EFFECTIVENESS OF CUSTODY AND PREVENTION OF PRISONER ESCAPE FROM PRISON

CHAN VACHIRADATH

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THE EFFICACY OF TECHNOLOGY IN PREVENTING THE ESCAPE OF THE INMATES IN THE PRISON.

.....
Mr. Chan Vachiradath
Candidate

.....
Assoc.Prof. Srisombat Chokprajakchat, Ph.D.
Major-advisor

.....
Lect. Thanyalak Rujipak, Ph.D.
Co-advisor

.....
Mr. Nathee Chitsawang, Ph.D.
Co-advisor

.....
Prof. Banchong Mahaisavariya, Ph.D.
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....
Assoc. Prof. Srisombat Chokprajakchat, Ph.D.
Program Director
Doctor of Philosophy Program in
Criminology, Justice Administration and Society
Faculty of Social Sciences and Humanities,
Mahidol University

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on
August 10, 2012

.....
Mr. Chan Vachiradath
Candidate

.....
Asst.Prof. Sunee Kanyajit, Ph.D.
Chair

.....
Assoc. Prof. Srisombat Chokprajakchat, Ph.D.
Member

.....
Lect. Thanyalak Rujipak, Ph.D.
Member

.....
Asst.Prof. Nittaya Sumretphol, Ph.D.
Member

.....
Mr. Nathee Chitsawang, Ph.D.
Member

.....
Assoc.Prof. Banchong Mahaisavariya, Ph.D.
M.D., Dip Thai Board of Orthopedics
Dean
Faculty of Graduate Studies
Mahidol University

.....
Assoc. Prof. Wariya Chinwanno, Ph.D.
Dean
Faculty of Social Sciences and Humanities
Mahidol University

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Chan Vachiradath

THE EFFICACY OF TECHNOLOGY IN PREVENTING THE ESCAPE OF THE INMATES IN THE PRISON

CHAN VACHIRADATH 5038668 SHCJ/D

Ph.D. (CRIMINOLOGY, JUSTICE ADMINISTRATION AND SOCIETY)

THESIS ADVISORY COMMITTEE: SRISOMBAT CHOKPRAJAKCHAT, Ph.D., NATHEE JITSAWANG, Ph.D., THANYALAK RUJIPAK, Ph.D., NITTAYA SUMRETPHOL, Ph.D.

ABSTRACT

The main objectives of the research were, firstly, to study the factors influencing the efficacy of applying technology to prevent prison inmates' escapes, which include the motivation behind the escape, the work performance of the prison officer, the custody of inmates, the prison settings, the change in prison population, the surroundings and the efficiency in employing technology. Secondly, this research aimed to study the efficacy of the application of technology in preventing prisoner escapes.

The research method was a combination of qualitative and quantitative approaches by using stratified and simple random sampling. A total sample population of 400 officers was selected from fourteen prisons and correctional institutions: Bangkwang Central Prison, Klongprem Central Prison, Chiangrai Central Prison, Klongpai Central Prison, Pitsanulok Central Prison, Rayong Central Prison, Nakhon Sri Thammarat Central Prison, Chiangmai Central Prison, Ratchburi Central Prison, Songkla Central Prison, Samutprakarn Central Prison, Thonburi Remand Prison, Khaobin Central Prison and Central Correctional Institution for Drug-addicts. The gathered data were statistically analyzed by using percentages, means, standard deviations, multiple regression analysis, Path Analysis, and the LISREL program.

The findings were that, on the one hand, the factors which directly affect the efficiency in the custody of inmates and in prison escape prevention in order to most-to-least importance are: the application of technology and the custody of inmates. On the other hand, the work performance of prison staff, the prison settings to take inmates in to custody, the change in prison population, and the motivation behind the prison escape all have indirect influences.

As it has been clearly shown that the application of technology together with the custody of prison inmates have direct impacts on efficiency, the top priority of applying technology, therefore, should be given to Closed Circuit Television (CCTV) systems, followed by metal detector machines, cell phone signal blocker devices, X-ray machines, sound recording devices used during a visit, a computerized database of prison inmates' profiles, a video conference system linking prisons and courts, and a Scanned Document system.

KEY WORDS : EFFICACY/TECHNOLOGY/PREVENTING/INMATES/PRISON

166 pages

ประสิทธิภาพของการนำเทคโนโลยีมาใช้ในการควบคุมและการป้องกันการหลบหนีของผู้ต้องขังในเรือนจำ
THE EFFICACY OF TECHNOLOGY IN PREVENTING THE ESCAPE OF THE INMATES IN THE PRISON

ชาญ วชิรเดช 5038668 SHCJ/D

ปร.ด. (อาชญาวิทยา การบริหารงานยุติธรรมและสังคม)

คณะกรรมการที่ปรึกษาวิทยานิพนธ์ : ศรีสมบัติ โชคประจักษ์ชัด, Ph.D., นัทธี จิตสว่าง Ph.D., ธัญลักษ์ รุจิภักดิ์ Ph.D., นิตยา สำเร็จผล Ph.D.

บทคัดย่อ

งานวิจัยเรื่อง “ประสิทธิภาพการควบคุมและการป้องกันการหลบหนีของผู้ต้องขังในเรือนจำ” มีวัตถุประสงค์เพื่อศึกษาปัจจัยของมูลเหตุจูงใจ การปฏิบัติงานของเจ้าหน้าที่ การควบคุม อาคารสถานที่ การเปลี่ยนแปลงประชากรผู้ต้องขัง สภาพแวดล้อม และประสิทธิภาพการนำเทคโนโลยีมาใช้ ที่มีอิทธิพลต่อประสิทธิภาพในการป้องกันการหลบหนี เพื่อศึกษาถึงประสิทธิภาพของการนำเทคโนโลยีมาใช้ในการป้องกันการหลบหนีของผู้ต้องขังในเรือนจำ

โดยเป็นการวิจัยเชิงปริมาณควบคู่กับการวิจัยเชิงคุณภาพ ซึ่งคัดเลือกกลุ่มตัวอย่างด้วยวิธีการส่งแบบชั้นภูมิและการสุ่มอย่างง่าย จากเรือนจำกลางบางขวาง เรือนจำกลางคลองเปรม เรือนจำกลางเชียงราย เรือนจำกลางคลองไผ่ เรือนจำกลางพิษณุโลก เรือนจำกลางระยอง เรือนจำกลางนครศรีธรรมราช เรือนจำกลางเชียงใหม่ เรือนจำกลางราชบุรี เรือนจำกลางสงขลา เรือนจำกลางสมุทรปราการ เรือนจำพิเศษธนบุรี เรือนจำกลางเขาบิน และทัณฑสถานบำบัดพิเศษกลาง รวมจำนวน 400 คน สถิติที่ใช้ในการวิเคราะห์ผลการศึกษาได้แก่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน การวิเคราะห์ถดถอยเชิงพหุ Path Analysis และการใช้เทคนิคการวิเคราะห์โดยใช้โปรแกรม LISREL

ปัจจัยที่ส่งผลโดยตรงต่อประสิทธิภาพการควบคุมและการป้องกันการหลบหนีของผู้ต้องขังในเรือนจำ เรียงลำดับความสำคัญจากมากไปหาน้อย ได้แก่ การนำเทคโนโลยีมาใช้ และ การควบคุม ในขณะที่การปฏิบัติงานของเจ้าหน้าที่ การจัดอาคารสถานที่ การควบคุม การเปลี่ยนแปลงทางประชากรของผู้ต้องขัง และมูลเหตุจูงใจในการหลบหนี มีอิทธิพลทางอ้อมต่อประสิทธิภาพการควบคุมและการป้องกันการหลบหนีของผู้ต้องขังในเรือนจำ

ผลการศึกษาครั้งนี้ ชี้ให้เห็นว่าการนำเทคโนโลยีมาใช้ ควบคู่กับการควบคุมมีผลต่อประสิทธิภาพโดยตรง ดังนั้น จึงควรให้ความสำคัญกับการนำระบบกล้องวงจรปิด (CCTV) มาใช้มากที่สุด รองลงมา ได้แก่ ระบบเครื่องตรวจโลหะ (Metal Machine) ระบบการตัดสัญญาณโทรศัพท์ (Block Phone) ระบบเอ็กซเรย์สิ่งของต้องห้ามก่อนเข้าเรือนจำ (X-ray) ระบบบันทึกการสนทนาเยี่ยมญาติ (Phone Record) ระบบจัดเก็บข้อมูลผู้ต้องขังด้วยคอมพิวเตอร์ (IT) ระบบฝากขังทางไกลผ่านจอภาพ (Video Conference) และระบบสแกนเอกสาร (Scan Document) ตามลำดับ

166 หน้า

CONTENTS

CONTENTS (cont.)

