afford the DCS with the electronic monitoring strategic that is mainly for correctional officials of parolees, that would be used within the Department of Correctional Services in South Africa. This strategic application can be done unfolding the main crucial challenges of the system that inspired the success of the system.

1.3 Statement of research problem

Despite the implementation of a parolee monitoring system in the DCS, some users are slow in adopting the system while others are resisting it altogether. Consequently, the government of South Africa has not yet realised the benefits (cost reduction of housing the offenders, overcrowding of correctional facilities) from the huge investment it has made in the system.

1.4 Aim of the study

The research aim is to investigate factors that influencing the adoption of new technology by public services employees in South Africa.

1.5 Objectives of the study

The key objective of the study is to examine electronic monitoring system adoption trails in the Department of Correctional Services in South Africa and to improve a framework that comprehends a list of the essential atmospheres, issues and subject that can move electronic monitoring systems adoption, as well as suggestion on how destructive environments and perceptions would be recognised and prohibited to confirm adoption and constant use of the electronic monitoring system. To realise these objectives of the research, the next objectives were articulated:

1. To pinpoint and analyses the adoption and adoption stages of electronic monitoring system in Department of Correctional Services.
2. To pinpoint and count the serious achievement aspects, in relations to the views and settings that are linked with effective electronic monitoring system adoption and its constant usage.
3. To pinpoint and count the adverse view and setting would obstruct the adoption of electronic monitoring system in this organisation that would indicate to its non-adoption, refusal or absolute usage.
4. To express an electronic monitoring system adoption framework that on the one hand, will compress the achievement issues that might be virtual and preserved in the Department of Correctional Services for positive electronic monitoring system adoption and on the other hand specify how the adverse effect would be distributed.

1.6 Research question

Which factors influence the adoption of electronic monitoring system of parolees in South Africa?

1.6.1 Research sub-questions

1. What is the present context of electronic monitoring system adoption?
2. What are the weaknesses and experiments to its adoption?
3. How would the Department of Correctional Services in South Africa support itself to business with the encounters of electronic monitoring system in order to earn its welfares?
4. What are the elements for an effective adoption of electronic monitoring system?
5. How can these elements be adopted for the diverse working environments of the Department of Correctional Services in South Africa?
6. What would be best situations for electronic monitoring adoption in Department of Correctional Services in South Africa?

1.7 Contribution of the research

The enquiry has the prospective to make numerous aids to the application of electronic monitoring system of offender's concept in the Department of Correctional Services. For example, in many ways, the outcome of this investigation will be of pronounced significance into justice and correctional services departments.

1.8 Significance of the study

The research summaries plain data that can be used to do more investigation on electronic monitoring systems in the Department of Correction Services and the entire government. Aspects that impact the adoption are acknowledged, that could help stakeholders and service providers to take into consideration these important factors. The information could assist them to find an achievable solution to the problems and challenges at hand for the government to meet its specific goals. These identified factors could give clean direction to the development of a relevant model for electronic monitoring adoption by the Department of Correctional Services.

1.9 Delineation of the research

The study was done in South Africa, with the Department of Correctional Services, Goodwood Management Area and Pollsmoor Management Area. Only the three

community corrections of the managements (Michael's Plain, Cape Town and Bellville) were used.

1.10 Ethical considerations

The investigation is completed following the correct measure of CPUT and the Faculty of Informatics and Design ethics values. Participants volunteer to partake in the investigation without any mandatory. Information was distributed to participants in advance. Those participants involved in the study were well-versed of their rights. Participants partake out their good will into the research. Moreover, it is approved the evidence given by investigation participants is for the only reason of allowing the investigator to finish the necessities of getting the master degree of IT. The matter under investigation is not implicating dialogue of complex issues, or dis it implicate processes that might be detrimental to the applicants.

City of Cape Town Metro: The empirical setting

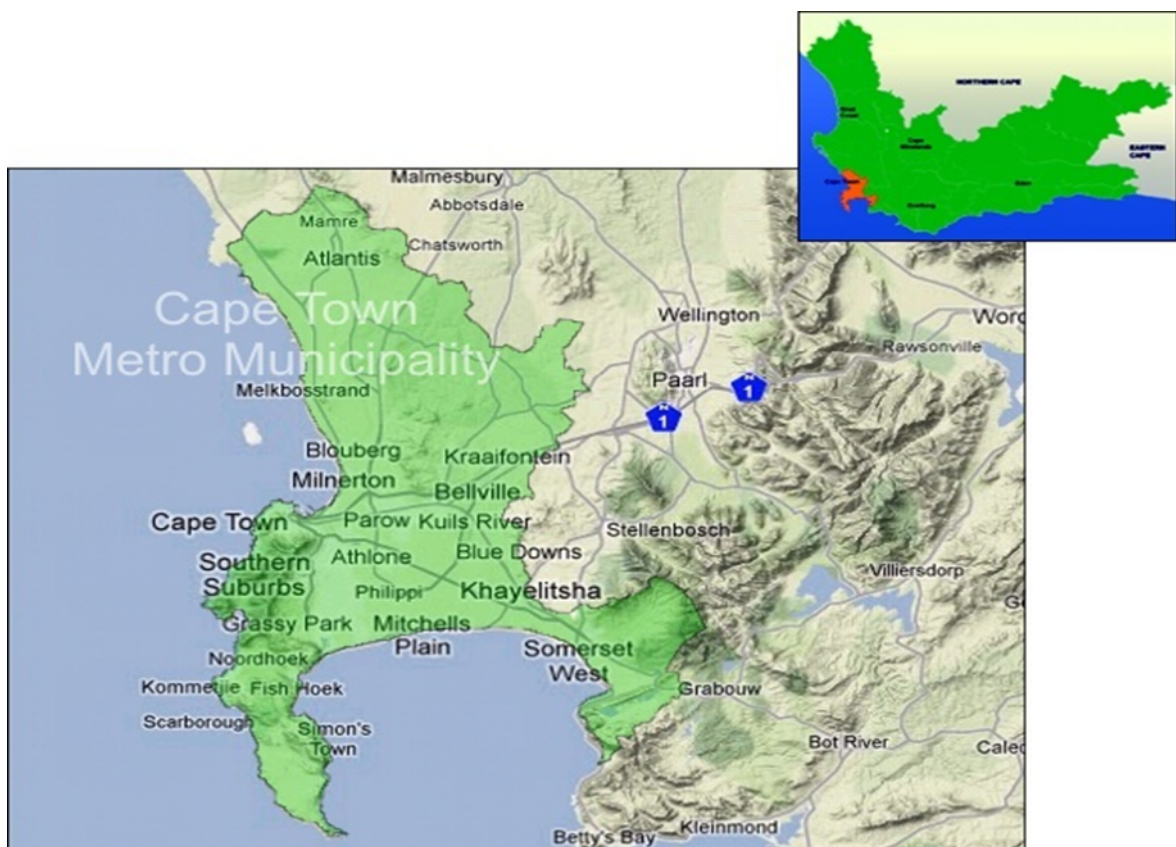


Figure: 1.1: Cape Town Metro Municipality

Source: Google Image (2018)

1.11 Conclusion

This chapter is mainly to present the problem; identifying the background, objectives and the aim of the research study. Moreover, it deliberate on the limitation and the ethical reflection of the study and offering the research question and significance of the study. The following chapter emphasizes on analysing and understanding preceding studies.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The main aim of chapter is to scrutinise the literature about practicality of electronic monitoring system with global positioning system to monitor parolees. Furthermore, to comprehend how the use of electronic monitoring system facilitates the monitoring of parolees. Lastly, to discover the ways of improve views in order to recommend a policy concerning monitoring the parolees who are released into society.

2.2 Electronic Monitoring System (EM)

According to (Black & Smith, 2003) these are mainly uses of electronic monitoring systems;

- **Imprisonment** – “electronic monitoring can be used to ensure that the individual remain in designated place. For example, home detention schemes typically require offenders to be at home during established curfew hours. This was one the first uses of electronic monitoring and remains the most popular (Mukherjee 1999; Crowe 2002).”
- **Restraint** – “alternatively, electronic monitoring can be used to ensure that an individual does not enter proscribed areas, or approach particular people, such as complaints, potential victims or even co-offenders (Marien, 2002).”
- **Observation** – “Electronic monitoring may be used so that authorities can continuously track a person, without actually restricting their movements (Black & Smith, 2003).”

According to Black & Smith, (2003) the main issue is that electronic monitoring system is viewed as a form punishment and as a way of limiting ones' freedom of association. Although, it could not be the point in this case. As it affords and gives compulsory period by the individual to continue with his/her accomplishments inside the community and to continue to reserve the family life.

2.3 Issues that could affect the implementation of EM

2.3.1. Cultures and Digital gap

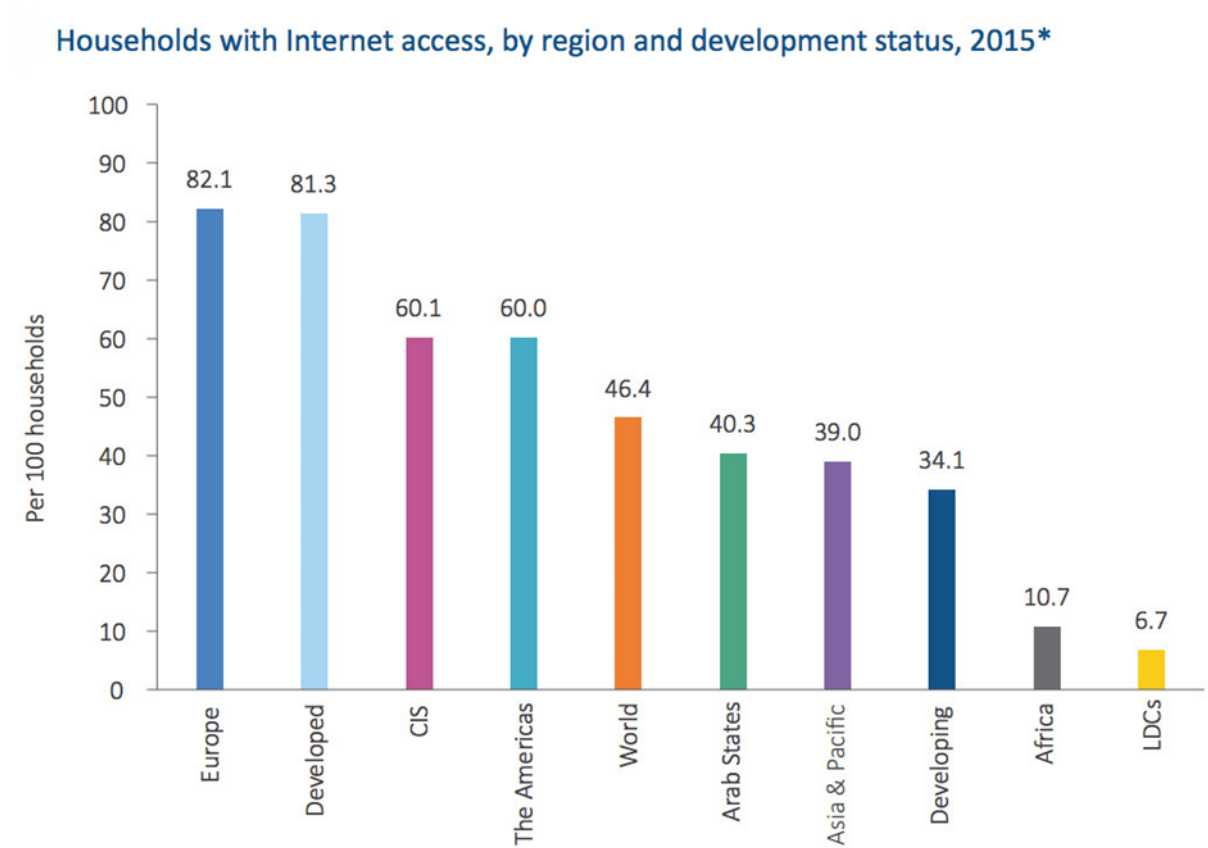


Figure 2.1: Household with Internet access, by region and development status

Singh (2004) argues that new tool of technology generated digital gap among cultural groups which are acquainted and those group that are having access to technology are high that those who do not have information technology platform. Alhussain and Drew (2012) state that the contributing factor to the problem of generation group it is due to lack of technological infrastructure, poor educational resources and many are technological challenged. Singh (2004) is convinced that his culture groups diversity are affecting the success of implementing electronic monitoring and it is evident from Figure 2.1 that Africa, as a developing continent, is at 10.7 per 100 house with internet access and while in the developed countries Europe evident is clear that almost 90 per of house should have internet access.

However, Singh (2004) highlight some factors that might have contributed significantly to the gap in the communities and made reference to the apartheid era

and poverty levels in the developing countries. The cost of purchasing new technology including the lack of communication infrastructure development. This situation might have led to those individuals who has never used computer before to be very much hesitant to use the tool. Equally, the government has not yet invest in skills development to capacitate the employees to use new technology efficiently.

2.4 Perceptions of monitoring officials on electronic tagging

Nicro (2011) argues that even though the monitoring system can be implemented in correctional facilities that is not going to prevent the parolees from committing crime again. Nevertheless, there is no evidence provided in from to say electronic tag lessens offence or stop the parolees from getting involved in any form of criminal activities. The public service employees has no issues with the introduction of EM and most has trail and tested it. Nonetheless, the combination of tagging and supervision would be the solution and can work perfect together. Venkatesh and Davis (200) argues that the views concerning use of electronic monitoring system would be ensured by using Technology Acceptance Model (TAM), theoretical framework model and technology self-efficacy.

2.5 Information and Communication Technology

Globalisation can be described as the method of making the world small by means of ICT usage (Zembylas and Vrasidas, 2005). Schifferes (2007) also acknowledges that economic development around the globe is huge due to the issue of ICT systems. ICT cannot be separated from human life activities as it helps organisations to grow their production and workers are able to do their tasks in a fast mode in sharing data (Villiers et al., 2012).

There number of ways that ICT can be used fully to achieve greater benefits within government departments including correctional services. Introducing EM systems to monitor parolees is in line with what Villiers et al., (2012) consider to be the key to the success of the operation by means of adopting the systems.

2.6 Parolee Tracking Technology

The former Minister of correctional services, S'bu Ndebele, said that “the department had chosen a two piece GPS tracking system, which integrated tracking, communication and mapping technologies. It enabled operators to effectively track offenders, virtually anywhere, anytime at varying levels of intensity”. He continued to say that “a national control room is now operational at the department of correctional service’s head office Mail & Guardian (2013). This control room is manned on a 24-hour basis, seven days a week, and 365 days per year.” Minister Ndebele argues that “this type of alternative non-custodial sentencing would place the responsibility for rehabilitation and reintegration on the community and its stakeholders, communities and families to work with us in order to derive the desired benefits of public security, managing inmate population, offender reintegration as well as cost reduction Mail & Guardian (2013).”

Figure: 2.2 Two-Piece System.

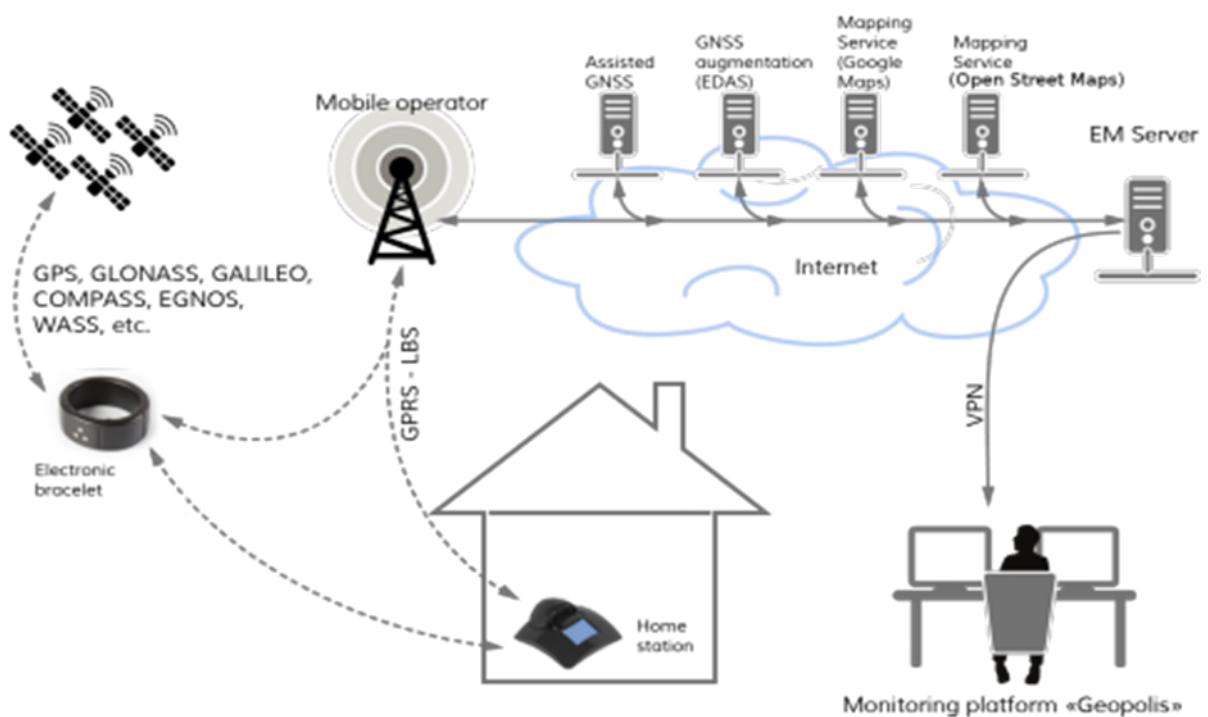


Source: 3M EM GPS tracker

“The bracelet resembles a wristwatch, is waterproof and shock resistant and is generally fitted to the ankle. Attempts to remove it trigger an alarm”, said Minister Ndebele on Mail & Guardian, (2013).