LIST OF TABLES

LIST OF TABLES (conts.)

LIST OF PICTURES

CHAPTER I
INTRODUCTION

Research background and research rationale

The custodial and preventive measure of prisoner escape from prisons and correctional institutions is considered as the most crucial mission under the conception of societal protection from crimes. The Department of Corrections has one of the organizational missions, that is, to professionally keeping prisoners in custody by the usage of prison. The prison has its construction details of the firmly strong structure, the all aspect surround of periphery, and having the close monitoring by prison officers together with the disciplinary rules of prison registration. The objective of the conception is to punish offenders for the crime they committed in the restricted area under the court of justice judgment.

The redemption of crime is done through the incapacitation of prisoners of committing a new crime. This conduct requires the close monitoring method due to the fact that the necessity of conduct is related to the impact of social security of the society and the country. The escapees from correctional compounds cause risk to society in any case that the recidivism arises. This is not only effect to the social security matter, but also gives risk to the socio-economic environment and tourism business of the country in which no matter in a short-term or long-term range it could make such inestimable amount of impact. The instance of such scenario is shown rather frequently in the daily newspapers that the allied searching forces of military, police, correctional and Office of the Narcotics Control Board officers to search for contrabands in prisons and correctional institutions in particularly the unauthorized mobile phones and illegal narcotic drugs. The investigation of such seizures reveals the connection of illegal drugs gangs inside prison and those outside of prison. The amount of money in circulation of this illegal business is several hundreds of million

Baht. The international funds also join in the illegitimate drug trade through the temporarily permitted areas and expand the value of the illegal drugs trade in prisons higher ever. The Office of the Narcotics Control Board (ONCB) reports that in the first few months until April 2012 (B.E. 2555) the total searching of 37 prisons and correctional institutions across the country, the 3,353 unauthorized mobile phones has been found, 2,667 items of seized assets with the astonishing amount of 1,038 million Baht (source: Thairath Newspapers, 20 May 2012). In 1957 (B.E. 2500) total prisoners were only 10,900 after since the number has been increasing and is expected to reach 230,000 prisons owning to the fact that in each year the new inmates of around 2,000 are sent into prisons and correctional institutions nationwide. The critical condition of the overcrowding state of prison fundamentally designs to reconstruction of custodial area to high-profile prisoner who is prone to be dangerous. The amount of this group of prisoners was 20,000 approximately (source: Planning Division: Department of Corrections, 2012) accordingly some medium security prisons were developed to be maximum security prisons.

In the past, most prisoners were minor thieves and committed crime with no determination, however, the trend has been shifted since 2002 (B.E. 2545) that the then Royal Thai Government promulgated the Narcotic Addict Rehabilitation Act B.E. 2545 (2002) for illegal drug users who were sent into prisons across the country. The result of the new Act brought down a number of prisoners in prisons. The characteristics of prisoners have been changed from the earlier time, because the new comers in prisoners were found more dangerous e.g. illegal drug sellers, dangerous criminals etc. The more common prisoner traits contain rather sophisticate knowledge, having monetary and social influence to others. Also, the financial capability of prisoners becomes higher in stability of action, therefore the transaction of the illegal drug trade in prisons brought into the smuggling of contrabands which is used for the administration of illegal trade. The role of participants in the illegal drug connection in prisons has been very potential of the existence of this kind of business. Some prisoners play the role of scapegoat for the arrest and the seizure of drug by authorities, and the evidences that could relate to the gang are swiftly disappeared or disconnected to the highly potential members. It causes difficulty to implement the

custodial work inside prisons and correctional institutions under the circumstances (Nathee Chitsawang, 2552, Komchadluek newspapers, 23 June).

Most of the prisons and correctional institutions in Thailand have been built for a very long time. At present, with their aging state of around 60 year old (Penology Bureau, 2554), the conditions of the construction were very fragile and decaying. The risk of prison construction has been one of many factors that are grated as ineffectiveness in custodial management. Under the criminological and penological frameworks, the physical condition of prisons and location of prisons are not to be situated adjacent to communal ways, infrastructural areas and community. However, the rapid growth of the urban and metropolitan in recent years narrow the distance of prison to those aforementioned areas. Nowadays, the Department of Corrections typifies 3 types of prison for the two main objectives, keeping in custody and providing rehabilitation for prisoners, 1). Maximum Security 2). Medium Security and 3). Minimum Security. (Penology Bureau, Department of Corrections, 2553)

According to the governmental policy, the downsizing in the manpower of public sector was seriously implemented. The solution of the policy was to emphasize the development of the system of bureaucracy and introduction of technology with the aim of becoming the effective and sustainable organization and developing civil servants to be professional in the field of particular works (Suchada Rungsinont, 2548: 8-10). As a result, the Department of Corrections has trouble with the limited number of prison staff condition as by nature of the custodial work, the monitoring prison requires a full scale of staff to continuously on guard of prison facility for 24 hours every day. The mission of the organization is regarded as distinctively different from other types of organizational mission. Furthermore, the international standard of the ratio of prison staff to inmate is at 1:5. The Office of the Civil Service Commission (OCSC) designates the standard ratio of prison staff to inmate is at 1:10. Whereas the Thai Department of Corrections burdens the increasing number of prisoners year by year and the ratio of prison staff to inmate is at 1:30. Statistically speaking, the total number of correctional officers is at 11,385, comprising of 5,810 custodial officers or 50 percent, the 3,556 rehabilitative officers or 31 percent, and the

rest are 2,019 managerial officers or 18 percent (Personnel Division, Department of Corrections, 1st April 2553).

Due to the current custodial condition, the interaction between prison staff and inmates is undeniable. It also turns up in other forms of connection between prison staff and inmates especially the illegal activities. The reflection of situation communicates to publics that the Department of Corrections fails in custodial management, and the criminal justice system lack of trust from public.

From the given experiences of the Department of Corrections in custody inmates and prevent escape of prisoners, it can be analyzed that the strategies of the Department of Corrections are as follows; first, solitary confinement was to penalize those conducted such acts against prison disciplinary rules, alternatively, deprivation of permission to be visited or communicated. Secondly, the incentive element was introduced to leading the interest of inmates to conduct in the legal way and easy to control while the number of inmates was rather outnumber the staff. The privileges for inmates are for example the promotion to the higher class of prisoners, permission to be visited, and Good conduct allowance.

In the past, number of prisoners was still in balance with the number of prison staff, therefore the custodial obligation of the correctional authorities could prevent prison escape to the controllable level. Since 1997 (B.E. 2540) the increasing number of prisoner has rapidly exceeded the capacity of correctional facilities across the country. Having considered the number of prison staff, the insufficient number of staff has also extended the problem by the making of the new prisons varied by the judicial areas across the country. Thirdly, the integral measures of the use of the good-conditioned prison facility, penal measure system and incentives for prisoners.