According Taylor et al., (2016) the main argument that “EM, consisting of hardware and software components, reports an individual’s location and corresponding time data at programmed intervals. Whether an agency faces a mandate to track domestic violence offenders or sex offenders, whether it has a need to more closely monitor higher risk offenders, or whether it is looking for confinement alternatives for low-risk offenders, this technology can often be a practical tool for supervising and managing select individuals”.

Figure: 2.3 Electronic Monitoring Data Processing



Source: Geo-Satis.com (2016)

As GPS develops inexpensive and more exact, authorities seem to be moving away from FR and towards GPS when administering electronic monitoring (Bales et al., 2010). Electronic monitoring is attractive since it is less expensive than imprisonment nonetheless, delivers additional supervision paralleled with traditional probation. GPS is affordable worldwide and, in some instances this has created a huge shifting from Frequency Radio (FR) to GPS systems in the case of monitoring devices used (Bale,

2010). Electronic monitoring is used in many parts of the world due to its affordability to justice departments compared to incarceration of offenders in facilities (Roman et.al, 2012).

The parolee electronic monitoring system is described as follows: “A receiver, embedded in a bracelet, is affixed to an offender’s leg or arm. The receiver determines the individual’s location by using signals from GPS satellites, global navigation satellite system (GLONASS), Wide Area Augmentation System (WAAS), Wi-Fi, or other means. Lastly, this information is transmitted via a wireless signal or traditional wired telephone line to monitoring software located in a monitoring centre” (Taylor et al., 2016).

The author has highlights a number of interactions that can be alleged as an alternative to the operational, assessment tool, and structures of a huge significance (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014) including:

- Hence, it is real substantial to acknowledge the intervention mission and intentions, as this decide enterprise effective provision of the technology. Monitoring diverse kinds of offenders would mandate arrangement of changed structure. For example:
 - *“For a middle age functional alcoholic whose offence was driving under the influence (DUI), it is most important to get that individual back to work and supporting his family. The most important OTS feature is schedule/timing”* (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).
 - *“For a drug dealer, it is more important to know the offender’s location and that the offender is not in areas known for drug sales. The most important OTS features are GPS accuracy, exclusion zone alerts, and data analysis”* (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).
 - *“For a sexual offender, it is important to know where the individual is. Important OTS features are GPS accuracy, frequency of location*

reporting, exclusion zones, victim notification, and data analysis” (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).

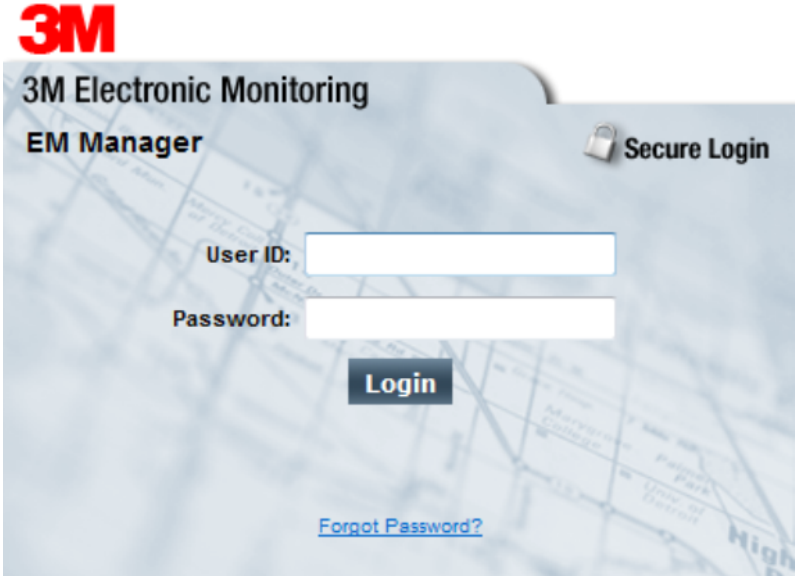
➤ *“For an individual attempting to reintegrate into society, it is important to avoid stigmatization. The most important OTS device features in this regard may be size, weight, and comfort”* (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).

• *“Structures that develop a busy monitoring officer’s ability to do his or her job more efficiently are important; mobile applications on internet-enabled devices, mapping capability, analytics, and a variety of reports are useful tools in this regard. Multiple location technologies and minimal false negatives and false positives are features that provide confidence in the OTS technology”* (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).

• *“Features that alert a monitoring officer when an offender is trying to circumvent the OTS device or the rules regarding his or her placement on electronic monitoring are critical”* (Harvey, 2014) (Sachs & Engel, 2014) (Carbonneau, 2014).

2.6.1 Enrolment Web Services

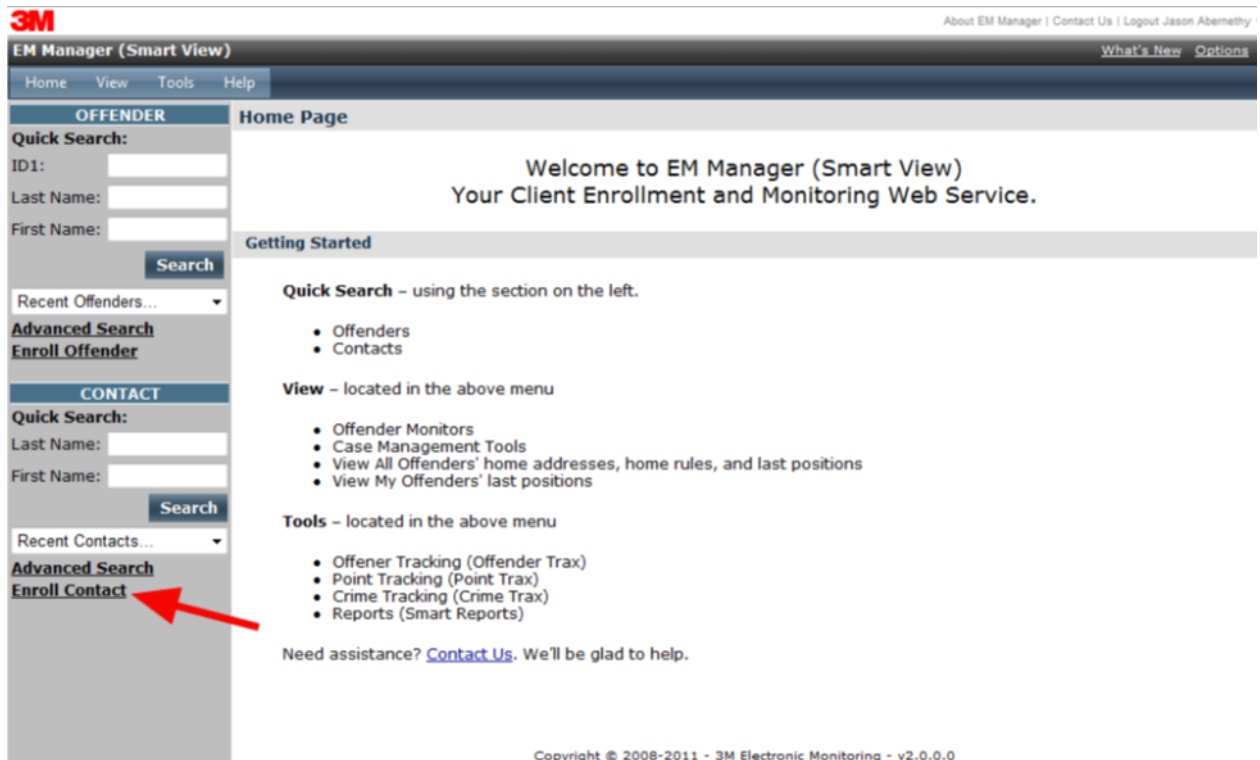
Figure: 2.4 EM Manager (Smart View) Log In



The image shows a web browser window displaying the login page for the 3M Electronic Monitoring (EM) Manager. At the top left is the 3M logo. Below it, the text reads "3M Electronic Monitoring" and "EM Manager". On the top right, there is a "Secure Login" label with a padlock icon. The main area contains two input fields: "User ID:" and "Password:". Below these fields is a dark blue "Login" button. At the bottom, there is a blue link that says "Forgot Password?". The background of the page is a light blue map.

The 3M log in screen can be accessed through (<https://smartview.ptm.com>) for a secured website. Monitoring officials need to log on user their ID and Password. After successful login the EM Manager will take the user to another screen shown in Figure 2.5.

Figure: 2.5Enrolling a contact details



On this screen the monitoring officials enter their details (surnames, names, addresses, telephone. etc.).The link is on the left side of the Home Screen, as indicated in Figure 2.5. After capturing of personal data, monitoring officials save the information.

Figure: 2.6 Enrolling contact details continue

3M EM Manager (Smart View) About EM Manager | Contact Us | Logout Joe Officer

Home View Tools Help What's New Options

OFFENDER Enroll New Contact

Quick Search:
 ID1:
 Last Name:
 First Name:

Recent Offenders...
 Advanced Search
 Enroll Offender

CONTACT

Quick Search:
 Last Name:
 First Name:

Recent Contacts...
 Advanced Search
 Enroll Contact

* Customer: 3M EM Training

Demographic Data

My Contact Record: (Associate this contact record with current user)

Custom ID1:
 Custom ID2:

* Last Name: Officer
 * First Name: Joe
 * Address: 8102 Sheldon Road
 Address 2:
 * City: Tampa
 * State: Florida
 * Zip code: 33615-
 Phone Number: (727) 555-4447
 Mobile Number: (727) 555-8778
 Fax Number: (727) 555-4112
 Pager Number: - No Pagers Available
 Notification E-mail Address: joe.officer@doc.com
 Notification E-mail Format: Standard
 Notification Text Msg Address: 7275558778@att.txt.net
 Notification Text Msg Format: Brief
 * Time Zone: (GMT -05:00) Eastern Time
 - Daylight Saving Applies

Report Options

Reporting E-mail Address: joe.officer@doc.com

	Daily Violation Summary Report	Case Management Activity Report
Receive Active 2 Piece (MTD):	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Receive Active 1 Piece (WMTD):	<input type="checkbox"/>	<input type="checkbox"/>
Receive Passive 2 Piece (MTD):	<input type="checkbox"/>	<input type="checkbox"/>
Receive Home Curfew RF:	<input type="checkbox"/>	<input type="checkbox"/>
Receive 1 Piece (WMTD) Home Curfew RF:	<input type="checkbox"/>	<input type="checkbox"/>

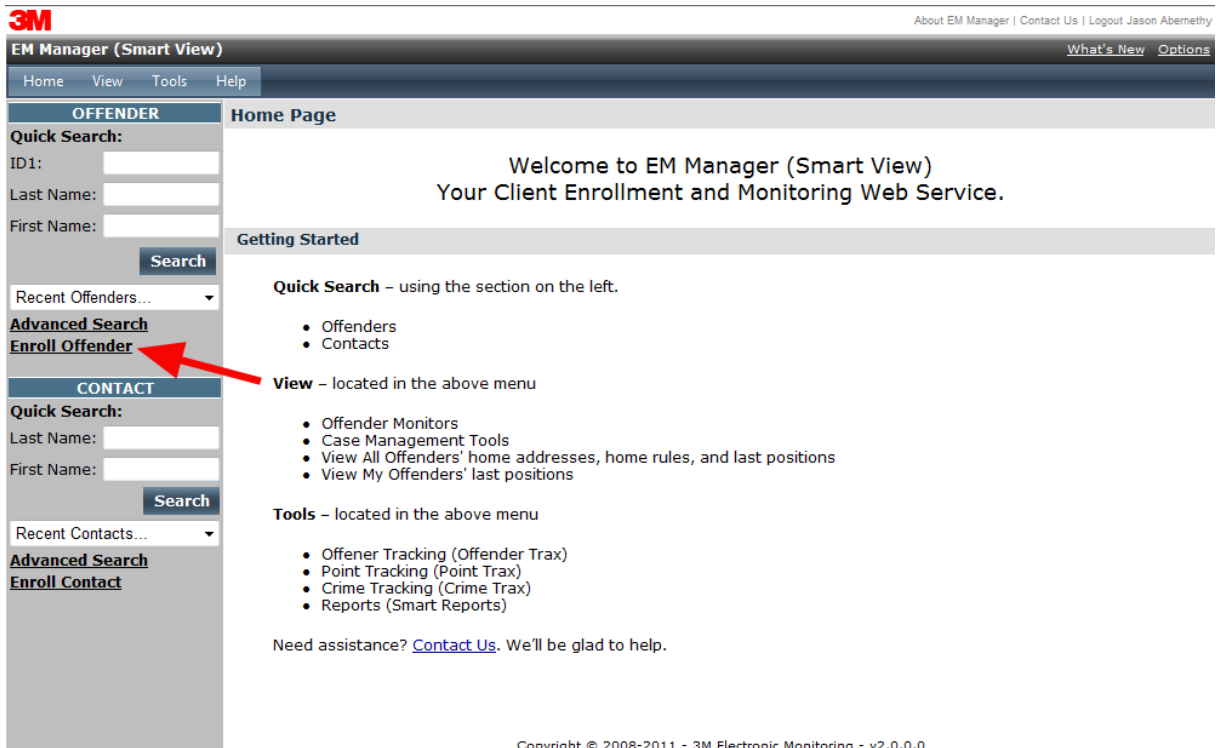
Default Notification Options

Pager Notification:
 Fax Notification:
 Email Notification:
 Text Msg Notification:

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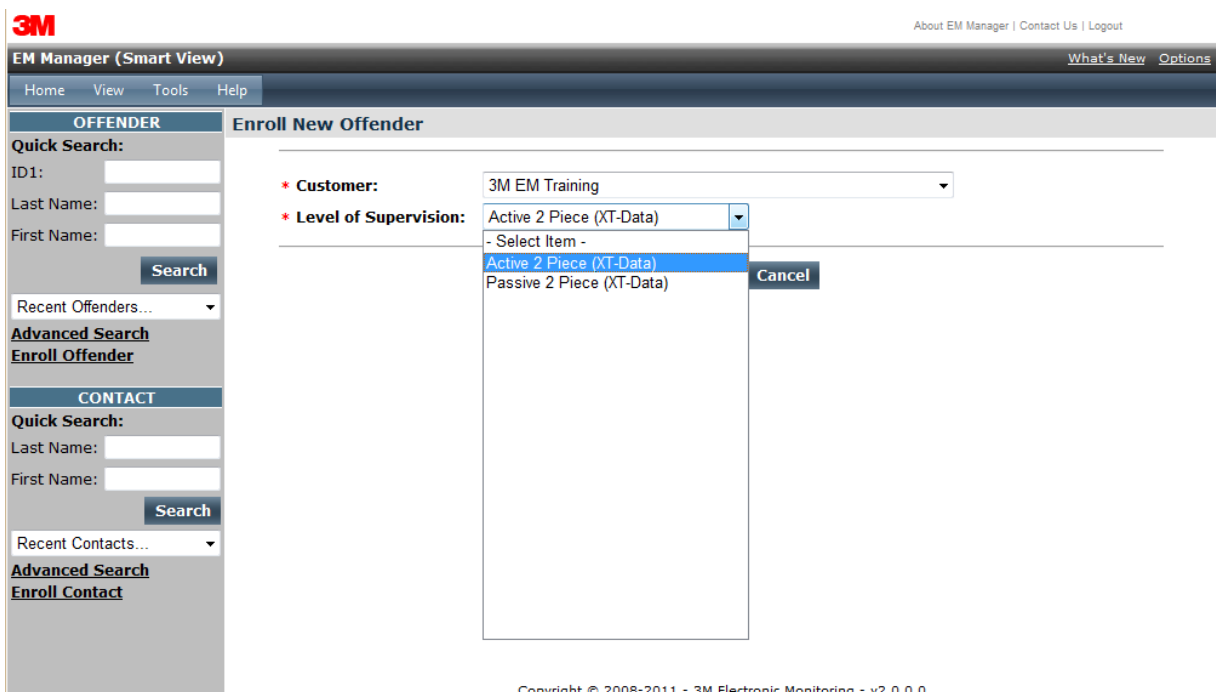
Figure 2.6 is a continuation of the monitoring official's personal details, all the mandatory fields have to be completed in order for the system to save details and take the user to the next screen for the offenders' details.

Figure: 2.7 Enrol an Offender



In Figure 2.7 the monitoring official captures the details of the offender by clicking on the link, as indicated by an arrow on the screen.

Figure: 2.8 Supervision Level



In Figure 2.8 monitoring officials would identify their status, be it just monitoring officer or supervisor. This screen assists when it comes to checking and controlling of data captured, only supervisors can check their monitoring officer work done.