The aforesaid measures could be well-performed in the previous time, nevertheless for the current situation it is rather not possible to implement as good as in those earlier years. The current situation shows that the custodial measures could not manage the custodial works nor prevent the actions of prisoners to be against the

disciplinary rules and prison regulations because most prisoners are considered as criminals with criminal minds. These groups of prisoners are those who contain the long-term prison sentence. The behavior of these groups of prisoners seem to commit unpermitted acts in prison and the privilege given by prison regulations and rules cannot make any hindrance inhibiting illegal activities of inmates. The particular group is prisoner under the sentence of crime relating to Narcotic drug who has a long term of imprisonment according to the law. Most of the minor crime offenders have a lower trend in prisons and correctional institutions due to the diversion off the classic criminal justice path according to the Narcotic Addict Rehabilitation Act B.E. 2545 (2002) for illegal drug users to attend the Vivat Polamuang rehabilitative project to mentally and physically train up for pre-release state. The prison thus is a place for hardcore prisoner merely and the segregation of prisoners is majorly important for specifying the prisoner to maximum security prison.

The research problem is a part of all problems that affect to the Department of Corrections reputation and as a result the lack of belief in organization from the publics could be developed in a greater level. The researcher has viewed that the custodial work of prisoners to govern the treatment of prisoners in accordance to prison regulations and effectiveness of custody. The method to sustainable and effective solution is to introducing technology equipment. With expectation, the technological element can be advantageous for new correctional and criminal justice management, especially for the escape of prisoner condition in Thailand.

In summary, advancement of technology nowadays generates development in many facets of works also including the correctional work. The Department of Corrections put technology in the organizational strategy plan the new development in the prison management and correctional administration. The example of the implement of technology used in prison and correctional institution is e.g. non-lethal weapons. The use of this device could replace the manpower, in which receive little allocation from the Office of the Civil Service Commission (OCSC). Therefore the probability of the use of technology in aiding.

Research objectives

1.To study the motivation, prison officer operation, custodial work, prison facility, prison population trend, societal environment, use of technology affecting the effectiveness and prevention of prisoner escape from prison and correctional settings.

2. To explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

3. To investigate the effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

Scope of the research

In this research, the researcher aims to study the topic of “the effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings”. The sample group of the research, or representatives of the research population, can be displayed in the scope of the research in the following.

Research population

Officer: Officer who has the assigned obligation of custodial work, and conduct work on a daily basis with the use of technology and device for custodial and prevention of prisoner escape in 14 highest risk prisons. The officers are 1,024 who are all working for the Department of Corrections, Ministry of Justice.

Administration: Director General, Deputy Director General, Prison Director, Director of Correctional Institution across the country, with the total number of 364 who are all working for the Department of Corrections, Ministry of Justice.

Sample group

Officer: Officer who has the assigned obligation of custodial work, and conduct work on a daily basis with the use of technology and device for custodial and prevention of prisoner escape in 14 highest risk prisons. By the Sampling Random technique, the 400 officers are those who are all working for the Department of Corrections, Ministry of Justice.

Administration: Director General, Deputy Director General, Prison Director, Director of Correctional Institution across the country. By the Purposive Sampling technique, the total number of 10 administrative officers is all working for the Department of Corrections, Ministry of Justice.

Conception and Theory of the research

The research employs the Escape Prevention Theory, Classical School of Criminology Theory, Rational-Comprehensive Theory, and Prevention Theory.

Content of the Research

1. The level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

2. The effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

3. Factors of the effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings e.g. the motivation, prison officer operation, prison facility, custodial work, prison population trend, and the societal environment settings.

Benefit of research

This research looks to explore the cause or factor that has its relation to the effective custodial work and prevention of prisoner escape from prison and correctional settings. The research result as a result is to be given to the Department of

Correction for the future development of escape of prisoners and for the policy-oriented data in the national level. Alternatively, technology can be the new custodial and escape preventative measure. Furthermore, it is the theoretical development for criminology and penology in the aspect of involvement of technology in escape of prisoner in correctional setting. Lastly, the research can produce the research result for enhancement of understanding and implementation of prevention of prisoner escape in prisons.

Research Definition

Escape prevention is defined as the custodial work to ensure that prisoners follow the prison rules and regulations and to prevent prisoners from escaping to society by the concept of incapacitation under the limitation of authority according the court sentence term.

Prisoner is defined as convicted prisoner, detainee, and entrusted person.

Convicted prisoner is defined as prisoner who is finite sentenced by court of justice and who is imprisoned under the judicial act.

Detainee is defined as person who is detained under the detention warrant.

Entrusted person is defined as person who is detained under the Criminal Procedure Code or other act with no criminal warrant.

Prison is defined as prison and correctional institution for detaining persons and other places where Minister declare the boundary of land evidently in the Royal Thai Government Gazette.

Motivation is defined as inducement of prisoner to escape from prison or correctional institution. The motivation can be shown for examples as unfortunate news from home, unfair treatment of prison officers, quarreling of prisoners, breach of prison rules and regulations, and freedom craving.

Officer operation is defined as the operation of prison officer in custodial obligation and duty in prison and correctional institution. This includes all act of operation of officers e.g. the officer operation in a careless manner, inexperienced manner and corrupt manner.

Custodial work is defined as administrative and managerial works, classification of prisoner system, maintenance of security devices, correctional facility inspection, contraband searching, guarding duty, prisoner counting, emergency and custodial measure and prisoner visitation and contact from the publics.

Correctional facility is defined as unstable prison wall, long-standing dormitory and the non-protective prison gate.

Prison population trend is defined as the increasing of long-term sentence prisoners and other characteristics of prisoner such as the increasing of prisoner having well-socio and economic status, influential prisoner, illegal drug related prisoner, civil officer e.g. medical doctor, policeman, soldier, and politician etc.

Societal environment management is defined as the design of appropriate environment of prison setting for effective custodial and prison management.

Technology usage is defined as the introducing of electronic, computerized and technological system to operate the custodial and escape preventative work in prison in Thailand. These are as the following;

1. Closed circuit Television
2. Information Technology
3. Video Conference
4. Block Phone
5. X-ray
6. Metal Machine
7. Scan Document
8. Phone Record

Effectiveness is defined as proficiency of custodial work of prisoner and of governing of prisoner escape, also management for saving energy and resources. The objective of the management with effectiveness and efficiency is to be able to prevent contrabands to be smuggled into prison setting.

CHAPTER II
LITERATURE REVIEW

Theories, documents and relating researches of this research are gathered by the researcher regarding its all contents and details as follows;

1. Definition of technology
2. Concept of custody and prevention of prisoner escape
3. Adoption of technology in international prison
4. Adoption of technology in Thai prison
5. Relating research
6. Variables of the study
7. Conceptual framework of the study
8. Hypothesis of the study

Definition of technology

The word "Technology" derives from Greek language, that is, ‘Technologia’ meaning the systematic action. Nonetheless, it is common that the word ‘technology’ used with the word ‘science’ or in the term of ‘science and technology’ (Royal Institute Dictionary B.E. 2539: 406). The definition of ‘technology’ is ‘technology relating to arts of the applied science for the practical and industrial benefits’. Furthermore, there are more definitions regarding technology as follows;

Monsma Stephen (1986) gives definition of technology that it can be relied on for making benefit from itself and making a living for mankind including as a problem solving tool for people from the past till future time.

Neil Postman (1993) sees technology as adoption of the scientific knowledge for invention of new innovative products at the maximum level. The different point between technology and science depends on economic factors. Scientific knowledge is mutual property of world population by which can be distributed with no selling application. In summary, new technology has scientific knowledge basis.