Figure: 2.9 Offender Enrolment

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Home View Tools Help What's New Options

OFFENDER **Enroll New Offender**

Quick Search:
 ID1:
 Last Name:
 First Name:

 Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT
Quick Search:
 Last Name:
 First Name:

 Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

Demographic Data

* Customer: 3M EM Training
 * Level of Supervision: Active 2 Piece (XT-Data)

Test Offender: Yes No

Assigned Officer: Officer, Joe
Custom ID1:
Custom ID2:

* Last Name: Offender
 * First Name: Steve
 * Address: 1838 Gunn Hwy
Address 2:
 * City: Odessa
 * State: Florida
 * Zip code: 33556-____
 * Coordinates (lat,lon): (28.185045,-82.591739)
Phone Number: (727) 555-5987
Mobile Number: (727) 555-4447
Offender Type: Other/Unspecified
 * Time Zone: (GMT -05:00) Eastern Time
 - Daylight Saving Applies

Comments:

Picture:

Hardware Assignment

Assign 2 Piece (XT): 35400016 (XT40433U, GSM-E, voice)
Assign Bracelet: 200050 (BTX 4433)
Assign Base Unit: 50400029 (SBU2000LL)

Basic Rule Setup

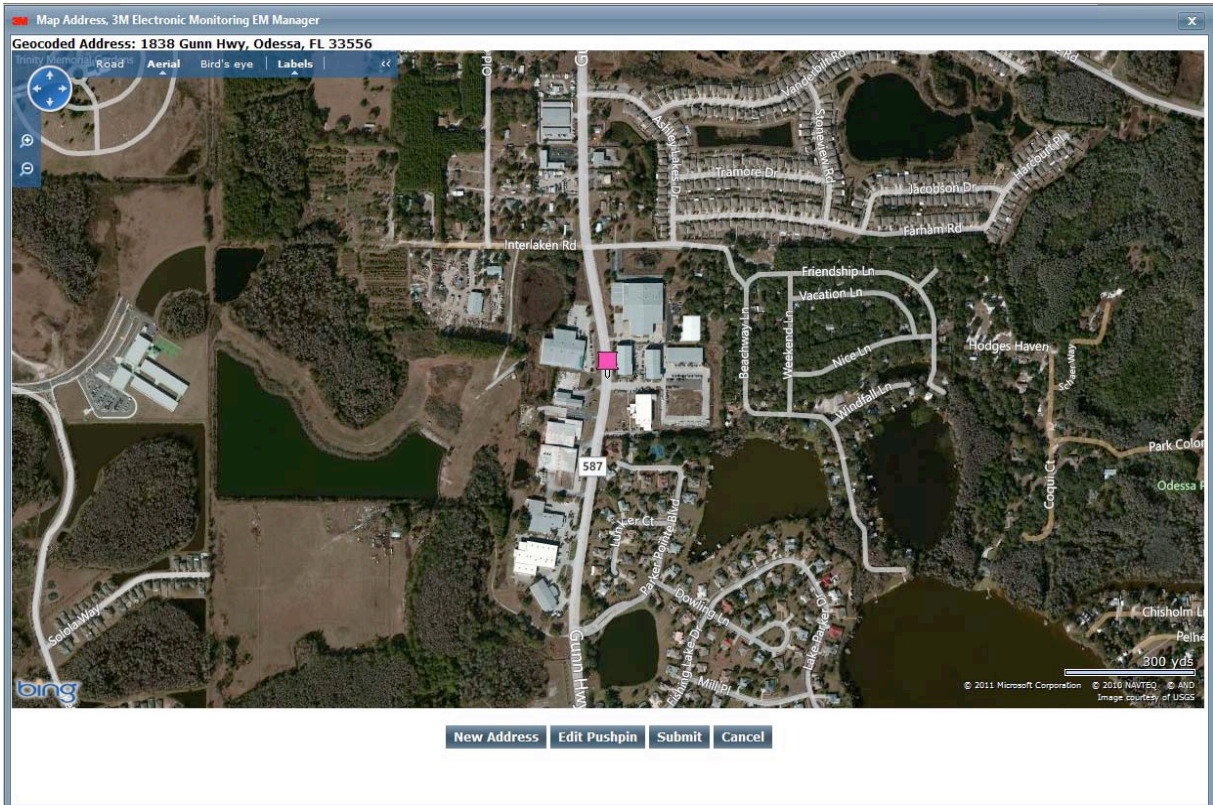
Home Zone: - Create default Home Zone from home address

Notification Contacts

Contact Name	Pager	Fax	Email	Txt Msg	
Officer, Joe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="Add"/>
Contact Name	Page	Fax	Email	Txt Msg	
Officer, Joe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="button" value="Delete"/>

In Figure 2.9 its where enrolment of the offender is full captured after click on the link from the home screen and when capturing is done you are allowed to save the details.

Figure: 2.10 Map Offender's Address



On Figure 2.10 a map generated when the user click on the offender is enrolment screen. This area is where a monitoring official maps the restricted zone

Figure: 2.11 Offender General Information Page

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Home View Tools Help What's New Options

OFFENDER Offender - Steve Offender [259855]

Quick Search:
 ID1:
 Last Name:
 First Name:

Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
 Last Name:
 First Name:

Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

Offender General Information Offender Functions

Customer: 3M EM Training
Level of Supervision: Active 2 Piece (XT-Data)
Assigned Officer: [Joe Officer](#)
Enrollment Date: 01/31/2012 1:22 PM
Custom ID1:
Custom ID2:
Name: Steve Offender
Address: [1838 Gunn Hwy](#)
City, State Zip code: [Odessa, FL 33556](#)
Phone Number: (727) 555-5987
Mobile Number: (727) 555-1447
Offender Type: Other/Unspecified
Comments:
Time Zone: (GMT -05:00) Eastern Time (DST Applies)

No Photo Available

Assigned Hardware Information Hardware Functions

Bracelet: 200050 (BTX 4433)
Base Unit: 50400029 (Activate Pending, SBU2000LL)

Rule Information Rule Functions

Name	Type	Distance	Grace Period	Has Actions	Status
Home	Inclusion (Home)	600 ft	00:00:00	Yes	Pending Active
In Charger	Hardware	N/A	00:00:00	Yes	Pending Active
Dracelet Dattery	Hardware	N/A	00:00:00	Yes	Pending Active
Bracelet Gorie	Hardware	N/A	00:00:00	Yes	Pending Active
Bracelet Strap	Hardware	N/A	00:00:00	Yes	Pending Active
2 Piece (XT) Battery	Hardware	N/A	00:30:00	Yes	Pending Active
2 Piece (XT) Motion No GPS	Hardware	N/A	00:10:00	Yes	Pending Active

In Figure 2.11, the screen shows all details of the offender after being captured. This screen is like a dash board where the user is able to see all the information at once for clear identification of the correct details of the offender.

Figure: 2.12 Create Schedule for Home Inclusion Zone

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Home View Tools Help What's New Options

OFFENDER Offender - Steve Offender [259855]

Quick Search:
 ID1:
 Last Name:
 First Name:
 Search

Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
 Last Name:
 First Name:
 Search

Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

Offender General Information Offender Functions

Customer: 3M EM Training
Level of Supervision: Active 2 Piece (XT-Data)
Assigned Officer: [Joe Officer](#)
Enrollment Date: 01/31/2012 1:22 PM
Custom ID1:
Custom ID2:
Name: Steve Offender
Address: [1838 Gunn Hwy](#)
City, State Zip code: [Odessa, FL 33556](#)
Phone Number: (727) 555-5987
Mobile Number: (727) 555-4447
Offender Type: Other/Unspecified
Comments:
Time Zone: (GMT -05:00) Eastern Time (DST Applies)

No Photo Available

Assigned Hardware Information Hardware Functions

2 Piece (XT): 35400016 (Activate Pending, XT40433U, GSM-E, Data-only)
Bracelet: 200050 (BTX 4433)
Base Unit: 50400029 (Activate Pending, SBU2000LL)

Rule Information Rule Functions

Name	Type	Distance	Grace Period	Has Actions	Status
Home	Inclusion (Home)	600 ft	00:00:00	Yes	Pending Active
In Charger	Hardware	N/A	00:00:00	Yes	Pending Active
Bracelet Battery	Hardware	N/A	00:00:00	Yes	Pending Active
Bracelet Gone	Hardware	N/A	00:00:00	Yes	Pending Active
Bracelet Strap	Hardware	N/A	00:00:00	Yes	Pending Active
2 Piece (XT) Battery	Hardware	N/A	00:30:00	Yes	Pending Active
2 Piece (XT) Motion No GPS	Hardware	N/A	00:10:00	Yes	Pending Active

In Figure 2.12 is the screen where the user is able to create a schedule for inclusion zone as indicated by a red arrow.

Figure: 2.13 Create Schedule for Home Inclusion Zone, cont.

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Home View Tools Help What's New Options

OFFENDER Offender - Steve Offender [259855]

Quick Search: ID1: [] Last Name: [] First Name: [] **Search**

Recent Offenders... **Advanced Search** **Enroll Offender**

CONTACT Quick Search: Last Name: [] First Name: [] **Search**

Recent Contacts... **Advanced Search** **Enroll Contact**

General Rule Information

Zone Shape: Standard Zone
 Zone Type: Inclusion (Home)
 Rule Name: Home
 Address: 1838 Gunn Hwy
 City, State Zip code: Odessa, FL 33556
 Zone Size: 600 feet
 Coordinates: 28.185045 , -82.591739 **Map**
 Grace Period: 00:00:00 (hh:mm:ss)
 Offender Notification: Yes - Home

Rule Functions

- Edit
- Delete
- Print
- Make Template

Notification Contacts

Notify On Clear: No

Contact	Rcv Page	Rcv Fax	Rcv EMail	Rcv Txt Msg
Officer, Joe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Permanent Rule Schedule

	12am	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12pm	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
Monday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Tuesday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Wednesday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Thursday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Friday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Saturday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
Sunday	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

In Figure 2.13 as the creation of home inclusion continues on this screen the user is also able to edit or delete the rules, depending on the behaviour of the offender.

Figure: 2.14 Create Schedule for Home Inclusion Zone, cont.

The screenshot displays a software interface for creating a schedule. At the top, there is a header bar with the text "Permanent Rule Schedule" on the left and a button labeled "Copy From ..." on the right. Below the header, on the left side, is a vertical list of buttons for days of the week: "All", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday", and "Sunday". The "All" button is currently selected. To the right of these buttons is a large grid representing a weekly schedule. The vertical axis of the grid is labeled with time slots from "12am" to "11:00" in one-hour increments. The horizontal axis represents the days of the week. The grid cells are filled with either blue bars or white space. Blue bars indicate active periods: from 12:00 AM to 8:00 AM on Monday through Friday, and from 8:00 PM to 11:00 PM on Saturday and Sunday. Below the grid, there is a text area containing several lines of schedule data: "Starts on Mon at 12:00 AM, Ends on Mon at 08:00 AM", "Starts on Mon at 08:00 PM, Ends on Tue at 08:00 AM", "Starts on Tue at 08:00 PM, Ends on Wed at 08:00 AM", "Starts on Wed at 08:00 PM, Ends on Thu at 08:00 AM", and "Starts on Thu at 08:00 PM, Ends on Fri at 08:00 AM". At the bottom left of the interface, there is a label "Notes:" followed by a large, empty text box for user input.

In Figure 2.14, the creation of the schedule for home inclusion zone continues and the screen shows the scheduling when it is done that can make notes as the user monitors the offender during the course of the week.

Figure: 2.15 Create Exclusion Zone

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Home View Tools Help What's New Options

OFFENDER Offender - Steve Offender [259855]

Quick Search:
 ID1:
 Last Name:
 First Name:
 Search

Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
 Last Name:
 First Name:
 Search

Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

Offender General Information Offender Functions

Customer: 3M EM Training
 Level of Supervision: Active 2 Piece (XT-Data)
 Assigned Officer: [Joe Officer](#)
 Enrollment Date: 01/31/2012 1:22 PM
 Custom ID1:
 Custom ID2:
 Name: Steve Offender
 Address: [1838 Gunn Hwy](#)
 City, State Zip code: [Odessa, FL 33556](#)
 Phone Number: (727) 555-5987
 Mobile Number: (727) 555-4447
 Offender Type: Other/Unspecified
 Comments:
 Time Zone: (GMT -05:00) Eastern Time (DST Applies)

Assigned Hardware Information Hardware Functions

2 Piece (XT): 35400016 (Activate Pending, XT40433U, GSM-E, Data-only)
 Bracelet: 200050 (BTX 4433)
 Base Unit: 50400029 (Activate Pending, SBU2000LL)

Rule Information Rule Functions

Name	Type	Distance	Grace period	Yes	No	Active
Home	Inclusion (Home)	600 ft	00:00:00	Yes	No	Pending Active
In Charger	Hardware	N/A	00:00:00	Yes	No	Pending Active
Bracelet Battery	Hardware	N/A	00:00:00	Yes	No	Pending Active
Bracelet Gone	Hardware	N/A	00:00:00	Yes	No	Pending Active
Bracelet Strap	Hardware	N/A	00:00:00	Yes	No	Pending Active
2 Piece (XT) Battery	Hardware	N/A	00:30:00	Yes	No	Pending Active
2 Piece (XT) Motion No GPS	Hardware	N/A	00:10:00	Yes	No	Pending Active

Rule Functions

- Add Zone
- Replicate Actions
- Reset Rules

In Figure 2.15, the screen shows where the user creates the exclusion zone. The red arrow indicates where the user can add and delete the rules.

Figure: 2.16 Create Exclusion Zone, cont.

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EM Manager (Smart View) What's New Options

Home View Tools Help

OFFENDER **Edit Offender - Steve Offender [259855]**

Quick Search:
ID1:
Last Name:
First Name:
Search

Recent Offenders...

[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
Last Name:
First Name:
Search

Recent Contacts...

[Advanced Search](#)
[Enroll Contact](#)

General Rule Information

Zone Template: **Select** **Reset**

Zone Shape: Standard Free Form

Zone Type: Inclusion Exclusion

Continue **Cancel**

Okay (2 Piece (XT) Activate Pending)

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In Figure 2.16, the screen is a continuation of the exclusion zones for the offender.

Figure: 2.17 Create Exclusion Zone, cont.

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Home View Tools Help What's New Options

OFFENDER **Edit Offender - Steve Offender [259855]**

Quick Search:
 ID1:
 Last Name:
 First Name:

Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
 Last Name:
 First Name:

Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

General Rule Information

Zone Shape: Standard Free Form
 Zone Type: Inclusion Exclusion

Rule Name:
 Address:
 Address 2:
 City:
 State:
 Zip code:
 Zone Size: Feet Miles
 Coordinates:
 Grace Period:
 Notify Offender If Violated: Yes No
 Offender Message:

Notification Contacts

Notify Contact on Clear: Yes No

Name	Page	Fax	E Mail	Txt Msg	Update Status
Officer, Joe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Update Pending <input type="button" value="Delete"/>

Contact Name: Pager: Fax: Email: Txt Msg:

Permanent Rule Schedule

All	12am	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12pm	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
-----	------	------	------	------	------	------	------	------	------	------	-------	-------	------	------	------	------	------	------	------	------	------	------	-------	-------

In Figure 2.17, the screen is a continuation of creation of the exclusion zone of the offender.

Figure: 2.18 Create Exclusion Zone, cont.



In Figure 2.18, the screen is a continuation of the creation of the exclusion zone on a google map as the screen shows the demarcated area of exclusion.

Figure: 2.19 Deactivating Hardware

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Home View Tools Help

OFFENDER Offender - Steve Offender [259855]

Quick Search:
 ID1:
 Last Name:
 First Name:
 Search

Recent Offenders...
[Advanced Search](#)
[Enroll Offender](#)

CONTACT

Quick Search:
 Last Name:
 First Name:
 Search

Recent Contacts...
[Advanced Search](#)
[Enroll Contact](#)

Offender General Information Offender Functions

Customer: 3M EM Training
 Level of Supervision: Active 2 Piece (XT-Data)
 Assigned Officer: [Joe Officer](#)
 Enrollment Date: 01/31/2012 1:22 PM
 Custom ID1:
 Custom ID2:
 Name: Steve Offender
 Address: [1838 Gunn Hwy](#)
 City, State Zip code: [Odessa, FL 33556](#)
 Phone Number: (727) 555-5987
 Mobile Number: (727) 555-4447
 Offender Type: Other/Unspecified
 Comments:
 Time Zone: (GMT -05:00) Eastern Time (DST Applies)

Assigned Hardware Information Hardware Functions

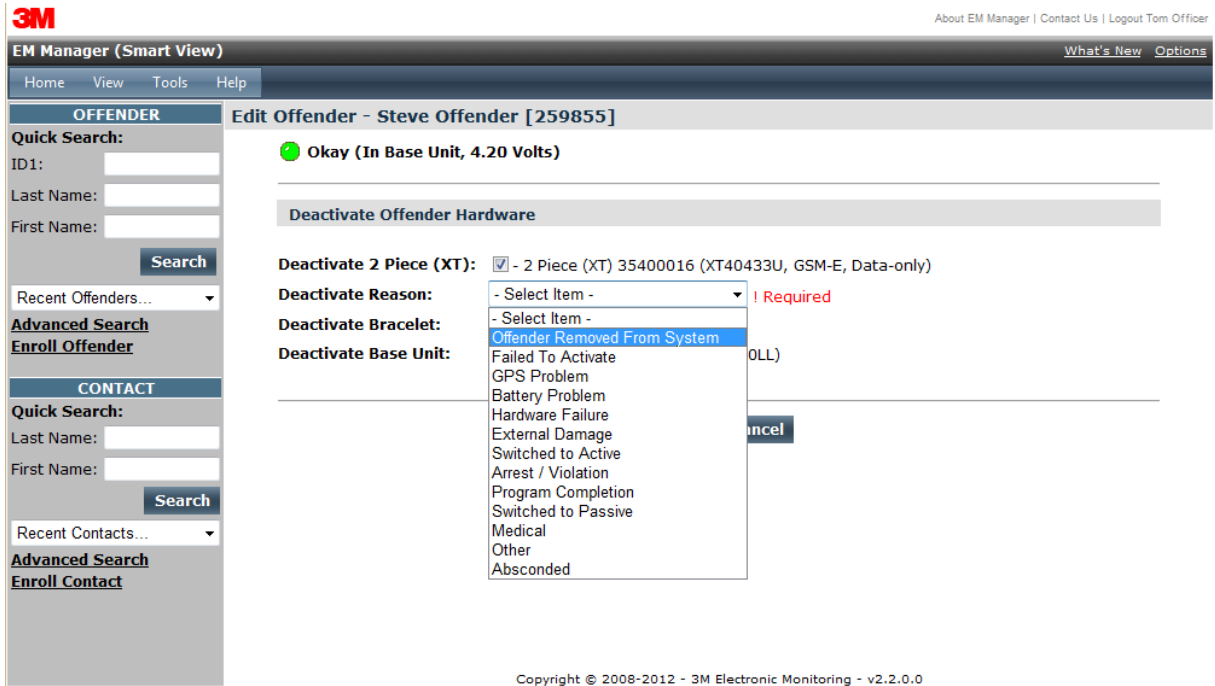
2 Piece (XT): 35400016 (XT40433U, GSM-E, Data-only)
 Bracelet: 200050 (BTX 4433)
 Base Unit: 50400029 (SBU2000LL)

Rule Information Rule Functions

Name	Type	Distance	Grace Period	Has Actions	Status
School	Exclusion	600 ft	00:00:00	Yes	Active
Home	Inclusion (Home)	600 ft	00:00:00	Yes	Active
In Charger	Hardware	N/A	00:00:00	Yes	Active
Bracelet Battery	Hardware	N/A	00:00:00	Yes	Active
Bracelet Gone	Hardware	N/A	00:00:00	Yes	Active
Bracelet Strap	Hardware	N/A	00:00:00	Yes	Active
2 Piece (XT) Battery	Hardware	N/A	00:30:00	Yes	Active

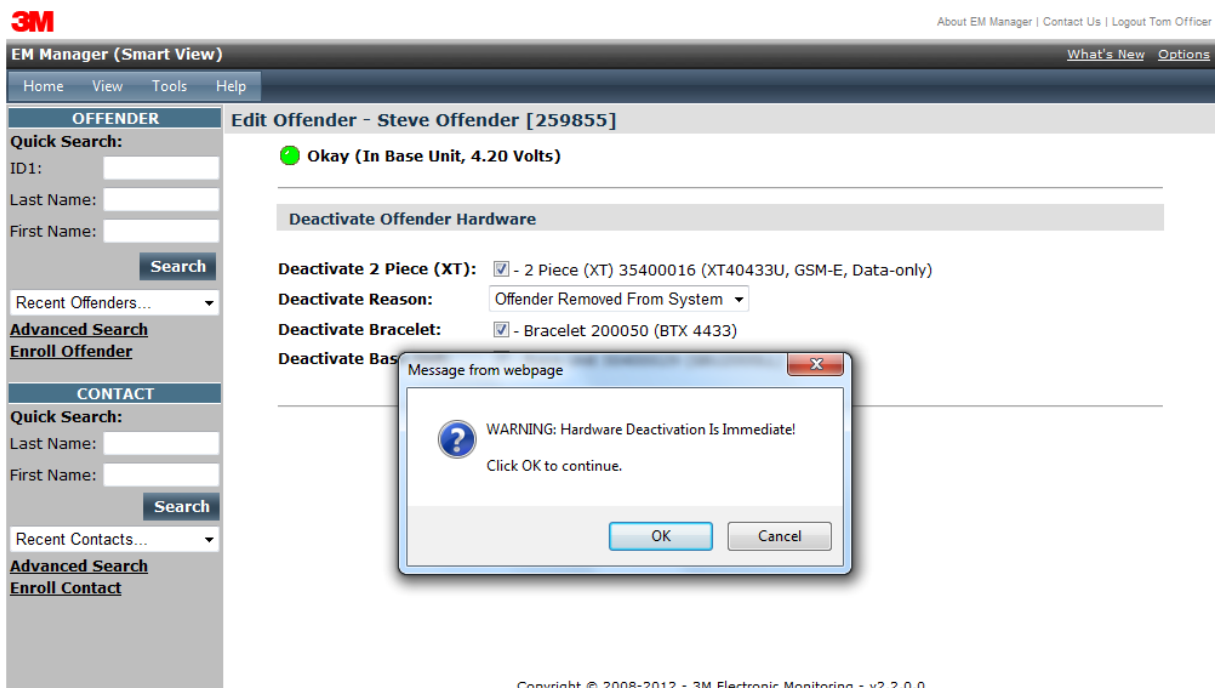
In Figure 2.19, the screen shows the full details of the offender. The red arrow indicates where an official can deactivate the hardware function from the system.

Figure: 2.20 Deactivating Hardware, cont.



In Figure 2.20, is a continuation screen of hardware function deactivation.

Figure: 2.21 Deactivating Hardware, cont.



In Figure 2.21, the screen on hardware deactivation continues.

2.7 Benefits of parolee tracking systems

According to Nagin and Pogarsky (2004) “It may seem paradoxical that monitoring, which has no treatment component, could be effective. One possible explanation is that offenders who are not monitored may have poor impulse control and may be easily tempted by the short-term gain of crime. They may fail to consider future consequences or may believe that the probability of arrest and incarceration is slim”. Whichever, Padgett et al., (2006) outcomes recommend that an ankle bracelet assist offenders to regulate their desire and make an enhanced choices.

2.8 Successful parolee implementations

Drake’s (2009) investigation that indicate that electronic monitoring devices 44,000 are used currently in the United States in tracking offenders. The National Audit Office, (2006) argues that “In England and Wales, over 225,000 offenders have been electronically monitored. The cost to electronic monitoring of home detention was (\$21.95) per day, including time spent by prison, probation and court staff in administering each case and the cost of police in dealing with offender who breached home detention”.

Deputy Minister, Wan Junaidi argues that “the parole system implemented by the Prisons Department of Malaysia recorded a success rate of 98.8 per cent, much higher than those in countries such as the United States, Australia, and Canada. Junaidi said that to date, nine countries had expressed their interest into entering an agreement with Malaysia for the programme, which is to facilitate the transfer of Malaysian prisoners back here, or their citizens in Malaysian prisons, back to their respective countries. The nine countries are South Korea, Philippines, Saudi Arabia, Bulgaria, Iran, Turkey, Azerbaijan, Latvia and Romania”(malaysiandigest.com, 2014).

2.9 Current state of South African correctional centers

2.9.1 Correctional Facilities

According to Africa Check (2017), there are two maximum security in South Africa, who are privately run, Mangaung in Bloemfontein and Kutama Sinthumule in Limpopo and the seven of the 236 operational correctional centers were under renovation and constructional phase as shown in the table.

Table 2.1: Correctional Facilities

South Africans' Correctional Facilities	
Total number of correctional facilities	243
Operational facilities	236
Female facilities	9
Youth facilities	14

Source: Department of Correctional Services (2017)

2.9.2 Inmate population

According to Department of Correctional Services a quarter of inmates are remind detainees in the 2016/17 financial year end, remind detainees are individuals who have been arrested, have been refused or cannot afford bail, and are waiting the start or completion of their trail (Africa Check, 2017).

Table 2.2: Inmate population

	Remand detainees	Sentenced offender	Average inmate population
2012/13	45,730	104,878	153,968
2013/14	44,858	107,696	152,553
2014/15	42,077	115,064	157,141
2015/16	42,380	116,951	159,331
2016/17	43,799	117,255	161,054

Source: Department of Correctional Services (2017)

Minister of Justice and Correctional Services argues that “11,842 foreigners were being held in South African correctional facilities. However, 7,345 had been sentenced and 4,497 were waiting trial, with 1,380 being prosecuted for being in the country illegally. Zimbabweans contains the huge number of (41.5%), followed by Mozambicans (24%) (Africa Check, 2017).”

2.9.3 Racial breakdown

Table 2.3: Racial breakdown

Offenders by race		
Race	Number	Percentage %
Blacks	125,006	79.6
Coloured	28,568	18.2
White	2,559	1.6
Asian/Indian	880	0.6

Source: Department of Correctional Services (2017)

According to the minister of DCS Michael Masutha said that, financial year 2017/18 the estimated cost to house an offender is R133, 805.35. Therefore, considering population of the offenders of 161,054 in 2016/17 financial year, this cost will amount to R21.5 billion for the current financial year (Africa Check, 2017)

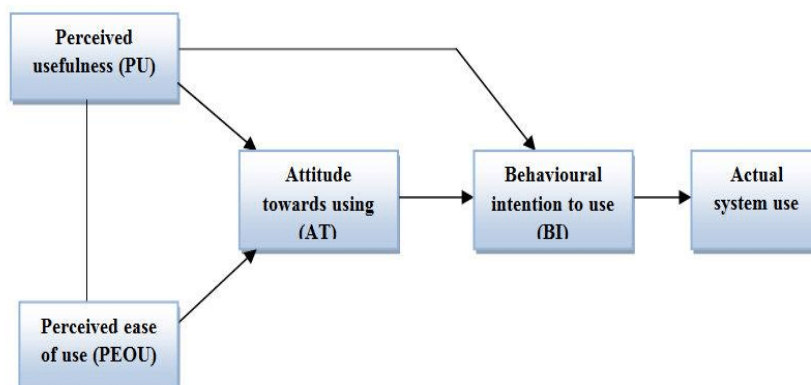
2.10 Adoption Theories

According to Burton and Hubona (2005) studies suggest an estimate the important concerned for numerous researchers successively began of study in information systems would be the adoption and use of Information Technology. Scholars uses theoretical analytical framework to comprehend the influences the adoption of technology. The theoretical framework helps to offer an impression as to understand this research occurrences.

Adoption theories cannot determine of an individual's assessment, whether or not to accept some invention (Straub, 2009). Adoption theory is described as a "micro-perspective on change, focusing not on the whole but rather the pieces that make up the whole." The study acknowledges the presence of other technology adoption theories in the field of Information Systems (IS). Nevertheless, deliberates on some other theories used at times in technology adoption which are TRA, TAM, DoL and UTAUT.

2.10.1 Technology Acceptance Model

Figure 2.22: TAM



Source: (Davis, 1989)

Azjen and Fishbein's (1980) adopted Technology Acceptancy Model (TAM) and the Theory of Reasoned Action (TRA), social psychology theories, to prefect information systems acceptance by users.

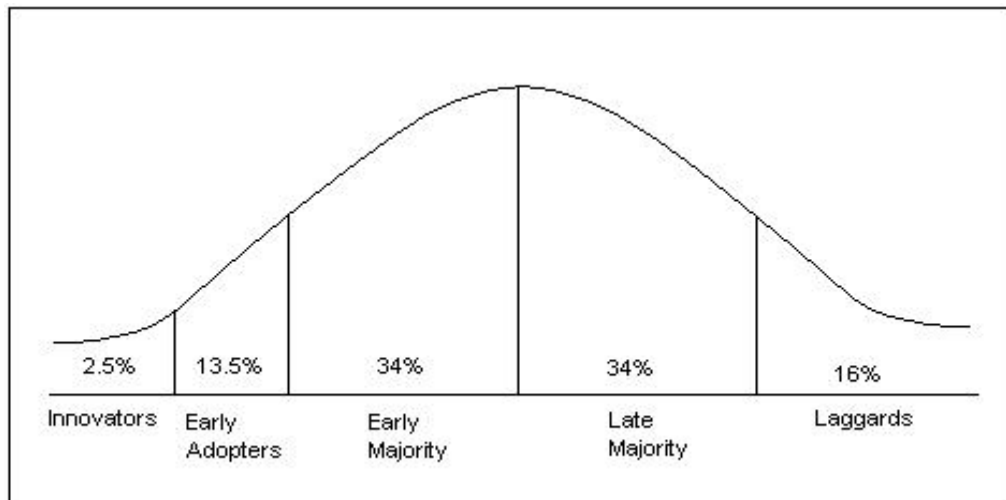
“General the aim of TAM is to afford elucidation of the effects of computer acceptance, to accomplish the elucidation of user behaviour throughout the series of end-user computing and people using....” (Davis, 1989: 985).

An individual's deliberate on use of TAM adaptable after TRA is describe information technology use. According to Davis (1989) that the two factors are perceived ease and perceived usefulness in TAM and technology use to affect an individual's. The approach use, IT affects the of person's goal, concerning the using technology and this, in turn, encouragements definite use. Szajna (1996) argues that subsequently discovering partial provision in this unique model, Davis (1989) released the attitude variable, reviewed the unique TAM to comprise concepts perceived ease of use, perceived usefulness, collaborate intention to use and definite system use.

Therefore, Perceived Usefulness (PU) is defined as the potential users' individual possibility that using precise application system drive escalate his or her business recital inside an organisational setting (Davis et al., 1989). Hence, Perceived Ease of Use (PEOU) is defined as the point to which a potential user supposes the aim systems to be allow the influence (Davis et al., 1989). Meanwhile, TAM positions that PU and PEOU move collaborative goal to use a system that moves the real use. Ma and Liu, (2004) argues that provision for TAM studies has been mixed around all over the world.

2.10.2 Diffusion of Innovation theory (DOI)

Figure: 2.23 DOI Process



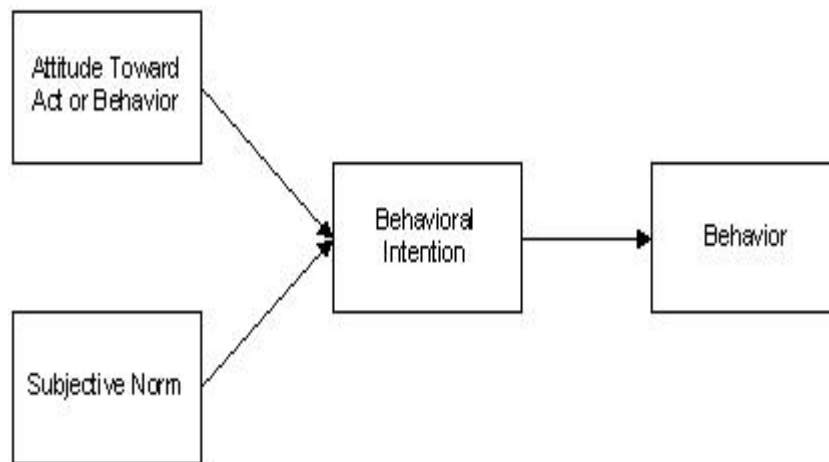
Source: Rogers (2003)

Rogers (2003, p32) says “Diffusion of Innovation (DOI) theory or Innovation Diffusion theory (IDT) or Rogers’ Theory was constructed through meta-analysis of innovations in different contexts, but was mainly used in the agricultural sector to study the diffusion of technology and other farming practices” Agarwal (2000) argues that adopters and characteristic of innovation are extensively involved. The innovation adoption of this concept is a method of doubt discounting over a communication procedure where knowledge about an innovation is delivered to each and every individual community member. There are numerous points that are acknowledged by DIO theory that could be the effect of innovation. These are the key issues that affect the diffusion procedure:

1. the innovation itself,
2. how data around the innovation is conversed,
3. time, and
4. the nature of the community system into which the innovation is existence presented (Rogers, 2003)

2.10.3 Theory of Reasoned Action (TRA)

Figure: 2.24 Theory of Reasoned Action



Source: Ajzen and Fishbein (1957)

It was Ajzen and Fishbein (1957) proposed that “the Theory of Reasoned Action (TRA), which mainly illustrates a person’s interactive tendency, for the purpose of predicting, changing and interpreting an individual’s particular behaviour. The Theory of Reasoned Action posits that individual behaviour is driven by interactive intentions where behaviour intentions are a function of an individual’s attitude towards the behaviour and subjective norms surrounding the performance of the behaviour.”

An individual can exercise the unintended impact behaviour over communication means the approach and subjective norms. The definition of Attitude concerning the behaviour is the positive or negative spirits around the accomplishment a behaviour. Social forces imitate subjective norms when a person is acting a behaviour and his view of whether individuals significant to be people conceded the behaviour could be actioned.

2.10.4 Technology self-efficacy

According to Compeau & Higgins, (1995a, 1995b), “Technology Self-efficacy is the degree to which a person believes that he or she has the skills to action a certain task using the technological device. Further, the determinants of perceived ease of use represent several traits and emotions, such as computer self-efficacy, computer playfulness, and computer anxiety (Venkatesh & Davis, 2000). Davis and Venkatesh, (2004) state that, even if an individual gets information from important referents about how easy a system is to use, it is unlikely that the individual will form stable perceptions of ease of use based on the beliefs of referent others over and above his or her own general computer beliefs and hands-on experience with the system.”