Phadoongyot Duangmala (B.E. 2523: 16) notes that the meaning of technology has its broader sense than the root of its vocabulary or it is to say that the activities related to mechanics and industrial inventive products. Technology is knowledge or science regarding industrial and production techniques and other activities assisting human life. To conclude, technology is the knowledge that human use resources for benefits of mankind involving living and environmental control.

Sippnont Katuthat (unknown year, 81) describes that technology is the adoption of scientific knowledge and other sciences for application to response to specific needs through the use of resources for continual production and distribution in all processes. Technology is useful under the appropriate place and time condition. In case that technology is in compliance with society, politics, culture and environment, the technology will be advantageous to personal and common interests. However in case that technology is not under the aforesaid condition, therefore the disadvantages cannot be thoroughly predicted.

Thammanoon Rochanaburanont (B.E. 2531: 170) refers that technology is the combination of knowledge, science and expertise to conduct a highly-efficient operation. Generally, technology comes with scientific knowledge, in other words science is knowledge and technology is the application of knowledge to implement. This makes the words come together as emphasis that the existence of science and technology create high efficiency as result.

Chamnan Chaovakiratipong (B.E. 2534: 5) provides a brief definition of technology as a subject of material assembling to industry or industrial engineering or

applied science from variety of definition provided. In summary, technology is subject that science and other subjects applied to human needs e.g. industrial factory etc.

To put it briefly, process or method of implementation of science and other knowledge for human benefit, His Majesty the King Bhumipoladulyadej made the speech regarding technology in a simply manner that “is the make use of it” (Yenjai Laohavanich, B.E. 2530: 67). It clarifies that “process or method of implementation of science and other knowledge for human and societal benefits.

Concept of custody and prevention of prisoner escape

The Department of Corrections as an agent enforcing the treatment of offenders according to the court judgment or laws such as the Act of Penitentiary and other relevant law of treatment of prisoner, and ministerial policy, regulations, criminological and penological concepts. In the international arena, the United Nations standard minimum rules for the treatment of prisoners and recommendations according to the United Nations and other welfare and assistance of prisoners.

The punishment and the treatment of offenders in Thailand is the use of imprisonment which follows the concept of the Classical School theories as summarized in the following (Pornchai Khunti et al, B.E. 2543: 15);

The Restraint Theory

Philosophers and lawyer in Europe such as Cesare Beccaria (1728-1794), and Jeremy Bentham (1748-1832) are the leaders of the school of criminology and penology, Classical school, and Neo-classical school with the pursuing concept of Free Will. The Free Will is the major concept that believes that the offenders is the person who choose their own decisions or make his own choices by weighting reward and punishment factors prior to any actions. It is the logic-based thinking or worthiness of any deeds or actions. Therefore wen the offenders make careful

decision of any action, they have to accept the impact derived from such decision-made act them. This school of thought treats offenders with the idea of incapacitation by the use of imprisonment or prison which is described as institutionalization for segregation from entire society.

Rational Choice Theory

This theory believes that the expressive behavior of human comes from rational thinking, which carefully calculates between the benefit and punishment that he or she will receive at the end. All actions including deviant actions are the results of such thinking and have the satisfaction as a prime element. In the punishment aspect, the state or government work to issue the law and punishment for prevention of deviant behavior. (Brown. 2004: 50)

The application of punishment in prison or correctional institution originates from the Classical school because of the reason that society demands to punish offenders under the objective of retribution concept. Furthermore, it expects that offenders have to take responsibility to the action or in this case, crime committed by them through the just manner through this interpretation the use of imprisonment is fundamentally understood. (Pornchai Khunti, Thatchai Pitaneelabutr and Assawin Wattanavibul, B.E. 2543: 15).

Deterrence Theory

Besides the previous theories, the Deterrence theory can explain the result of and influence of the law and regulations for public government, rather than the cause of crime. Pretty similar to other theories, it assumes that human calculate the reward and punishment, and the result of the thinking is given to the side of reward therefore the criminal choose to commit a crime for the expectation of the result. As a result, this theory depicts the usefulness of having the effective law which prevents those who want to violate such laws and orders. The effective law holds its vital characteristics, which are severity and fastness of punishment. The Deterrence theory covers two types of deterrence, that is to say ‘General Deterrence’ and ‘Special Deterrence’. The General Deterrence is the threatening and punishment to other

persons in public, whereas the Special Deterrence is the threatening and punishment to the offenders for future crime prevention. (Pornchai Khunti, Thatchai Pitaneelabutr and Assawin Wattanavibul, B.E. 2543: 22).

Crime Prevention Theory

The crime prevention and incapacitation of offenders has objectives to prevent offender from committing the future crime. The sanction of crime prevention includes imprisonment and taking into custody for cutting any opportunity of crime committing for the period of being in custody. The use of technology in custody and prisoner escape prevention is a crime prevention measure while being in prisons. Prisoners are not allowed to violate prison regulations and any relevant rules in correctional institutions and prisons (Supoj Suroj, B.E. 2550).

Consequently the use of imprisonment is one of the strategies that criminal justice system employs for the apprehension of crime. The deprivation of freedom by the imprisonment can be the factor that offenders decide not to violate laws. The changing of society today makes impact to prisoner treatment in prison because of the increase of prisoner population and the change of prisoner characteristics e.g. influential prisoner, affluent prisoner, professional prisoner, and others. These prisoners have influence on custody and prisoner escape prevention through particularly the smuggling contrabands into prison, which regarded as a new model of illegal act inside prison. The attempt to introduce technology for custody and prisoner prevention of conduct the illegal act in prison can be called the special deterrence for the particular group of prisoners in the prison.

The introduction of technology for custody and influential prisoner prevention of conduct the illegal act, because prisoner will weigh their risk of being arrest and reward of such illegal deed if there are technological equipment used for observation of their behavior. Therefore it is explained that the implementation of the deterrence theory is done by the Special Deterrence.

These aforementioned theories elucidate the prisoner treatment in prison under the effective regulations and escape prevention from custodial settings. All are the department of Corrections responsibilities to keep in prisoner and be abided by laws and regulations. However the unsuccessful work could be brought up by several reasons.

Nathee Chitsawang (B.E. 2550: 7-25) notes that elements of disobedience of prisoner of custody and prisoner escape are as follows;

Escape motive

The motive of prisoner escape can be from several causes that interrupt the peaceful stay of prisoner while being in custody e.g. sad news from home and family member, unjust court sentence, deception of lawsuit, unfair official, being in debt, quarrelling and fighting with other inmate, overcrowding prison, and violation of prison regulations.

Official operation

The factors that prisoners are not under the legal governing and try to escape from prison because of these following factors; carelessness of official operation, familiarity between official and prisoners, unchanged shift of guardians, stress, boredom, and the unexpected manner of working of official of the prisoner escape opportunity. For less experienced official can lead to the deception and possible corruption of work with or without cooperation of other people for some interest.

Correctional building

The correctional building combines the not strong walls, aged sleeping buildings, non-preventative strategy equipped prison gates and the inappropriate prison layout.

Custody

The custodial system is crucial to prisoner escape because the good system starting from the entry into prison can increase the effectiveness of custody in a bigger

level i.e. classification of prisoner, electronic equipment maintenance, building and contraband inspection, the night patrol shift in prison, prisoner number counting, custodial measures and emergency incident prevention, custodial measure prisoner outside prison setting, prisoner visitation and contact tot the outside world.

Prisoner population change

In the past, most of prisoners committed larceny due to the fact that prisoners came from lower class group of the society such as the poor and the disadvantaged. Prisoners mostly can be identified as criminal with unintentional deed also they were drug addicts. Until B.E. 2545 the government announced crimes under the Narcotic addict Rehabilitation Act, B.E. 2545 (2002), as a result most of prisoners were sent to be rehabilitated outside prison. The department of Corrections faced a major change in number of prisoners and characteristics of inmate which later caused difficulty in prison management (Thairath Newspapers, 13 May B.E. 2555). The new characteristics of prisoner can be described as follows; drug connection dealers, dangerous criminals, being educated, having influence on power and money outside prison, connecting to the drug network. These characteristics facilitate illegal conduct in prison, in particular the illegal smuggling contraband, which are essentially mobile phone and illegal drug, into prison.