2.11. Theoretical framework for this study

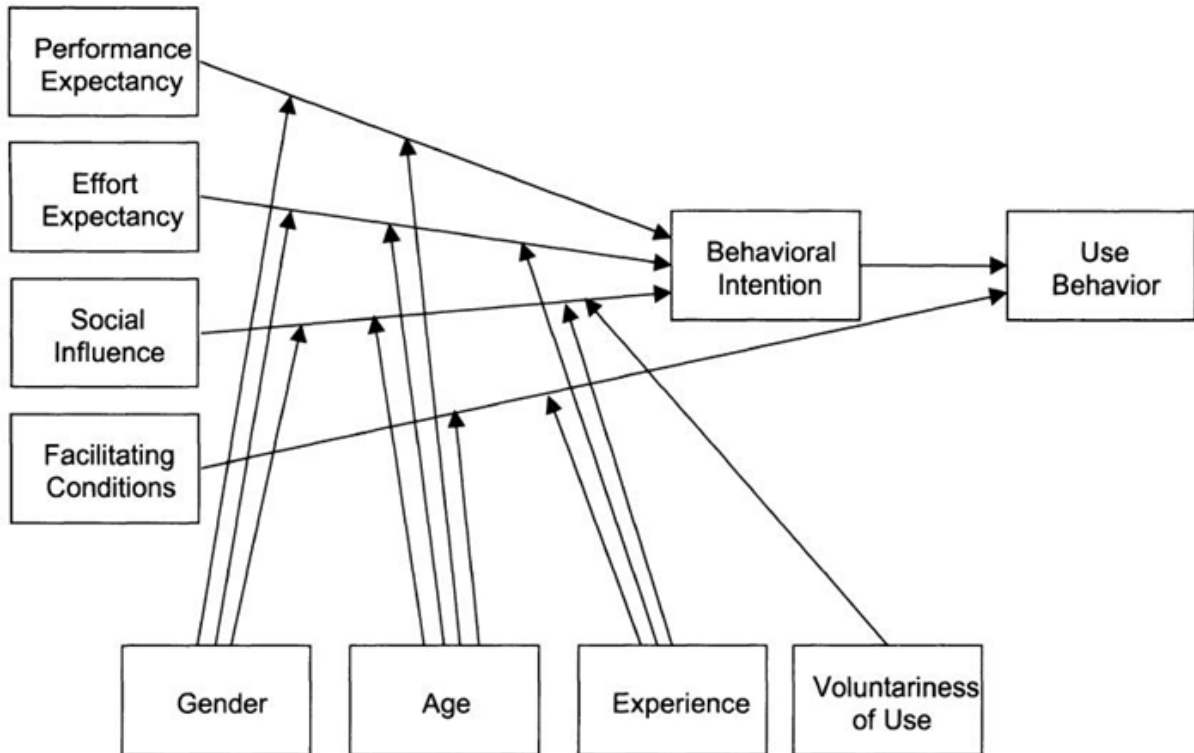
2.11.1 Unified Theory of Acceptance and Use of Technology (UTAUT)

According to Venkatesh et al., (2003) the literature reviews numerous models and theories of technology acceptance model which were introduced and developed years ago.

- *“Theory of Reasoned Action (TRA),*
- *Technology Acceptance Model (TAM),*
- *Motivational Model (MM),*
- *Theory of Planned Behaviour (TPB),*
- *a combining the Technology Acceptance Model*
- *Theory of Planned Behaviour (C-TAM-TPB),*
- *model of PC utilization, the Innovation Diffusion Theory (IDT),*
- *Cognitive Theory (SCT).”*

Venkatesh et al., (2003) says that the independent of the UTAUT continued to conquer an association vision of user acceptance. The subsequent unified model requires of four core appliances or fundamentals of impartial and preparation. Classified the organisation the TUAUT model, decision makers’ use it as a convenient instrument to a degree the likelihood of a new technology.

Figure 2.25: Theoretical framework of hypotheses. Source: UTAUT model



Source: Venkatesh et al (2003)

Nevertheless, new technology is driven by factors of technology acceptance, in the event where the suitable structures could be considered to enable acceptance of a new technology for users. Meanwhile, in early 2003, researchers were progressively challenging UTAUT to elucidate adoption of technology. Carlsson et al. (2006) argues that the use of UTAUT to clarify acceptance of services in Finland, and create the UTPE and effort expectancy (UTEE) remained important, nevertheless not community effect (UTSI).

The UTAUT model concept balances in the setting of acceptance of an online public website log system, and start the UTPE and UTEE measures are similar between dives clusters, UTSI totals might not be equivalent between users with great and little occasional of by website log. Wang and Yang says that the parts that behaviour qualities performs in UTAUT model beneath the setting of online routine savings and start sustenance for the situation.

2.12 Conclusion

On chapter two mainly deliberates on adoption of technology theories in the expanse of Information Systems (IS) research, in precise, UTAUT theory under study aimed at adoption. Developments and aspects that impact the adoption of technology are better discovered by selecting UTAUT model. The attributes will determine whether other theories should be adopted. In South Africa an electronic monitoring system uses four UTAUT attributes to evaluate the factors the influent the adoption.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

Chapter three deliberates on the theoretic framework also on the methodologies adopted for the study. The study highlights the methodology adopted to achieve the goal of the research. The techniques followed in selecting the sample unit and the collection of data using a questionnaire and interviews are outlined.

3.2 Research design

Research design is a well-known idea of gathering of information in the realistic study intended at responding to particular research question, neither by, trying a specific theory. Sampling and data analysis is a suitable idea for research design and data research (Battacherjee, 2012).

3.3 Research philosophy

Research attitude is a confidence around the method in order data almost a occurrence could be collected, analysed and used. Kroeze (2011: 1) states that “the term philosophy is sometimes used in a very wide sense to describe any view point, value or belief”. Saunders et al. (2009: 107) say that “the continuation of the study idea narrates to the progress of information and the environment of the information.” According to Meyer (2009:35), “the most relevant philosophical assumptions are those that narrate to the underlying epistemology which guides the research”. Galliers (1991) argues that there are number of major studies beliefs that has been recognised in the Western practice of science, specifically: positivist (occasional named scientific) and explanatory.

This study, falls into explanatory hypothesis since it pursues to achieve a sympathetic aspects that might inspire the adoption of technology inside the Department of Correctional Services into the setting of electronic monitoring of parolees. According

to (Cohen et al, 2007) the research study appealed through an apprehension aimed at individual and pursues to know an individual human world of capability. Bhattacharjee (2012), argues that, if a researcher have faith in that the finest method to study social imperative is over the strict explanation of participants comprised, formerly they are using an explanatory hypothesis.

According to Mourine (2013) “the aim of interpretivism is to understand the individual experiences of those being studies, how they think and feel and how they act/re-act in their habitual contexts. The interpretation of meaning will be made by both the research participants and the researcher”.

3.4 Research Approach

Although, the inductive approach, “data are collected and theory developed as a result of the data analysis.”, Saunders et al. (2009: 126) observation is that “if you are particularly interested in understanding why something is happening, rather than being able to describe what is happening, it may be more appropriate to undertake your research inductively rather than deductively.”

For example, Brunner (2006) perceives the paradigm as a mutually recognised description or description of scientific methods with assertions; however Burrell and Morgan (2003) suggest that paradigms are “essentially different expectations regarding the nature of the social science and the nature of society, that is, the ‘commonality of perspectives which binds the work of a group of theorists together’”. Fong (2006) argues besides of a paradigm present a corrective atmosphere, whose essential were thought and communal thru expects in the field.

Entman (1993:56) describes research paradigm “as a general theory that informs most scholarship on the operation and outcomes of any particular system of thought and action”. Chen, (2005:63) imagines a research paradigm as a “dynamical system of scientific works, including their perceived values by peer scientists, and governed by intrinsic intellectual values and associated citation endurance and decay.”

Ponterotto (2005) argues that “a research paradigm is the “location” of the inquiry within the four different parameters of the philosophy of science, namely ontology,

epistemology, axiology, rhetorical structure and methodology. These four parameters together determine the methodology of a scientific inquiry. Ponterotto's definition is used in this study as it encompasses the acceptability of a theory within a dynamic scientific system by locating it within the different parameters."

3.5. Qualitative research

Myers (2009) believes that qualitative research must be aid to learn social and cultural occurrences in complicity through an emphasis on writing. The study pursue to identify the interpretations and perceptions of parolees, monitoring officials' into the adoption of the electronic monitoring systems in the Department of Correctional Services in South Africa.

Strauss and Corbin (1990) says, that any type of research study that does not ending up with the statistic techniques or any measures of credentials is qualitative research. However, Denzin and Lincoln (2005) argues that "qualitative is research situated activity that located the observer in the world." According to (Newman, et al., 2003), the method qualitative research is formed to talk to issues of meaning, interpretation and social fashioned authenticity. This research elected qualitative paradigm to ensuing motives:

- (i) The research question: Which factors influence the adoption of electronic monitoring system of parolees in South Africa?
- (ii) The research aspects on human environment and feelings alongside an improvement (in terms of parolee's electronic monitoring systems), in a manner electronic monitoring systems in South Africa might prolux, be accepted and practice by parolees, monitoring officials in the Department of Correctional Services.

3.6 Quantitative research

Quantitative research is a method concerned with data collection and analysing information that is organised and could be signified statistically. The main reason for the use of quantitative would be to builds precise and consistent measurement that allows for statistical analysis. According Cobb and Moore (1997), quantitative data are, nonetheless, “not just numbers, they are numbers with a context” and greatest working statisticians approve that information of the setting is desirable to convey out uniform a virtuously practical part efficiently, (Pfannkuch and Wild, 2000).

The research is quantitative and data was collected in the form of structured questionnaires. Gelman and Hennin (2015) claim that it ought change outside the conversation of objectivity and partiality in statistics and “replace each of them with broader collections of attributes, with objectivity replaced by transparency, consensus, impartiality and correspondence to observable reality, and subjectivity replaced by awareness of multiple perspectives and context dependence.” Nevertheless, it’s significant to communication that they do not afford vision into why individuals reason, feel, or act in confident techniques.

3.7 Research Strategy

Marshall and Rossman (2011), argues that research strategy assist researcher to accomplish their aims and objectives of their research. Strategy will allow the directions the research will take into answering the research questions and the means of collecting data to carry the study. Meanwhile, Yin, (2003) describes a case study as an “*empirical enquire that investigate a contemporary phenomenon within its real-life context especially when the boundaries between phenomenon and context are not clearly evident.*” Case study strategy was adopted, hence the research is qualitative by its nature.

3.8 Research Site

The research was conducted in South Africa, Western Cape, Cape Town Metro Municipality; the Department of Correctional Services was chosen, and two management areas where data were collected (Goodwood Management Area, Pollsmoor Management Area).

3.9 Unit of Analysis

The unit of the study is Department of Correctional Service in South Africa, focusing on the officials using the electronic monitoring system to monitor parolees subjected to the system in two correctional centres Bellville Community Corrections and Cape Town Community Corrections.

3.10 Research Population

Research population according to Mouton (1996:134), is a pool of entities, occasions or persons distributions joint appearances or assertiveness that must be studied by an investigator. Research population points to combination of fundamentals from either a lesser part will be nominated. Welman (2005:55) says that “out that it is impractical and uneconomical to include all members of the population in a research project; hence the need for a population sampling where a representative portion is selected and used for the study to generalise conclusions”.

The population for this research was Cape Town Metropole in the Western Province (Goodwood Management Area and Pollsmoor Management Area) sites. The researcher used a random sample of the community correction expert, users of the parole electronic monitoring system; hence the research population for this study was monitoring correctional officials.

3.11 Research Methodology

According to Ortega, (2005) “While the discussion about the various aspects of the philosophy of science have been done in isolation, in practice they are intertwined and have a very fine line between them. For instance, researchers are always choosing the best approach in order to produce evidence (method), for providing

answers to a set of questions (ontology), on the basis of what is agreed-upon as knowledge and can be taken as evidence (epistemology) by drawing upon consensual values worth understanding and transforming (axiology) and communicating the evidence using structured approaches to the wider community (Rhetorical Structures)".

Research Methodology could be utilizing these different philosophical aspects in research. Unlike positions occupied by investigators in their submission and considerate of the philosophical expectation and foundations, research of taking confidentiality within diverse models. For example, Burrell and Morgan (2003) recognise four research paradigms:

1. *"Functionalism"*
2. *"Interpretivism"*
3. *"Radical Structuralism"*
4. *"Radical humanism"*

By the study methodology features, investigators take derive active thru three study paradigms – quantitative paradigm, qualitative paradigm and the mixed-methods or multi-method paradigm (Creswell & Plano Clark, 2007) each dwindling in the range between functionalism to radical humanism, affording to the Burrell and Morgan is arrangements. Furthermore, epistemological arrangements remains positivist, interpretive, critical social theory, constructivism and social constructivism (Klein & Myers, 1999). This arrangement have to remain perceived by other investigators (For instant, Weber, 2004) like plain affectation.

3.12 Research Methodology used in this study

This study required to comprehend the adoption and non-adoption of electronic monitoring system of parolees in correctional services situations as they logically occur and consequently, complex in their business in order to bring as much detail as likely. The research sought to get a better understanding of the factors, issues, and answer the research question.

The qualitative method distributed through the ontological paradigm viewing the imperceptibility of the realism close electronic monitoring system of parolee's

adoption with the aim of understanding the factors affecting electronic monitoring system of parolee's adoption in directive to produce theories and understand import from the considerate.

3.13 Research Case

The study will used as the main case an electronic monitoring system of parolees in the Correctional Services of Cape Town Metro. Cape Town is the mother city of South Africa and hosts many correctional centres where electronic monitoring of parolees has been implemented. The research was conducted in two correctional centres in Cape Town.

3.14 Sampling

A non-probability sampling technique will served as a base to select the unit of analysis. In non-probability sampling, the selection of units of analysis is based on non-random criteria (Bhattacharjee, 2012:69). The research used the purposive sampling technique. The sample comprised experts from community corrections at Bellville and Cape Town who were interviewed. The common criteria for selection included: parolee's electronic monitoring officials who had received electronic monitoring system training known to be using technology in their EM to monitor parolees. The sample size was guided by the concept of information fullness, which is probable to happen premature with great examples in qualitative research (Guest et. al., 2006; Glaser & Strauss, 1967; Ritchie, Lewis & Elam, 2003).

The sample was recruited by means of answering the questionnaire. Only correctional officers who are working with the system were allowed to participate in research. The correctional officials were recruited from their respective centre to be interviewed.

3.15 Data collection methods

According to Yin (1994), "data collection involves three core principal, apart from the designed method, which include: using multiple source of evidence, creating a case study database, and maintaining a chain of evidence. Qualitative data collection entails using rich and diverse data to answer questions about variability and

complexity of human life, therefore Yin (1994) provides six sources of data collection” as follow.

- *Documents*
- *Archival records*
- *Interviews*
- *Direct observations*
- *Participants observation*
- *Physical artifacts*

The important thing about research is to know all the information gathered from where when need as sources could be utilised for a particular research (Yin, 1994). in this research, numerous information bases need to used, such as,: Interviews open-ended, fixed, planed and reviews might be potential.

3.16 Validity

The validity raises to the degree to which an observed quantity sufficiently imitates the actual importance of the idea beneath construction (Babbie & Mouton, 2001:122). There are criteria that help ensure validity, such as expression rationality, what mentions to whether an pointer appears to be a sensible quantity of its fundamental constructs (Bhattacharjee, 2012: 56), and satisfied validity, raising to how considerable a degree covers the variety of senses comprised inside a thought (Babbie & Mouton, 2001:121). These criteria were used to ensure validity within the research.

3.17 Reliability and Bias

“Reliability is the degree to which the measure of a construct is consistent or dependable” (Bhattacharjee, 2012: 56). Improve the consistency of the collect data, the approaches for information assembly used in this study did not employ ambiguous questions, and used simplified wording in order to facilitate answers from the participants. The questions were as clear as possible and were questions participants were most likely to know the answers to (Babbie & Mouton,

2001:121).The investigator recognises that the selection methods influence be question to some bias. Nonetheless, best efforts were applied to perform an objective data analysis.

3.18 Data Analysis Approach

It is vital for researcher to be intelligent to use data composed, also analysing data also essential. Hence, Myers, (2009) argue the point that qualitative study design and data analysis approach follows data gathering. Miles and Huberman (1994: 10) point out that data analysis is the procedure that contains of “data reduction, data display and conclusion drawing”. Literature identifies number of techniques that are available to be used. However, thematic analysis was deliberated appropriate analytical technique for this study.

3.18.1 Thematic Analysis

Myers (2009: 175) argues that “there is no such thing as one approach that is better than all the others, each analysis approach has its advantages and disadvantages.” Literature revels some other qualitative analysis techniques, which are narrative analysis, grounded theory. Nonetheless, through out literature studying and successful completing similar analytical techniques, thematic analysis remained perceived as the furthestmost applicable in this study. According to (Alhojailan (2012) and Boyatzis (1998), thematic analysis is used to analyses organisations and to current themes that are connected to data and supplementary demonstrate information in excessive element, while dealing with diverse subject via interpretation. Fereday and Muir-Cochrane (2006:4) argues that data collected from interviews form a basis for information needs analysis and activity analysis, which helps answer some of the research questions.

Within data thematic analysis is a method of designs known, in this regard themes that developed are converted into categories of analysis. It is a process for analysing and coding qualitative data. Thematic analysis was used to analyse data from interviews and questionnaires. The themes emerged from the analysis will help determine the type of information that could be included on the information that

should be made available through the service to be designed. Braun and Clarke (2006) identified the six guide stage to analyse interview data using the thematic analysis as follow:

Step 1: Familiarising with the data – reading and rereading of the data, noting down initial ideas.