Environmental arranging

In terms of official's custody, prisoner escape prevention can be shown through Jeffery, C. Ray's environmental arrangement for crime prevention. He points that a good environment design can properly prevent prisoners to escape from prison effectively (Jeffery. 1971: 59). The 4 factors of environmental arrangement for crime prevention are as follows;

1) Natural Monitoring: the concept is by nature prisoner does not want to be seen or memorized this/her figure or face, therefore the environment equipped with available light and open can prevent prisoner from committing such disturbing acts.

2) Natural Enter and Exit Control: the concept includes the use of wall, gate and door to control the section of areas in prison. Moreover, the clear area along the wall and short-sized tree can be considered as a mode of control.

3) Area Zoning: In prison, zoning can be well used for segregation people from restricted area and control zone through signing, fencing or using water way.

4) Effective Management: Officials and involving persons have obligations to custody and manage environment to have the least level of prisoner escape risk.

Besides, theories and concepts of environmental arrangement for crime control can prevent any act violating the laws. When the term ‘environment’ used in this context, it means 3 different aspects i.e. solid environment; abstract environment; and physical environment affecting human behavior (Purachai Piamsomboon, B.E. 2536: 4).

The solid environment pays intention to surrounding environment which is tangible for crime control e.g. city planning, electronic equipment in custody etc. Brantingham and Faust (1976) also state that crime prevention can be done through environment design for example, planning the visible building, lighting and equipment installing.

In conclusion, the environmental arrangement for crime prevention can analyze the adoption of electronic equipment in prison work since prison is regarded as a place where functions as custody of different ranges of severity of offenders. Hence the design of prison is to prevent all possible escapes of prisoners and monitoring for special type of prisoners.

Prison design means all structures and electronic and non-electronic equipment used in prison and correctional institution designing for most effective prevention of prisoner escape.

Prevention in this context means not only the prisoner escape but also the custody inmates to be abided by laws and regulations. Recently the department of Corrections encounters the contraband smuggling into prison via postal parcels, throwing over the wall, and carrying by some officers. Mobile phone, in particular, is considered as one of the most problematic smuggling across the country. The sanction and measure, therefore, are harsher for all prevention of occurrence of such act.

The introduction of electronic equipment for custodial work can reduce relation between prisoners and officials to some degree, because as the matter of fact the relation leads to motives or opportunity for committing unlawful acts. The electronic equipment cuts all potential period of time to conduct unofficial contact. Also it can be used for security protection when situation is driven to danger or in the case of prisoner escape.

Technological adoption in international prisons

United States and Europe

Based on the study of the Justice Policy Institute, USA, the prisoner management has the shown statistics, that is, approximate 2 million prisoner population from entire population of 275 million people. That is to say, there are 700 prisoners in every 100,000 persons. Moreover, persons on probation are about 3.26 million people; persons on parole are 385,000 persons, which make up to 6 million persons in total. In the United States, the prisoner management is under the government. The statistics show that 5 per cent of male inmates are above 18 years old, and 1 fifth are considered African American. In comparison to Europe, the entire population of Europe is at 375 million people (Eurostat), when there are 400,000 inmates in prisons. That is to say, there are 100 prisoners in every 100,000 persons.

Regarding the offender database of the United States, it reveals that the newly-built 213 prisons under the President Bill Clinton government with exclusion of private prisons, the prison officer number in federal prisons increased from 264,000

to 347,000 or the growth rate of 31 percent when entire prison officers are over 600,000.

In Europe, the countries such as the United Kingdom and Northern Ireland adopt the concept and electronic use for security prisons from the United States. The United States has a high severe rate of urban crime. The Earl Warren Legal Institute University of California, Berkeley for the government continually conducts the monitoring study of crimes in the city and report to judicial officers through the tax payment and the lower employment rate which considered as relating to the social protection and security. Whereas in the Europe, based on data from WACQUANT there are higher increase of prisoner in nearly all countries of the region e.g. Wales, Germany, France, Spain, Portugal, Netherlands, Belgium, Austria, Greece, Sweden, Denmark, Finland, and Ireland. In between 1980 and 1997, imprisonment rate expanded as seen on the table 1.1

	1983	1990	1997	Variation
England – Wales	43,415	50,106	61,940	+ 43 %
Germany	62,525	48,548	60,489	- 4 %
France	39,086	47,449	54,442	+ 39 %
Italy	41,413	32,588	49,477	+ 20 %
Spain	14,659	32,902	42,827	+ 192 %
Portugal	6,093	9,059	14,634	+ 140 %
The Netherlands	4,000	6,662	13,618	+ 240 %
Belgium	6,524	6,525	8,342	+ 28 %
Austria	8,387	6,231	6,954	- 8 %
Greece	3,736	4,786	5,577	+ 49 %
Sweden	4,422	4,895	5,221	+ 18 %
Denmark	3,120	3,243	3,299	+ 6 %
Finland	4,709	3,106	2,798	- 41 %
Ireland	1,466	2,114	2,433	66 %

Source : Pierre TOURNIER, *Annual penal statistics of the Council of the Europe, 1997 study*, Strasbourg, Council of the Europe, 1999 ; extract from the book of Loï c WACQUANT, *The prisons of misery*, Le Seuil, Dijon, 1999, pp. 97 and 149.

Table 2.1: Prison inflation/deflation in the European Union Period 1983-1997

The expansion in numbers show that criminal penalty and imprisonment make prisons overcrowding and all risks and challenges in management fall onto prison officers. Therefore the facilitating factors that can support and develop the work to be in progress are: privatization and technology usage.

Privatization can be done through several activities in prison, which may not call as a new phenomenon. As the 19 century, services and rental contract were used by prison officers and private sector (Private prison) for prisoner transportation service, prison labor use, and technological adoption.

However, in the early 18 century, there were attempts from many countries to transport prisoners and fully managed conducted by the private sector. The available factors for the introduction of private partnership to prison are in these following forms; the rise of prisoner population, monetary crisis, and low governmental budget, as a result the rationale of privatization generated in the US and UK. While in the United Kingdom, the conservative party considered this phenomenon was a crucial agenda, the United States handled the coming of privatization as a pioneering country at that time.

Furthermore, the cost-cutting rationale is taken into account by many governments. In the European countries, innovation was more considered than the technological selection.

In the United States, prison privatization had a resilient development in the mid 18 century particularly in the Southern part of the country. There was a growth in industry in the rate of 35 percent each year. Charles Thomas, professor in Criminology at Florida University, noted that in 2000 there were 5 small companies operated 120 private prisons in the United States, of which 120,000 prisoners under the management (approximately 6 percent of total prisoner population of the United States).

As a consequence, for managing a large number of prison populations in the cheaper cost and preventing all sorts of risks that may arise, the use of technology has been the opted alternative.

Surveillance Technologies

EM (Electronic Monitoring): The control of offenders by the use of EM is done by the electronic equipment method which sends the signal from one to another, or receiver. The EM comes in the shape of bracelet which can be attach to arm or leg of offenders or onto person who is restricted to access to some zone. The EM is installed at places such as hospital, house, or any others which gives the signal when offender enters into the restricted zone or area. The officer then shall receive the signal and can promptly respond to the action. Once the investigation completed measure of such minor act can be implementing such as the use of short-term imprisonment in their house or located place, not prison. The essence of the use of EM is for the minor or not severe crime. However, the critique says that the use of EM is not approved that it can prevent future crime of the kind.