Step 2: Generating initial codes - coding interesting features of the data

Step 3: Searching for themes – collating codes into potential themes, gathering all data relevant to each potential theme.

Step 4: Reviewing themes – check in the theme work in relation to the coded extracts (Level 1) and the entire data set (Level 2).

Step 5: Defining and naming themes – On-going analysis to refine the specific of each theme and overall story the analysis tells; generating clear definitions and names for each theme. The researcher went through each category (theme) to identify sub-category and this was done until it was not possible to subcategorise or group theme anymore.

Step 6: Producing the report - selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature.

3.19 Ethical consideration

The ethical concerns needed for this research were applied: primarily, every participant had to provide acquainted agreement to contribute and their privacy were assured; moreover, every participant were to understand that their information details will be protected and what will transpire to their information after interview data is finished; again every participants were prepared attentively of the condition that the research was not compulsory, and they can pull out at any time from it they desire.

3.20 Informed Consent

An approval was granted to interview the electronic monitoring system of parolees by the Department of Correctional Services in the Western Cape two management areas (Pollsmoor and Goodwood Community Corrections offices, before it commenced. The research aim and objectives were explained in the approval communication that was granted by the Department of Correctional Services to the research which clarified the purposed of the study. Interviews were arranged after the approval communication was sent to all the Area Commissioners involved and to the Regional Commissioner of the Western Cape. Community Corrections of both Management Areas of the interviews will be conducted were informed that the information need would be merely for academic reasons.

CHAPTER FOUR: FINDINGS AND DATA ANALYSIS

4.1 Introduction

In this section, the statistical survey information presentation are divided into two sections, descriptive analysis and factor analysis. The researcher examined and unpacked the statistical data findings based on the answers to the questionnaires in relation to underpinning hypothetical framework. The analysis derived from the survey questionnaires and interviews. Three selected community corrections centres and the entire population responded. The questionnaire had together open-ended and closed – ended questions. The data presentation addresses these factors that affect adoption of technology by public services employees:

- Performance expectance.
- Effort expectancy.
- Social influence.
- Facilitating conditions.
- Behavioural intention.

4.2 Descriptive analysis

Expressive indicators is the term specified to data analysis that assist pronounce, show or review statistics in an expressive manner, for example, designs that could appear after the statistics. Nevertheless, agree one to make finishes concerns any theories, expressive statistics may not. They are simply away to describe our data. The underpinning theoretical framework are aligned the survey results and deliberate in detail below.

According to (Venkatesh et al., 2003) the impartial of the UTAUT was to attain a unified observation of worker acceptance. Unified model results in entails of four essential modules or elements of intent plus practice. Managers used the UTAUT model tool to measure the probability of acceptance in the new technology inside the organisation. Hence, it is very important to know the aspect that motivate acceptance of a new technology so that suitable structures that could intended to enable acceptance of a new technology by users. “The theoretical framework formed for this

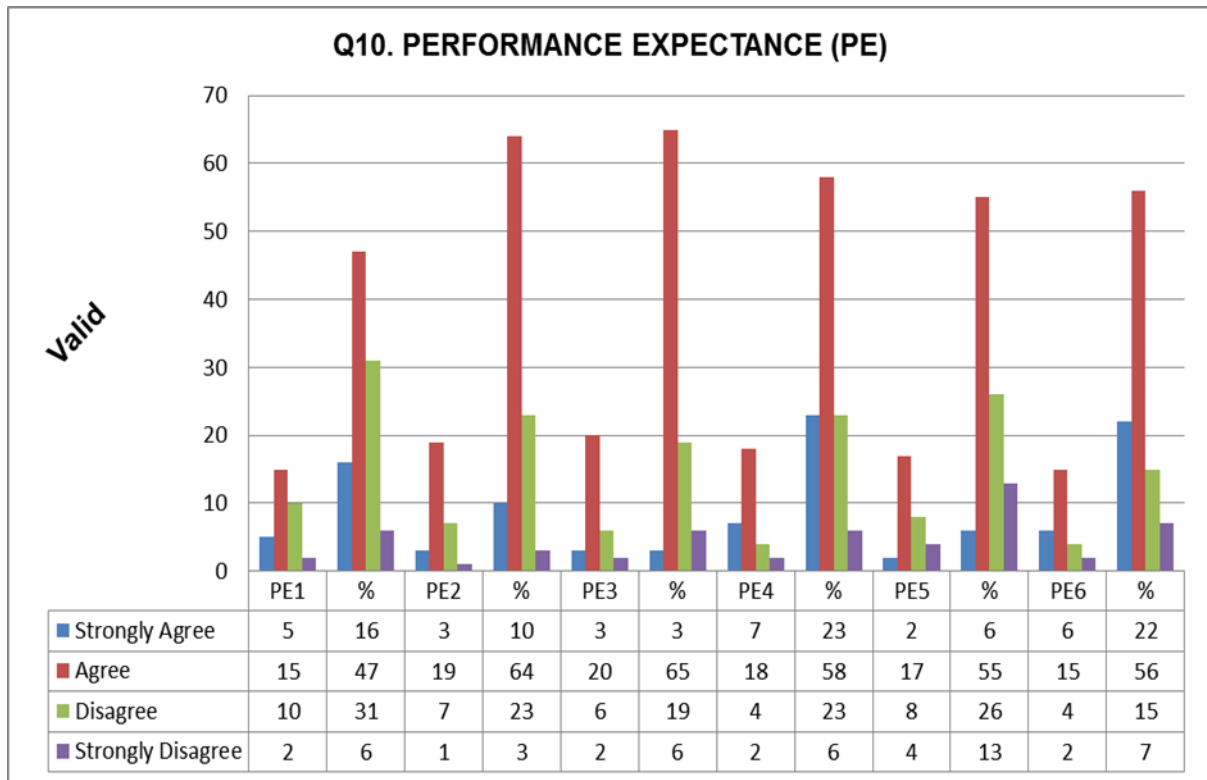
research is based on the Venkatesh et al., (2003) UTAUT theory. The four theoretical constructs used in the study are; Performance Expectance, Effort Expectance, Social Influence and Behavioural Intention.”

4.2.1 Performance Expectance (PE)

Performance expectancy (PE) could be defined as “the degree to which the user expects that using the system will help him or her to attain gains in job performance” (Venkatesh et al., 2003:447). More concretely this means that individuals remain further expected to adopt new technologies when they consider this will aid them to achieve their work.

Table 4.1 presents validity of the degree and the percentage to which performance expectancy is perceived by monitoring official of parolees. Table4.1 below presents the results of six questions asked as follows; 1. Adoption of EM systems improves the monitoring process. 2. EM facilitates the easy flow and access to the offender information details about his/she where about quickly.3. Adoption of EM systems enhances collaborative with the community correction systems and the admission and release systems.4. The adoption of EM systems in the department helps to monitor and handle the parolee’s tasks effectively.5. The adoption of EM systems within department aids to increase the performance of the monitoring official.6. The adoption of EM systems in IT operations will support the EM process.

Table 4.1: Performance Experience



Based on the respondents on PE1, out of 32 respondents 47 percent agreed that adoption of electronic monitoring systems improves the monitoring systems. Meanwhile 16 percent of the monitoring officials strongly agreed making 63 percent of monitoring official who agreed in principle. Regarding PE2, 64 percent agreed that electronic monitoring systems facilitate easy flow and access to the offender is information details about his/her whereabouts quickly and 10 percent strongly agreed. That makes 74 percent of monitoring official agreeing.

Out of 31 respondents on PE3, 65 percent agreed that adoption of electronic monitoring systems PE enhances collaboration with the community correction systems and the admission and release systems. Even though 19 percent of the officials disagreed and 6 percent strongly disagreed, the total number is less than half of the population. Of respondents to PE4, 58 percent of the officials agreed that the adoption of electronic monitoring in the department helps to monitor and handle the parolee's task effectively, and 23 percent of the official strongly agreed, making 81

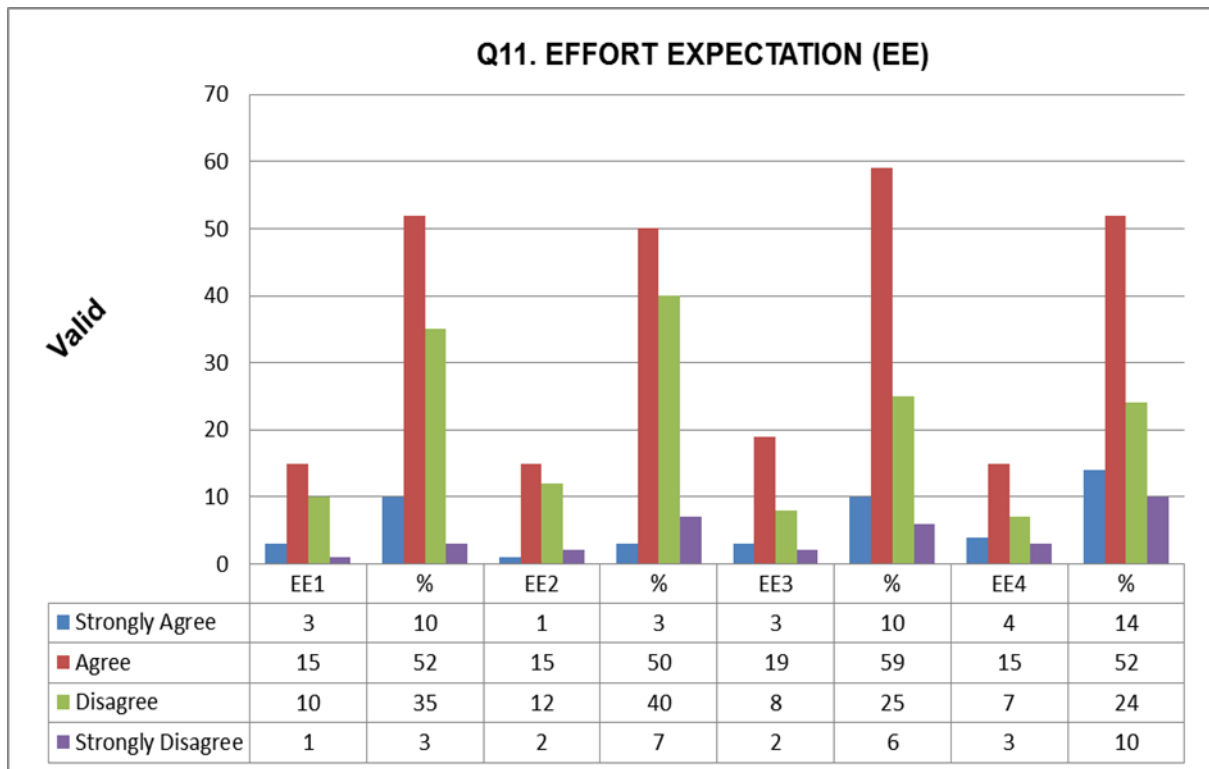
percent of the total population. Only 23 percent of the officials disagreed, including 6 percent of those officials who are strongly disagreed.

Based on the respondents to PE5, 55 percent agreed that the adoption of electronic monitoring systems at the department aids to increase the routine of the monitoring officials and 6 percent of the response strongly agreed, that make 61 percent of the total population. However 26 percent of the officials disagree including 13 percent who strongly disagreed. Regarding PE6, 56 percent agreed that the adoption of electronic monitoring systems in IT operation will support the electronic monitoring systems process and 22 percent strongly agreed to that statement that is 78 percent of the officials. However 15 percent of the officials disagreed and the statement with 7 percent strongly disagreed.

4.2.2 EFFORT EXPECTATION (EE)

Effort expectancy (EE) would be described as “the degree of ease associated with the use of the system” (Venkatesh et al., 2003:450). In table 4.2 presents and the percentage to which the effort expectancy was measured by asking four questions to the monitoring officials of parolees as follows. 1. Interaction with EM systems is pure and reasonable. 2. An EM system remains basically easy to use. 3. EM systems make monitoring easier. 4. EM system makes it easier to interact with all my parolee offenders at any time.

Table 4.2: Effort Expectancy



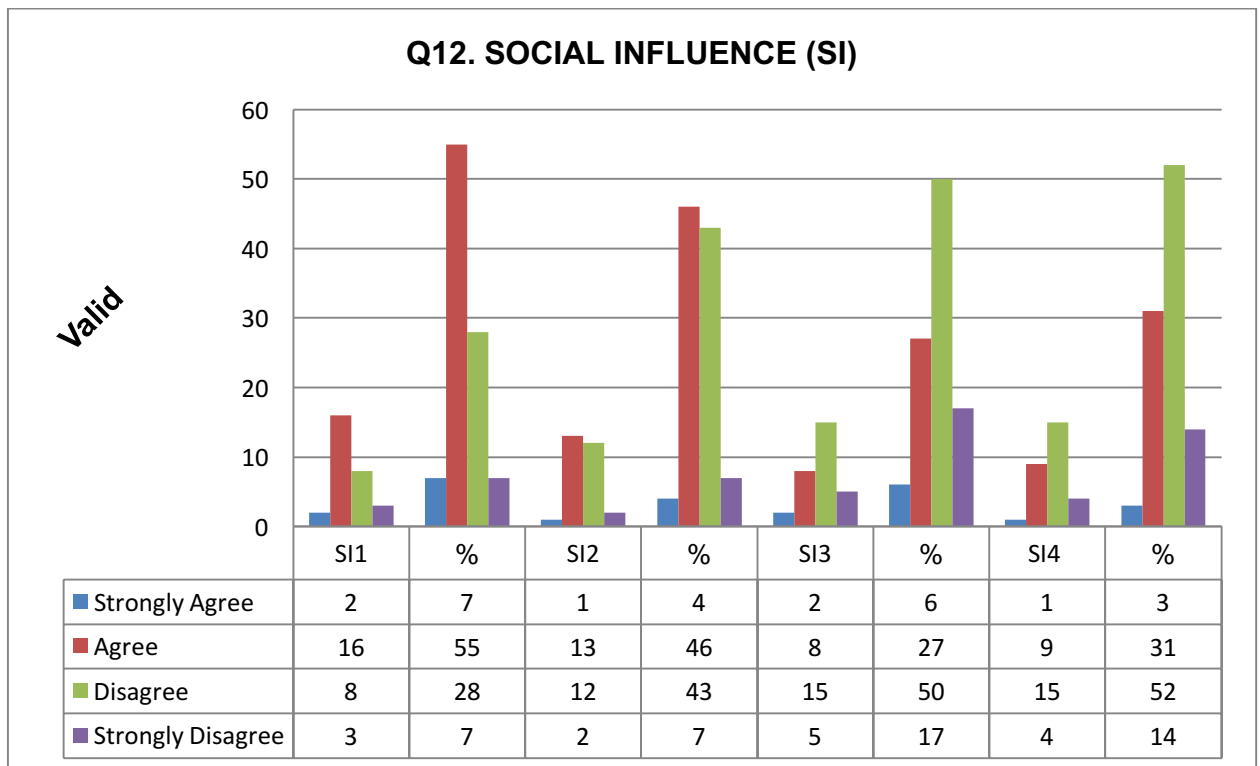
Base on the respondents to EE1, out of 19 officials 52 percent agreed that interaction with EM systems is clear and understandable followed by 10 percent who strongly agreed with the statement, giving a total of 62 of the population. However, the 35 percent of the respondents disagreed including 3 percent who strongly disagreed with the report. Half of the monitoring officials of EE2, agreed that an EM system is basically easy to use followed by 3 percent who strongly agreed with the statement. In this case, 47 percent of the population disagree and strongly disagreed with the report with 3 percent of the population of the officials being the only divider.

With respect respondents on EE3, 59 percent agreed that EM systems make monitoring easier and 10 percent strongly agreed. Thus 69 percent of the officials agreed with the report. However, 25 percent of the respondents disagreed. Six percent strongly disagree with statement, indicating 31 percent of the officials' disagreed. On EE4 52 percent of the respondents agreed with a 52 percent, that EM systems makes it easier to interact with all parolees at any time and 14 percent strongly agreed with that statement. In total, 66 percent of the population agreed with the statement that EM make interaction easy. The rest of the officials did not think that is the case. Those who disagreed and strongly disagreed, made up of 34 percent.

4.2.3 SOCIAL INFLUENCE (SI)

Social influence (SI) can be described as “the degree to which an individual perceives that important others believe he or she should use the new system” (Venkatesh et al., 2003:451). Table 4.3 presents the valid degree and the percentage in which social influence can be measured by asking four questions in relation to the new systems, 1. Correctional Services management support EM systems with technology tools. 2. My colleagues think I should use EM systems to do monitoring duties. 3. Offenders prefer EM systems because it enables them to be with the family and to be able to provide support to them. 4. My supervisor at work impacts my performance and consider that I should make usage of EM to do my monitoring duties.

Table 4.3: Social Influence



Based on responses to SI1, 55 percent agreed that correction service management support EM systems with technological tools and 7 percent strongly agreed with the statement of management support. Thus, 62 percent of the population agreed. However, 28 percent of monitoring officials disagreed with the statement of support from the management of DCS, and 7 percent of the officials strongly disagreed

saying to saying management of DCS do not support EM with any technological tools.

Of respondents to SI2, 46 percent agreed that colleagues think they should use EM systems to do monitoring duties. Only 4 percent strongly agreed with that statement to total up to 50 percent agreed and the other 50 percent including those who disagree and strongly disagreed with the statement, SI2 says in principle the population is divide into half in terms of using EM to do the monitoring duties.

On SI3, 50 percent of respondents disagreed that offenders prefer EM systems because it enables them to be with their family and to be able to provide support to them and 17 percent of the officials strongly disagreed with the statement. This means on SI3 and that would total to 67 percent of the officials who disagreed. The remaining 33 percent of the respondents agreed.

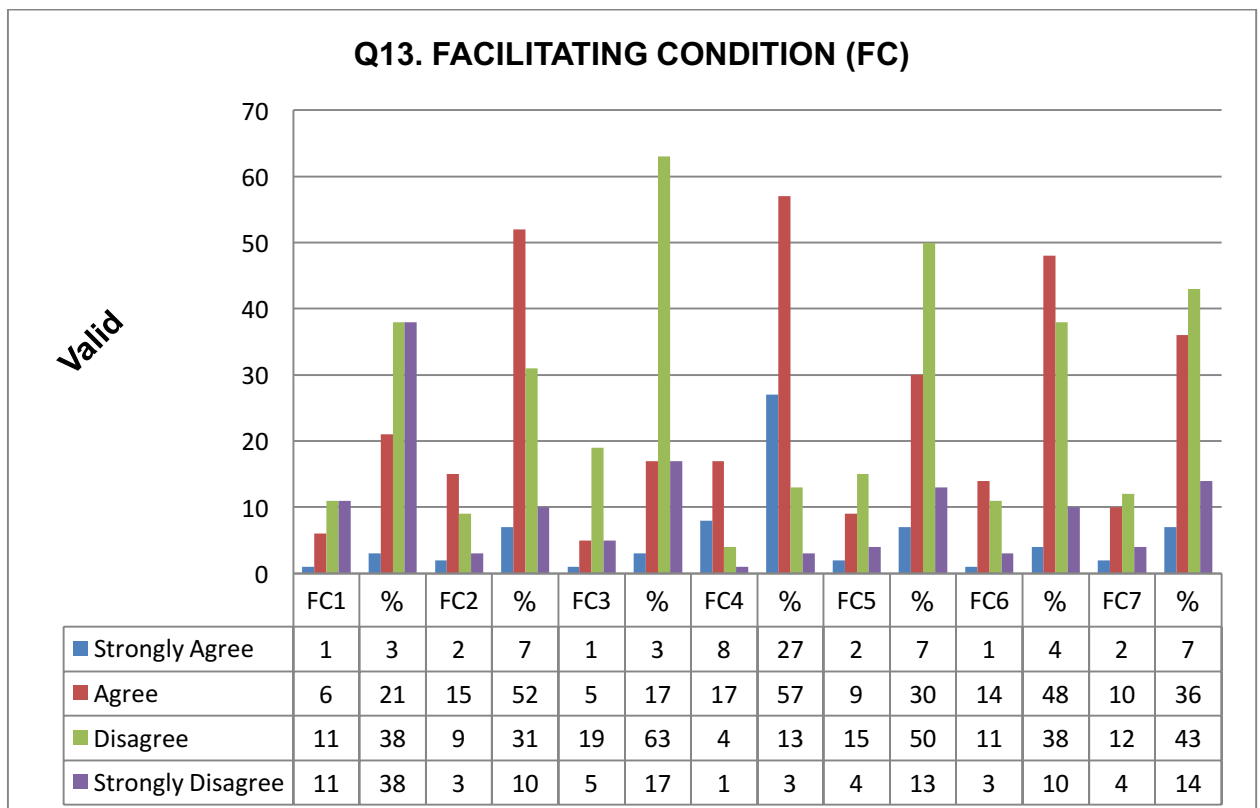
Regarding on SI4, 52 percent disagreed that supervisors at DCS influence the officials behaviour that they should make use of EM to do monitoring duties 14 percent of the officials strongly disagreed with the statement. This means 66 percent of the respondents disagreed that supervisors have any influence on officials. About 34 percent agreed and strongly agreed that supervisors have influence on officials.

4.2.4 FACILITATING CONDITION (FC)

Facilitating conditions is defined “the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system” (Venkatesh et al., 2003)

Table 4.4 presents the validity of the degree and the percentage in which facilitating condition on new systems are measured by asking the following seven questions: 1. An EM system is affordable. 2. EM has idea infrastructure for monitoring of parolees offenders. 3. The Department of Correctional Services has high speed internet line, and uninterrupted services. 4. As a parolees monitoring official, do you think you need have necessary knowledge to use EM systems? 5. Difficulties with EM systems parolee monitoring officials do get all the necessary assistance needed on time. 6. The DCS emphases on new IT system ventures, which target to growth information speed and data security. 7. Systems, technological services and applications and services offenders DCS remain uninterruptedly efficient to keep speed with technological developments.

Table 4.4: Facilitating Condition



Based on the responses to FC1, 21 percent of the respondents agreed that an EM system is affordable and only 3 percent strongly agreed. Thirty-eight (38) percent of each for those who disagreed and strongly disagreed, indicating 76 percent said an EM system is not affordable. For, 52 percent agreed that EM has idea infrastructure for monitoring of parolees offenders and 7 percent of officials strongly agreed with the infrastructure idea. Thirty-one (31) percent disagreed with the idea of EM infrastructure while 10 percent of the officials strongly disagreed with that statement about the infrastructure idea.

On FC3, 17 of the respondents agreed that the Department of Correctional Services has a high-speed internet line and uninterrupted services, 3 percent strongly agreed with the statement. Sixty-three (63) percent of the officials disagreed with the statement and 17 percent strongly disagreed, which totals up to 80 percent of the officials who said the DCS internet speed is very slow.

Of the respondents to FC4, 57 percent agreed that as parolees, monitoring officials they do think that one needs to have necessary knowledge to use EM systems, while 27 percent strongly agreed with the that statement that officials do need necessary skills to work on the EM systems. However, 13 percent disagreed that they need necessary skills to work on the EM and 3 percent strongly disagreed with the statement on skills knowledge.

Fifty (50) percent of the officials responding to FC5 disagreed that difficulties with EM systems, parolees monitoring officials do get all the necessary assistance needed on time, while 13 percent strongly disagreed with the statement that to they don't get any necessary assistance needed for the EM systems. However, 30 percent agreed they do get the necessary assistance on time and 7 percent strongly agreed with the statement that they do get all the necessary assistance.

Forty-eight (48) of respondents FC6agreed that the Department of Correctional Services focuses on new IT systems projects, which are aimed at increasing data speed and information security, while 4 percent strongly agreed with that statement of new project focus. However, 38 percent disagreed, while 10 percent strongly disagreed, making 48 percent, which is less than 4 percent to equal the number with

those official who agreed, in did it is a small margin that separate the two official views new projects and security of information.

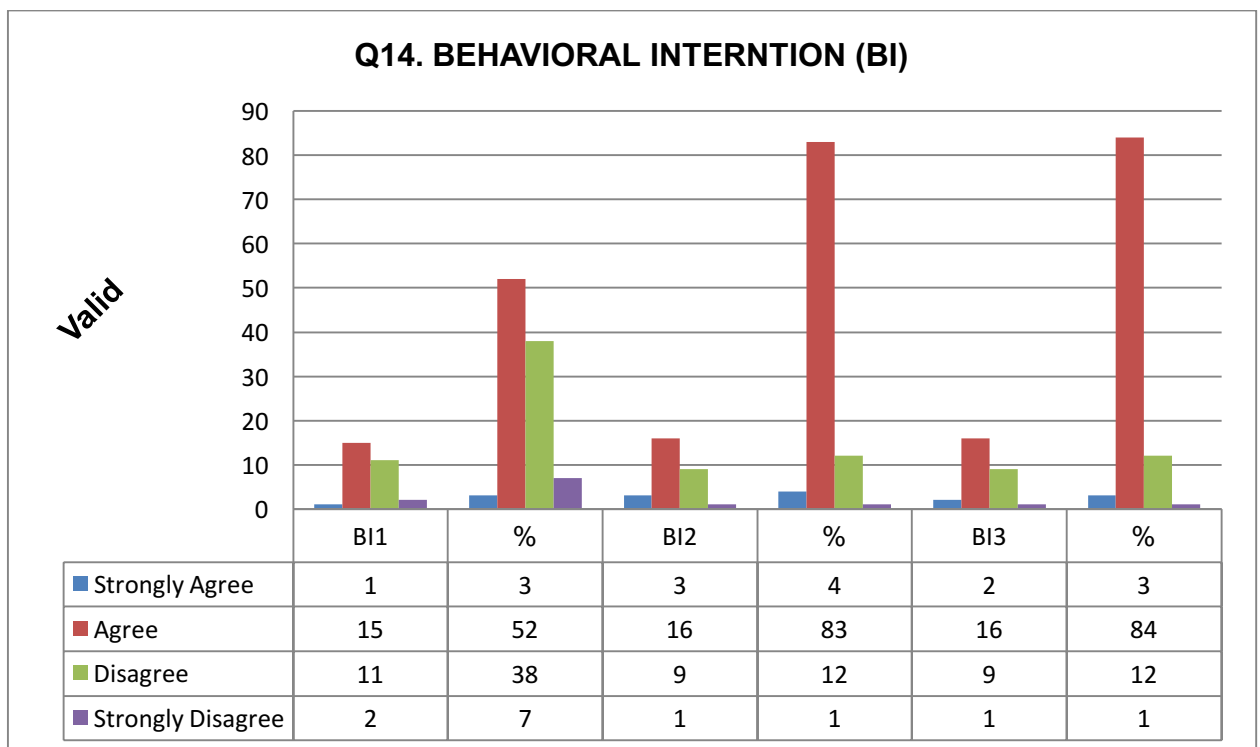
Forty-three (43) percent of the official responding to FC7 disagreed that DCS systems, technology services and applications and services are continuously updated to keep up with the pace with technology, while fourteen (14) percent of the officials strongly disagreed with that statement. This amounts to 57 percent of the officials who disagreed and strongly disagreed. Thirty-six (36) percent agreed that the DCS is up-to-date with latest technologies and 7 percent of officials strongly agreed that the DCS has the latest technologies application, services, and infrastructure on board.

4.2.5 BEHAVIOURAL INTERNTION (BI)

“Behavioural intention (BI) is described as an individual's perceived possibility or subjective probability that he or she will engage in a given behaviour (Committee on Communication for Behaviour Change in the 21st Century, 2002:31).”

Table 4.5 presents the validity of the degree and the percentage of which behavioural intention is measured by asking the following questions, 1. Parolees monitoring officials intend to use EM system services. 2. Predicting EM systems services will be used by DCS monitoring officials in the future. 3. Do monitoring officials planning to use EM systems as way forward of improving monitoring outcomes?

Table 4.5: Behavioural Intention



On BI1, 52 percent of the respondents agreed that parolees monitoring officials intend to use EM system services while 3 percent of the officials strongly agreed with statement. However, 38 percent of the respondents disagreed indicating they do not intend to use EM services and 7 percent of the officials strongly disagreed. Of the respondents to BI2, 83 percent indicated that predicting EM systems services will be used by DCS monitoring officials in the future, 4 percent strongly agreed that EM

services would be used in future. Officials who disagreed and strongly disagreed with the statement constituted 13 percent.

4.3 Thematic Analysis of the survey questionnaire

Braun and Clarke (2006) argues that there are only six analytical phases that direct thematic analysis. These phases are as follows:

Phase 1: Familiarising with the data: the researcher read and re-read through the responses in order to have a broad understanding of the data, noting down initial ideas. The researcher then had to do data reduction. The data reduction involved separating responses from open-ended questions from the closed-ended question responses.

Phase 2: Generating initial codes: the researcher then began to code some of the information from the highlighted texts and noted ideas. This helped in retrieving different data easily from the different responses.

Phase 3: Searching for themes: codes were categorised under the factors identified earlier from the theory. However, if there was any new code that could not be categorised or subcategorised with the factors identified earlier, a new category (theme) was formed and a new result was then coded in terms of the new code and categorised to new category (new theme).

Phase 4: Reviewing themes: the next step was reviewing themes with codes of the survey response.

Phase 5: Defining and naming themes: after that the researcher went through each category (theme) to identify subcategories. This went on until it was not possible to sub categorize or to group themes anymore.

Phase 6: Produce the report: finally, the findings were written and their relation with the research questions and literature identified. Details on this are provided in the findings chapter.

4.3.1 Theme from questionnaires response

Ryan and Bernard (2003:103) mention quite a wide range of techniques work that could be utilised to classified the theme, be it reappearance of words and produce words regular, probing for descriptions, language linking and thematic analysis themes are recognized by composing codes. Moreover, they say that right or wrong is not the issues in the event of analysis. This all up the researchers' hands, "theme identification involves judgements on the part of the investigator (Ryan & Bernard, 2003:103)." The researcher analysis, two main themes were developed from the questionnaire responses. The two themes were resulting from some categories and subcategories shown in Table 5.

Table 4.6: Themes, categories and sub categories from the questionnaires response.

Themes	Categories	Sub categories
Perception of technology	Convenience	<ul style="list-style-type: none"> To improve the DCS working condition To avail the resource to do the work To improve the slowness of the EM system in responding To decentralize the control room to provinces To avail the database of the EM offenders to monitoring official To avail vehicle with GPS screen for offenders on EM To work on the accuracy of the EM GPS connectivity To minimize technical issues of the EM devices To provide the uneasily breakable EM devices To improve the control room communication efficiency To utilized DCS staff members to all the control room for better understanding of the business environment.
Attitude towards technology	Usability	<ul style="list-style-type: none"> Literacy Level Effectiveness of the technology Ease of use

Perception of technology

This theme was generated from the general perception of electronic monitoring systems of parolees, monitoring officials. Response to the questionnaire reveals numerous perceptions of electronic monitoring systems. Most of the parolees monitoring officials had a perception that with electronic monitoring systems monitoring process would be convenient.

The monitoring officials were of the view that their working condition can be improved and also resources would be made available for them to do work. They mentioned that the electronic monitoring systems are very slow and believed that the speed of the electronic monitoring system can be improved to respond much quicker to incidents of vandalism and breakage. The monitoring officials had a view that control could be decentralised to provinces and database of the electronic monitoring systems to be available for reaction teams to respond to violations.

Some participants had the perception that electronic monitoring systems would avail vehicles with a GPS screen for offenders on electronic monitoring systems and work on the accuracy of the electronic monitoring systems GPS connectivity. The respondents also revealed that monitoring officials had the perception that electronic monitoring system technical issues of the device could be minimised to increase the turnaround time for repairs and returns to the respective centre.

There was a percentage of monitoring officials who remained not stimulated by the notion of taking electronic monitoring systems. They had negative perceptions noting that electronic monitoring systems could be vandalised, have connectivity, signal problems or wrong location and that the socio-economic climate in our country at the moment does not support this kind of system. The respondents suggested that the department can provide the uneasily breakable electronic devices and also had the perception that to utilized DCS staff members to all the control room for better understanding of the business environment could be a good idea.

Attitude towards a technology

Rogers (1995:55) says that "attitude towards an innovation is a critical intervening variable in the innovation adoption decision, thus attitude towards a specific information technology (in this case electronic monitoring systems) is conceptualised as a potential user's assessment of the desirability of using that technology. The

theme in the studies is linked to the first theme, observing at how the monitoring officials' perception of electronic monitoring systems technology affect their attitude directly."

4.3.2 Thematic analysis of the Interviews

The next section shows analysis of the experimental data gathered from the interview processed with the electronic monitoring system of the Department of Correctional services, Community corrections. The analysis were likewise shown by Braun and Clarke (2006) that six steps of thematic analysis. The definite steps are as shown:

Step 1: Familiarising with the data: the researcher read and re-read through the responses in order to get a broader understanding of the data noting down initial ideas. The researcher then had to do data reduction. The data reduction involved separating responses from open-ended questions from the closed-ended question responses.

Step 2: Generating initial codes: the researcher then began to code some of the information from the highlighted texts and noted ideas and this helped in retrieving different data easily from the different responses.

Step 3: Searching for themes: codes were categorised under the factors identified earlier from the theory. However, if these any new code that could not be categorized or subcategorised with the factors identified earlier, a new category (theme) was formed and a new result was then coded in terms of the new code and categorised to new category (new theme).

Step 4: Reviewing themes: the next step was reviewing themes with codes of the survey response.

Step 5: Defining and naming themes: after that the researcher went through each category (theme) to identify sub categories. This went on until it was not possible to sub categorise or to group themes anymore.

Step 6: Product the report: Finally, the findings were written and their relation with the research questions and literature identified. Details on this are given in the findings chapter.

Table 4.7: Themes, categories and sub categories from the interview response

Theme analysis from the interview response

Themes	Categories	Sub categories
ICT Infrastructure/ Resources	ICT Infrastructure/ Resources	ICT readiness: Availability and accessibility of the ICT resources and infrastructure in communities
Environment	DCS environment/ monitoring officials environment	Extent of DCS acceptance of the technology / ICT –enable environment
Attitude towards the technology	Security and Trust	Levels of trust of the technology
Perception of the technology	Effectiveness and efficient of the technology	Ease of management of the EM systems / user friendly

Theme: Infrastructure and resources

Based on the responses from the interviews, the accessibility of infrastructure and resources is of dynamic standing. The responses disclose that even if electronic monitoring systems were to be successful but due to the current infrastructure to which it is linked makes everything nil and void. ICT resources currently at DCS are very slow and old, which makes the goal and the aim of electronic monitoring of parolees unachievable. Increasing resources would be need by providing additional skilled staff trained to operate the systems or provision of funding to administer the electronic monitoring systems separate from the existing DCS ICT infrastructure systems.