United States, the first country improving the EM development for the custodial work and prisoner escape prevention, tried to use with juvenile in 1971 and later in 1983 there was an officially used in Florida. The 2 systems of electronic equipment are as follows;

1) Controlling machine sending signal to the operation base. This can prevent prisoners from escaping the area. Most of the case, the machine is attached on the telephone, and the signal will be sent through the phone call when there was any emergency incidents happening.

2) Controlling machine sending interval signal for inspection. The machine is installed in the different locations out of the office for checking the other machines in the area whether they function properly or not, the information will be therefore recorded in the machine for officer to check on patrol guard.

RFID (Radio-frequency identification) is the data collection or automatic identifying process by receiving signal from tag to the sender via wireless wave. Normally, the tag of TFID is small so as to attach to the product or person. When the signal sent and tag found, the signal will be sent back with the recorded data kept in tag. The RFID tag combines the electronic circuit and antenna which can be adapted to the EM system.

The Video Surveillance

The CCTV system is the use of video recording files to the CCTV. It can be used in public and private areas including prison. The system employs the biometric technology or by recognizing face, behaviors for example. The picture is complete and high efficient for communication between officers and prisoners. Also it can retrieve as many times as wished.

Neutralization Technologies

This is a non-lethal weapon and uses few officers to operate. The benefit of the non-lethal weapon is harm to no officer. The origin of introduction of the army was from prion privatization in the United States which cut cost and number of staff working.

Laser Dissuader

It is the invented equipment with the shape of torch shading the red light. The System Engineering Associates Inc. (SEA) with the sponsored by Phillips Laboratory of US. Air Force studied the production in capacity of 650 Nanometer distance. The equipment has 2 systems; the continual and nom-continual laser dissuaders. The monitoring focuses on offenders for escape prevention and for security reason. The working method is done by laser sending to the eyes for the temporary blind the offenders. This equipment is non-lethal weapon and does not harm to eyes health with the US. Food and Drug Administration certification.

Biometric

It is a bio-technology for proving identification of person by detecting the physical and/or behavioral information e.g. fingerprint, palm, and voice, iris of eye, retina, face, DNA and signature. These technology machines are available in application such as the fingerprint scanner which can be divided into 1) Capacitive Senso 2) Thermal Sensor 3) Finger Print and iris scanner etc.

Stunning Technologies

This is the machine that pause all the movement of a person which is called ‘Stun Belt’. The using method of the belt is to put around the waist of the

person and used with the remote control. The effect of the use of the 'Stun Belt' can shock that person who wears it. There are 2 types of the 'Stun Belt' as follows;

1) The High Security Transport Belt (HSTB) is for the hardcore prisoner transferring.

2) The Minimal Security Belt (MSB) is for general prisoner transferring to court hearing.

Air Taser

It derived from the full name of Thomas A. Swift's Electric Rifle, the aerified-bullet gun specifically designed for the firing offenders by sending the 25,000 Voltage shocking. The TASES' ms International Inc. produces high effective products under the brand 'TASES' which is well regarded in the United States and in the international level.

Sticky Shocker

It is an armament developed by JAXCOR and budgeted from NIJ & DARPA using in the range of 10 meters. The bullet has the small wire in the anchor shape to attach the skin of offender, inside of the bullet there is a low battery for charging electricity to shock in the 50,000 Voltages. The sizes of the gas or gunpowder-pressured bullet come in the M102, and M79 or SL-6.

Capture Net

Originally, it is the applied armament from the animal hunting or stopping. The capture net is for discontinuing all offending of person by the electronic shocking. The development of the capture net is completed by the Foster Miller, Inc WebShot ™ NET with the sponsor by the NIJ. The coverage area is by 12.5 centimeters and 3.8 centimeters. It is fired by the gun by the 30 meter shot radius. The new model comes with the pepper gas or releasing 60,000 Voltages electronic shocking. In the future, the NIJ continues to research to develop the product in the baton shape for the capture net.

Chemical Incapacitating agent

It is a chemical armament, particularly tear gas. However, the natural materials e.g. pepper spray, chili spray show the effective results. In some prisons today, the Automatic Sprinkler is used and controlled by the control room.

Future technology for the custody and prisoner escape prevention

The technology uses with offenders as following;

1) Immobilizing agent

The sticky-foam loaded armament is for stopping movement having 2 types as follows;

-A condensed polymer: when it is emitted, the air interaction can create a transformation of the sticky foam. The foam functions to discontinue all movements.

-A Super adhesive liquid substance: it is sticky glue for the obstruction by the quick transformation to the solid object as to discontinue all movements and weapons.

This technology is developed in the Sandia laboratory, where the 12-meter shooting polymer foam is produced. This foam is non-toxic, however if it is eaten or inhaled, it can cause danger to life.

2) Acoustic Devices

The acoustic device is the armament, which emits the sound energy to destroy auditory nerve by the sending 20-20,000 frequency Hertz for disturbing and stimulating infrasonic. The infrasonic can result in dizziness, nausea sickness and sedation. Generally, the 16 frequency Hertz can cause the feeling nauseated, discontinuing in eyesight, having uncomfortable sensation. In some case, it can cause death. However, the shape of the equipment is rather long; subsequently it is not convenient at hand.

3) Optical Devices

The optical device is the armament that emitting strong beam of light to eyes by the 1-20 frequency Hertz. The device can normally cause the

feeling nauseated, temporary discontinuing in eyesight, having uncomfortable sensation.

4) Devices Affecting Behavior

The Devices Affecting Behavior is the equipment that affect to the physique by making feeling nauseated and headache etc. It functions in the 5-15 frequency Kilohertz sound filed. The sound and light produced by the device can create the disturbance to the psychological and biological systems and impact to the memory system also.

India

India implements the usage of technology as this following;

Mostly, India employs the Digital CCTV for the monitoring, at the moment there are 250 CCTV installed for detecting the movement of offers and inmates in individual prison.

The quick react team has totally 4 sets for managing emergency situations.

The X-ray instrument is selected to use for inspecting the contrabands and it can reduce the strip searching.

The use of Ultra-Modern Search Lights on the prison tower is for the night inspection.

The installation of Mobile jammer in 7 prisons is for interruption the unauthorized mobile phone use in prison in all forms. The distance of the jammer is around 50-60 meters. In future, the installation project will continue to expand to more prisons.

The Bio – metric Finger Identification system is for prisoner identification which is important from the process of court hearing to prison release.

The data recording and photos of inmates are operated under the telebooking for the 10 day advance booking for prisoner visitation.

The VDO Conference is installed for replacing the transportation prisoner to court hearing as usual.

Singapore

Innovations in correctional work of the Singapore's department of Corrections has the "E-Management System" which emphasize in the custody and rehabilitation responsibilities by the data recording history of the individual inmate including data from physician and other important information regarding the inmates. The information obtains data since the first entry into prison and continues until the releasing from prison. By the use of the "E-Management System", it improves the Singapore's department of Corrections system and receives the 1 of the 50 best organizations in the information technology adoption in work. Besides, there are 3 Prison Link Centers in Singapore, which is in Changi prison (situating on the Eastern side of the country), Jurong prison (situating on the Western side of the country), and Toa Payoh prison (situating on the midland of Singapore). The prisoner visitation can be done through the teleconference system for facilitation to all visitors/ In terms of the advance booking, it can be done by the self-service kiosks.

Australia and New Zealand

Prison needs to adjust to changing situations for ensuring that the adoption of technology can be best fit to prison. Furthermore, the personnel trainings both for knowledge and skills for the implementation in the daily correctional work, together with the advanced technology can assist in the high effective work product. The crucial factors indicating the success and failure in the technological adoption are as follows;

1. The adoption of technology in prison for custody and prisoner escape prevention and standard program for specific management and the correctional staff training need to be prepared for ensuring the successful and sustainable development.

2. The use of external information by the technological research and development is to be prepared for the effective alternative and decision assessment.

3. The necessity and according method, quick process of working, proactive strategy for the development correctional technology is to be prepared for the most effective outcomes.

The integration of information and intelligence in the correctional works includes the integration of intelligence sources in Corrections, police, drug reports etc. for the management and response to crimes today. The “i2” and “iBase” software were used since February B.E. 2552 for the intelligence analysis, prior to that the manual system was widely used. The new software has the function of the data creation and storage. The advantage of the software is to be conveniently viewing and analyzing the data. Moreover, it relates the data and information of inmate e.g. visitor name, telephone number for visitation booking, etc. The integration of the information can be operating at individual prison; therefore the proactive manner of work will be easily operating than the previous reactive manner.

Soter: is the X-ray body scanner. It is for contraband detection which can be replaced of the strip searching.

The use of Radio Frequency Identification or RFID, the radio frequency signal, is for the detection or identification of the position of inmate in prison. The cost of the device starts from 20,000-30,000 Australian dollars for the renovation and improvement of the software system. The usage of the i2 software can be arranged by the 5 days of training of the composition of the Database and another 4 days for the training of the data analysis composition. However, the disadvantages of the software are e.g. the quickness of the analysis and the receiving of the data, so that the operator of the software requires being competent to use the software.

In 1960, prison brought in the CCTV system for security protection and monitoring inmates in prison which considered as highly advanced technology at that time. In the New South Wales prison (NSW) it is created by 1970 in the nickname of

the Electronic Zoo since the building of new prisons for the expanding prisoner population used a large amount of the public spending for the settlement of the technology in high security prison so as to prevent prisoner escape and for public security.

The security of the NSW prison, prison gates are run electronically which is a modernized prison in NSW, Victoria (Vic) and the New Zealand prison e.g. Parklea (NSW), Jika Jika (Vic) having built with the most advanced technology for security protection and having the first main control room for monitoring inmates in prison.

The correctional work in Australia, New Zealand and other countries around the globe encounter the pretty sophistication and new techniques in the security protection for prison authority and public. The warning system is installed in prison and community to give a signal to public in case that any emergency needed.

Technology used in prison such as biometrics, iris detector, mobile phone detector is the fundamental technology available in prison and correctional institutions across the country. The further study shows that the prison riot and law violation in prison indicating the new challenging phenomenon in the present time as follows;

1. High-priced technology
2. Worthy investment
3. Entire system unfit to the environment
4. Standardization
5. Access to research and development of other countries
6. The best experience comparing to the best practices and the core budget factor

The national and international trend of the correctional and justice work, the commission gives an important stand to the research and development of the technological use in the area of criminal justice system. For example in the United States there is an organization named The National Law Enforcement and Corrections

Technology Centre (NLECTC) which is founded in 1994 as the science and technology institute for assistance and support provision to the use of technology in prison and for effective security protection for the prison authority.

NLECTC (2009.) identifying the importance of the adoption of technology as follows;

1.The productive detection of contrabands.

2.The searching and blocking telecommunication system (mobile phone using prevention).

3.The prison officer examination e.g. coding, address.

4.The prisoner's address searching and following up.

5.The quality warning system.

6.The language decoding equipment.

7.The improvement of integrated information analysis and information sharing between organizations under the criminal justice system and the security organization.

8.The manual and recommendations for the operation in prison via the website access.

In Australia and New Zealand, the National Working Group to Monitor Emerging Technologies (TWG) was founded in 2004 as a platform for exchanging knowledge and technological advancement in the prison and correctional institute for sustaining the fair and effective manner. Some states were called "Stat of the Art" where the technology is not perfectly adopted to implement.

TWG identifying the importance of the adoption of technology as follows;

1.For mobile phone using prevention

2.For national website creation

3.For illegal drug detection

4.For the information technology procurement

5.For in-between organizational data integration

Technology is regarded as fundamental to future of the correctional work, as a result the understanding and acknowledgment of the information is prerequisite as follows;

1.The acceptation through the organization (TWG) regarding characteristics and criteria of the condition for decision making in the adoption of the technological use in correctional work, which includes the details and information of the budget and best practices.

2.Appointing the expertise of the project and setting the funding for the propelling and collaborating to the project.

3.Applying in the appropriate time and model for the proactive strategy in the use of technology

4.Connecting between the TWG and contractors e.g. NLECTC

In conclusion, data integration and technological access for the approving the appropriate technology to the environmental setting of the prison especially to avoid the unused condition of the technology, and the effective custody and prisoner escape prevention.

Technological adoption in Thai prisons

In the fiscal year B.E. 2553, the Department of Corrections set the policy emphasizing on administrative and developmental corrections under the director general considering the connection to the 10th National Economic and Social Development Plan (B.E. 2550-2554), governmental policy, Ministry of Justice policy and the Department of Corrections policy for the operation practice for officials under the Department of Corrections plan B.E. 2551-2554. In brief, it can break into 4 main matters as follows;

1. Prevention and Suppression of drug in prison it can be achieved by the emphasizing on the difference of prisoner treatment e.g. the hardcore drug dealer prisoner, networking of drug connection in prison, for the suppression of

all connections and activities involving drug trade in prison, here there are 2 phrases as follows;

1.1 Long-term measure: the strategy is to stress on the building and renovating high security prisons for accommodate hardcore prisoners e.g. hardcore drug dealer prisoner, networking of drug connection, long term imprisonment prisoners, and hard to control prisoner etc. The plan is to put some technology system to aid the management of the prison to keep custody and prisoner escape as low as possible.

1.2 Short-term measure: it can be done by these following;

1) The establishment of the high security area located in Dan 9 and Dan 10 of the Central Correctional Institution for Drug Addicts as for taking hardcore drug dealers into custody with the use of technological system under the special management of particular trained prison staff.

2) The strict system of the drug prevention and suppression operating system, which can be conducted by the unofficial contraband searching in prison at time. It also can be done to the prison official, and urine examination for illegal drug contamination. This is to protect the pride of the Department of Corrections and to prove the professionalism of the staff, in any illegal involving cases, laws and orders shall be enforced in the criminal lawsuit.

2. The New Public Management introduction in corrections: it is a solution for encountering problems of the organizations e.g. overcrowding prisons, negative image of the Department of Corrections, social acceptation, effectiveness in correctional work, transparency in correctional work, and the rapid change of globalization age. The new knowledge and technique in the correctional field e.g. privatization can also be useful to consider as it can reduce the number of prison officers and to replace with private sector to operate some extra work for prisons such as prisoner transportation, drug addict treatment which can be done in the regional level of the civil service operation. Besides, the cooperation with the community can also be proper to administrate prison if there is the standardized assessment system provided across the country, therefore there shall be a custody and professional rehabilitative development for society.

3. Development and welfare for civil servants: the competency development of prison officers to reach and attain the professional quality level for inmate treatment by training and other forms of knowledge provision for prison officers. Furthermore, the supporting of the adoption of the Sufficiency Economy under His Majesty the King Bhumipoladulyadej's philosophy to conduct a living in a moderation, sufficiency, rationale and immunity for morality and virtue. On the other hand, solid support from the correctional system shall be offered to the officers such as the accommodation, equipment and instrument for supporting correctional work, payment and other facilities for developing good health, family and society of the prison officers.