The answers also expose the presence of inequality inside populations everywhere Cape Town with regard to accessibility and openness of ICT capitals and infrastructure. This generates a condition where populations with improved admission to ICTs would appreciate the use of electronic monitoring systems of parolees and the use of technology accessibilities, although parolees from familiar dwellings and rural areas might be omitted because of non-existence of effective capability (for example, network coverage) or other economic reason (for example, unemployment). Situations like these enable the creation divides digital community in society.

Theme: Environment

The essential aspect need the reflection was the environment that the electronic monitoring was going to be presented. Monitoring official reveal that the Department of Correction Services have to consider three aspects of environment, when they are making decision earlier to adoption of EM systems. The Department of Correctional Services according the responses environment was not ready to adopt the new technology. The concerning of the monitoring officials is that they were supposed to be informed about the introduction of new technology with in their workplace, they reveal that training on this system would have enlighten officials with the operation of this new technology in their environment.

As they were to use the system on a daily bases to function monitoring duties. The responses reveals that environmental EM system training should have uplifted their knowledge level of the new technology. Interview responses revealing that for the Department of Correctional Services to present EM system would be waste of time, meanwhile, the user that are supposed to use it have no idea how to use the system. DCS and User environment has an effect on the level of adoption, hence, the reception from both would be in a high magnitude as its purpose known.

Theme: Perception of the technology

The perception of the new technology by DCS monitoring official in essence a broad-spectrum theme. The response on interviews show that monitoring official perception is that this new technology would bring in a considerable improvement within the community corrections in the department comparing to the manual system of parolees monitoring ii done.

Monitoring of parolees in the major challenge currently the department is faced with, more special in areas where there is no coverage on network or internet is the problem to access and on mobile public transport. The interviews responses reveals the connectivity is the outmost important on real time GPS (Satellite Tracking), as the parolees would be moving around the demarcated areas.

Theme: Attitude towards the technology

Perception towards EM systems is that DCS officials has an influence in the new technology. Their views of the productivity and success of the EM system should substantial progress, how the monitoring practice is accomplished and produced an optimistic attitude towards EM systems. Nevertheless, the EM system security risk is viewed as contemporary generating a negative attitude.

4.3.3 Using theoretical framework for analysis

The Unified Theory of Acceptance and Use of Technology (UTAUT), is one of the latest models on technology acceptance, produced elements across eight we known technology acceptance models: the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), the Theory of Planned Behaviour (TPB), the combined TAM and TPB, the Model of PC Utilization (MPTU), the Innovation Diffusion Theory (IDT) and the Social Cognitive Theory (SCT).

Venkatesh (2003) argue that the objective of the UTAUT was to achieve a unified view of user acceptance. The subsequent unified model contains of four core components or factors of intention and usage (these are described later). The likelihood of the acceptance of a new technology within an organisation and the UTAUT model is a useful tool for managers to assess. The factors that drive new technology acceptance would assist to understand, so that appropriate features can be designed to facilitate acceptance of a new technology by users.

4.4 Conclusion

The interviews and questionnaire both set of data reveals a number of themes in the analysis of data. Perception of EM systems has been also reveal by participants compare to the manual monitoring of the parolees. Most of the participants acknowledge the benefits of EM systems.

CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The determination of the study is that EM systems be successful the adopted in South Africa UTAUT framework need to be deliberated. Paroles monitoring officials' views of EM system are on this UTAUT framework, hence it is very significant for realization. Literature reveals number of additional factors, apathy from UTAUT structure, and the adoption of EM systems would not show crucial role without the idea of interviews and questionnaires together.

5.2 Research Contribution

The results of this study is likely to subsidise to a bigger knowledge of the factors that might have impacted the adoption of electronic monitoring system of parolees' in South Africa. The results of the study might as well help the Department of Correctional Services in making critical judgments such as the accessibility of ICT equipment's and convenience of ICT equipment to the public services employees.

5.3 Research Limitations

The research was conducted in Cape Town, Western Cape, South Africa and the sample size used in this study does not permit generalisability of the results to all DCS Community Corrections. The alternative restriction is that the data gathered from monitoring officials' who are using the EM systems.

5.4 Future research

This study has produced an underpinning for more exploration the adoption of EM systems inside the Department of Correctional Services environment. The research emphasis only on factors that might have impacted on the adoption of EM systems using the UTAUT method, meanwhile the number of TAM frameworks out there that could be used in the future research. More studies might be using larger sample size and cover extra variables or adoption simulations.

5.5 Recommendation

The research on countries with knowledge in EM system has reveal that the institution of technology in correctional facilities is an interesting project that entails cautious consideration and preparation. Literature has also reveal that EM system can significantly lessen through social regulator and motivation in the monitoring process of the offender. This affords a prospect for resolving approximately EM system complications, but also presences a complete series of new apprehensions. As result of this EM system generally fascinates a percentage of disapproval and opposition. References that can be strained from this research are that,

- Importance values of manual monitoring of offender
- Transparency are to applied to EM system
- Offender should be as consistent and protected as EM system procedures

However, the research also recommends that DCS management have to take into deliberation the circumstances of other countries where they started EM system to monitor offenders and later on abandoning the EM systems and going back to the manual monitoring system. Those countries discontinued the use of EM system citing:

- Concerns of security
- Cost of implementation
- LAN infrastructure support
- Human resource support

Though the research recommends the adoption of an EM systems in South Africa, it is good to state that there are a quiet portion of disbelief mainly once you take some emerging states overlooking the practice of EM.

Nonetheless, the overlooking and arguments that mount the adoption of EM systems there are number of states such as Canada and USA that have successfully implemented EM systems as deliberated in chapter two. The EM systems that Canada is currently using has benefited the correctional services particularly when it comes to disseminating offenders to their respective homes of origins. England and Wiles has also used the EM systems to ease monitor their offenders in regions that are not simply reached. Benefits that states like Australia and United States have

learned with the use of EM systems can be transformed to fit the South African context. However this should not be adopted without thoughtful consideration and referring all appropriate organisations. Nevertheless, the study does not suggest that it could be the same case for South Africa by making reference to developing countries while it is still a developing country.

The Department of Correctional Services and the role players, before the institution of an EM system, first and foremost the EM system must be genuinely viewed as useful to the monitoring officials. There must be an enormous extensive and smart consciousness operation directed by the DCS management aiming those monitoring officials in community corrections and correctional centres, appropriately enlightening them about the actual aids (lower cost, time saving, reducing overcrowding, etc.) if the adoption of ME systems is to be operative.

Therefore, DCS management and the role players must also take into reflection the cultural variety of South Africa, in the knowledge level and internet experience. Furthermore, information, resources and support should be provided to the several community centres such as, providing computers and internet access at the correctional facilities and community correction facilities countries widespread, particularly in areas that have shortage of ICT permitted infrastructure.

5.6 Conclusion

This research acknowledges the factors that might have an inspiration on the possible EM monitoring officials' purpose to adopt EM system technologies inside the South African environment using UTAUT framework. The outcomes of the research shown that quality performance expectancy, effort expectancy, social influence and with other facilitating conditions such as the availability of ICT – permitted organisation and capitals, the perceived trust in EM system technology digital divide with the Cape Town are and the awareness of the technology are important in the potential adoption of EM system in South Africa. These results could possibly contribute to DCS decision makers in South Africa on how they might influence the prospects that EM system offerings.

However, the possibility of the prospective adoption of EM systems by the members of DCS of this research is founded on their perception of the virtual improvement of

EM systems compared with physical monitoring of the parolees, their perception on the ease of use of EM systems and their perception of how compatible EM systems is on daily monitoring.

Therefore, the convenience of ICT enable organisation and capitals is vital for a technology to be adopted particular in the South Africa and in the DCS environment. Although the study shown that there is approximately caring responsiveness of EM systems within the DCS monitoring officials, the results do not reveal on those monitoring officials who do not have admission to information technologies.

Notwithstanding, the point that the research used a small sample size limited to monitoring officials in Cape Town thus limiting the generalizability of the results of the study, the research offers valuable perception into the inspiration essential the aim to adopt and use EM systems in South Africa. The study also shown the difficulties and challenges that the present manual hand system and how the prospective use of technology in the DCS monitoring practice could hypothetical assist resolving these difficulties. It is clear that that DCS management decision makers' essential to talk about these complications before presenting a new EM systems.

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APPENDICES

APPENDIX A: Research questionnaire

Section A

This questionnaire is part of a research that seeks to establish factors that affect the adoption of electronic monitoring system and the use of technology by the Department of Correctional Services in South Africa. It is the technological tool where the monitoring official of parolees can use to monitor the offenders that on parole and subjected to it. This infrastructure is managed by the government (DCS) and the network services providers.

The tagging device is attached on human body as bracelet, it's connected on a network to receive and send signal to the reception or control room and it powered by a reachable batteries. Monitoring officials users DCS infrastructure to connect to the EM systems to track the offenders where about.

Privacy and Confidentiality statement:

Your privacy and confidentiality is guaranteed as you participate in this study. The information you give in this questionnaire will be treated as private and confidential and will ONLY be used for the purpose for which is collected.

SECTION A: GENERAL INFORMATION

Q1. What is the current position that you hold?

- Senior manager
- Middle manager
- Junior Manger
- Production worker
- Other

Q2. How many years have been in that position?

- Less than 1 year

1 to 3 years

3 to 5 years

More than 5 years

Q3. How many offenders are you monitoring?

Q4. How are you monitoring the offender?

Q5. What is the average number of offenders you received in each month?

SECTION B: ELECTRONIC MONITORING SYSTEM ADOPTION

Q5. Did you receive any electronic monitoring systems training?

Yes

No

If you answer is **YES**, where did you do your training, when and how long was it?

Q6. How long have you been using EM?

Q7. If you were to improve the EM system, what would you improve?

Q8. Kindly rate your level of satisfaction with the EM system you use?

Very satisfied

Satisfied

Dissatisfied

Very dissatisfied

SECTION C:

Indicate the extent to which you agree or disagree with the following statements by ticking the most appropriate column. (Strongly Agree –**SA**, Agree – **A**, Disagree – **D**, Strongly Disagree – **SD**).

Q10. PERFORMANCE EXPECTANCE (PE)

NO.	STATEMENT	SA	A	D	SD
PE1	Adoption of EM systems improves the monitoring process.				
PE2	EM facilitates the easy flow and access to the offender information details about his/she where about quickly.				
PE3	Adoption of EM systems enhances collaborative with the community correction systems and the admission and release systems.				
PE4	The adoption of EM systems in the department helps to monitor and handle the parolee’s tasks effectively.				
PE5	The adoption of EM systems at the department helps to improve the performance of the monitoring official.				
PE6	The adoption of EM systems in IT operations will support the EM process.				

Q11. EFFORT EXPECTANCY (EE)

NO.	STATEMENT	SA	A	D	SD
EE1	Interaction with EM systems is clear and understandable.				
EE2	An EM system is basically easy to use.				
EE3	EM systems make monitoring easier.				

EE4	EM system makes it easier to interact with all my parolee offenders at any time.				
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Q12. SOCIAL INFUENCE (SI)

NO.	STATEMENT	SA	A	D	SD
SI1	Correctional Services management support EM systems with technology tools.				
SI2	My colleagues think I should use EM systems to do monitoring duties.				
SI3	Offenders prefer EM systems because it enables them to be with the family and to be able to provide support to them.				
SI4	My supervisor at work influence my behaviour think that I should make use of EM to do my monitoring duties.				

Q13. FACILITING CONDITIONS (FC)

NO.	STATEMENT	SA	A	D	SD
FC1	An EM system is affordable.				
FC2	EM has idea infrastructure for monitoring of parolees offenders.				
FC3	The department of correctional services has high speed internet line, and uninterrupted services.				
FC4	As a parolees monitoring official do you think you need have necessary knowledge to use EM systems?				
FC5	Difficulties with EM systems parolee monitoring officials do get all the necessary assistance needed on time				
FC6	The DCS focuses on new IT system projects, which aim to increase data speed and information security.				
FC7	Systems, technological services and applications and services DCS are continuously updated to keep pace with technological developments				

Q14. BEHAVIORAL INTERTION (BI)

NO.	STATEMENT	SA	A	D	SD
BI1	Parolees monitoring officials intend to use EM system services				
BI2	Predicting EM systems services will be used by DCS monitoring officials in the future				
BI3	Do monitoring officials planning to use EM systems as way forward of improving monitoring outcomes?				

SECTION D: BARRIERS TO EM ADOPTION

Q15. List any barrel (s) to EM adoption at the DCS in Community Corrections?

- a). _____
- b). _____
- c). _____

Q16. Below are some of the factors hindering or limiting the use and/or adoption of EM, kindly rate the level of your agreement or disagreement as applicable to your community corrections.

STATEMENT	SA	A	D	SD
Poor network infrastructure to support EM systems				
Poor network connectivity to support EM services				
No reason to throw away the existing systems in place for monitoring the offenders				
Unaware of the EM systems based ideal technologies				
Unaware of the benefits that EM systems can bring to the DCS				
Limited availability of funds to move to the EM fully				
Lack of sufficient funds to finance the move to the EM systems				
Security issues associated with the EM				
Lack of skilled manpower				
Resistance to change to new technology				

Q17. What, in your view, should be done to encourage EM adoption in the DCS in to all the community corrections?

Q18. Suggest any strategy that can be used to minimized challenges associated with the adoption of EM is the DCS community corrections level?

- A. _____
- B. _____
- C. _____
- D. _____

Q19. In your opinion, is there any future for the adoption of EM in the DCS in SA?

APPENDIX B: Interview questions for DCS employees

The interview questions are structured with the aim of answering research question. Since this study is using structured/semi-structured interviews, some of the questions will be asked based on the response from the respondents to gather more relevant information. Section A: included interview questions for DCS employees who are expect in EM, and section B is the questionnaire to all the monitoring officials of the parolees in the DCS community corrections.

Section B

1. What is your role in the department?
2. What do you think of the current status of the EM in the department?
3. How has the systems improved your job of monitoring parolees?
4. How has it improve on you productivity?
5. Do you think you are effective in managing parolees?
6. Is the system useful for the future of your job?
7. How do you find interaction with the system?
8. Does it require too much of your mental effort?
9. Does the system do what you would like it to do?
10. Have you discussed the new system with colleagues?
11. What do you think about the old way of monitoring?
12. What do you think the DCS should do to deal with the challenges of EM in order to reap its benefits?

APPENDIX C: Consent letters



correctional services

Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

Private Bag X136, PRETORIA, 0001 Poyntons Building, C/O WF Nkomo and Sophie De Bruyn Street, PRETORIA
Tel (012) 307 2770, Fax 086 539 2693

Mr SM Nikani
112 17th Street
Broadlands Village
Strand
7140

Dear Mr SM Nikani

RE: APPLICATION TO CONDUCT RESEARCH IN THE DEPARTMENT OF CORRECTIONAL SERVICES ON: "ADOPTION OF TECHNOLOGY BY PUBLIC SERVICE EMPLOYEES: CASE OF PAROLEE ELECTRONIC MONITORING SYSTEM IN SOUTH AFRICA"

It is with pleasure to inform you that your request to conduct research in the Department of Correctional Services on the above topic has been approved.

Your attention is drawn to the following:

- You are required to include "Cape Town" in the title as the results of the study cannot be generalised to the whole of South Africa.
- The relevant Regional and Area Commissioners where the research will be conducted will be informed of your proposed research project.
- Your internal guide will be **Director: Systems Development, Mr S Dlepuma**.
- You are requested to contact him at telephone number (012) 307 2233 before the commencement of your research.
- It is your responsibility to make arrangements for your interviewing times.
- Your identity document and this approval letter should be in your possession when visiting.
- You are required to use the terminology used in the White Paper on Corrections in South Africa (February 2005) e.g. "Offenders" not "Prisoners" and "Correctional Centres" not "Prisons".
- You are not allowed to use photographic or video equipment during your visits, however the audio recorder is allowed.
- You are required to submit your final report to the Department for approval by the Commissioner of Correctional Services before publication (including presentation at workshops, conferences, seminars, etc) of the report.
- Should you have any enquiries regarding this process, please contact the Directorate Research for assistance at telephone number (012) 307 2770 / (012) 305 8554.

Thank you for your application and interest to conduct research in the Department of Correctional Services.

Yours faithfully

ND SIHLEZANA
DC: POLICY COORDINATION & RESEARCH

DATE: 24/08/2016

P.O. Box 652 • Cape Town 8000 South Africa • Tel: +27 21 469 1012 • Fax +27 21 469 1002
80 Roeland Street, Vredehoek, Cape Town 8001

Office of the Research Ethics Committee	Faculty of Informatics and Design
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At a meeting of the Faculty Research Ethics Committee, ethics approval was granted to MR SYDWELL MNONELELI NIKANI student number 199088608 for research activities related to the MTech: Information Technology degree at the Faculty of Informatics and Design, Cape Peninsula University of Technology.

Title of dissertation/thesis:	Adoption of technology by public service employees: Case of parolee electronic monitoring system in South Africa
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Comments

Research activities are restricted to those detailed in the research proposal. **Ethics approval is granted on condition that a consent letter from the Department of Correctional Services (DCS) is submitted to the Faculty Research Ethics Committee, which will permit the student to collect data at DCS.**

	16/3/2016
Signed: Faculty Research Ethics Committee	Date