4. Penological measures: for the development and operation correctional system with high effectiveness, the proper prison design and area development to suit to the correctional objective is the most important factor for the custody and rehabilitation of inmates. The classification of inmates is the first process after taking inmates in the correctional setting. The prison officer development program is to be supported as well as the assistance of the good quality custodial equipment and instrument e.g. CCTV, communicative radio, non-lethal armament for officers, transport vehicles, and so forth. Furthermore, the improvement of relation and cooperation between neighboring agencies under the criminal justice system shall be enhanced for the support of the standardization of inmate treatment and correctional operation across the country. In terms of the principles that influential to the conduct of correctional management such as penological, criminological, human rights, minimum standard of the treatment of prisoner of the United Nations recommendations on the prisoner treatment shall be fully operating and emphasizing resources to prisons and correctional institutions to prepare for better quality of lives of inmates. Regarding technology, the innovation and electronic equipment such as the Video Conference can facilitate prisoner, visitors and court by reducing the distance of the prison for reaching to court or from family member to visit inmates. The Department of Corrections set the Chiangmai center for the convenient prisoner visit for the Northern region.

The Department of Corrections realizes the great essence of having the long term inmates and serious-crime offenders, drug inmates and other hardcore prisoners; therefore the development of the specific treatment for this particular group of prisoners is to be emphasized in terms of the establishment of the high security area for the segregation of the high security type. Moreover, it also can be employed with the prisoners who develop the worse behavior in prison and those who attempts to escape from prison territory.

The Video Surveillance

Nowadays, prisons across the country are installed the CCTV system for monitoring internal and external security of prison. Also it is for detection of prisoner escape from especially those hardcore and long-term sentence prisoners etc.

Video Conference System

Since the Department of Corrections faces the overcrowding state of prisoners, it affects to the work of correctional staff greatly. The improvement of the system and management of prison, also the use of technology can help lessen the responsibilities of staff than before.

The video conference system is a television like communication mode serving for the Department of Corrections. It is a two way communication which can reduce the cost of operation in other manner such as it decreases the fuel cost for inmate transportation and for less risk of prisoner escape because it deals with no movement nor transferring. Besides, when inmates have to go to court, they have to put on the restraints on their body with the respect of prevention them from escaping from prison officer custody. As a result, the public perception to the use of restraints gives a negative impact to the understanding of the Department of Corrections to some degree.

The committee of the Criminal Justice Cooperating 2/2542 concluded on 27 October that year that the approval received the rationales of the teleconference system for the correctional work project. This project connects between prisons/ correctional institutes and courts for reduction the duty of prisoner transportation from

prison to court and vice versa including the staying of prisoners at court. This cut down a great deal of duties of prison officers. It can be done in 3 forms which are as follows;

1) The teleconference through the AV Signal line which is known as the VDO system.

2) The teleconference through the integrated services digital network which is known as the ISDN system.

3) The teleconference through the internet. These 3 forms are installed with the equipment enabling picture and sound signal receptions.

Information technology

Prisoner Information technology is the computerized and advanced technology arrangement of all prisoner data files as to increase the operating effectiveness in prison and correctional institutes across Thailand. At the Department of Corrections headquarter, the main host computer connecting to all prisons and correctional institutes around the country including other involving agencies such as the Ministry of Justice, the Criminal record registration division, the Police Department, and the National registration Division etc.

The prisoner record registration program receive data sent from prisons and send it to the Department of Corrections headquarter for assuring data at the same database and for safety of the information. The program recognizes and gives only right of the user by regulating the Username and the Password of each person. At the meanwhile, the system manages the record of the user's access of date, time, name of prison and the allowed information for the responsibility of each person and prison. The prisoner record registration program consists of all works in prisons or correctional institutes where prisoner received.

The works range from prisoner classification, law-case-in-between works, prisoner visitation, prisoner leave, prisoner training, prisoner health and medication records, prisoner public work, prisoner transferring, prisoner social service and welfare, penalty, disciplinary punishment, prisoner individual Royal Pardon petition,

prisoner behavior assessment for reward and punishment, prisoner release, and statistics relating work.

Prisoner's Electronic telephone card service

The service of the prisoner's electronic telephone card by the Department of Corrections facilitates living condition in prison for inmates and families. This could bring the decent rehabilitation program to prisoners which being incapacitated. The telephone number of relatives of inmates limits at the maximum 5 numbers in order to check the numbers whether the intention of the phone call making have anything relating to security or illegal act i.e. illegal drug connecting, prisoner escape plan etc. There are at present 130 prisons and correctional institutes installed with the prisoner's electronic telephone card and there are 4,600 service recipients from the service.

Block Phone

Currently the Department of Corrections incapacitates a number of illegal drug relating prisoners and serious crime-committing prisoners as well as hardcore drug dealers. These connections continuously occur within prisons. The Department of Corrections seeks solution to set the Special Unit within prison for hardcore custody. Besides, the operation of the Special Unit is through the special measures and mobile phone operation jammer.

X-ray Machine

The x-ray machine installed in prisons is used for belongings, parcels and contrabands. The machine projects the picture of objects that kept in the belongings for the officers to clearly see the details.

Metal Machine

The metal machine can detect metal in several forms e.g. on wearing cloths, weapons etc.

Scan Document

The peripheral detects the pictures, writings, and other forms of symbols in the scanner reader and picture file and in the written file, which called 'image scanner'. The scanner is the input electronic equipment for the information files that incapable to be input by the computer keyboard e.g. prisoner history profile, prisoner letter, relative letter, and other documents etc. The scanner can be used directly as transforming data to the computer, processing machine project the picture on the monitor for back-dated checking and for investigation process.

Phone Record

The recording system connecting to the intra-telephone system within the visiting room, which is the location where separated by the specially-thick glass or security iron bar. The phone record is for recording the conversation of prisoner and visitors.

Relevant research

Saowapen Jumpapao (B.E. 2546) studied "The adoption of information technology for correctional administration: opinion of prisoner officials in prisons and correctional institutes" which has the objectives for study the opinions of the prison officers towards the adoption of information technology for the correctional administration and factors of relations with opinions of prison officials to the correctional administration. The sample groups of the research are 306. The questionnaire is the tool for data collection, and data analysis by the Ready-Made Computer Program. The statistical technique employed in the study is the percentage, mean, standard deviation, analysis of variance, and multiple classification analysis at the 0.05 statistical significant levels.

The research result found that most opinion of prison officials is agreed for the adoption of information technology in the correctional administration. In the preparedness of the computer skill is moderately agreed. In the knowledge of the

information technology is highly agreed. In the perception of information technology is highly agreed. In the support of the equipment is moderately agreed.

The hypothesis testing reveals that gender, age, education level, position level, position in computer-relating skills, information technology knowledge, and equipment support have no statically significant relation to the opinion of prison officials towards the adoption of the information technology to the correctional work. On the perception of information technology and acceptance of the information technology, it shows significant relation to the opinion of prison officials towards the adoption of the information technology to the correctional work at .05.

Amporn Poonsiri (B.E. 2548) studied “Satisfaction of the pilot project of the teleconference system for prisoner reception in Bangkok area”. The research has its objectives to study opinion of the satisfaction of involving persons and obstacles of the project. The study also seeks solution and prevention strategies to such problems found. The researcher employed the documentary and fieldwork data collection in the research, by the questionnaires of the sample groups especially the officers in the criminal justice system in Thailand who have experience of the use of the teleconference system for inmates. The samples are judges from the criminal courts, Southern Bangkok criminal court, Thonburi criminal court, correctional officers, and inmates from Bangkok Remand Prison, Thonburi Remand Prison, and Central Correctional Institution for Drug Addicts, Woman Central Correctional Institution and Thonburi Woman Correctional Institution. The research used the percentage, mean, standard deviation and content analysis and table explanation.

The research results reveal that judge, correctional officials and prisoners share the same opinions that the teleconference system is the advance technology and appropriate for the use of prison reception to be replace the previous system, which would help reduce the burden of duties of prison officers and to enhance the custodial work of the officers to be more effective and efficient.

Besides, the system would be brought to use for the prisoner escape prevention or prison riot situation, and contraband prevention in prison, including the overcrowding in court areas. However the obstacles of the bringing of the teleconference are the unaware prison officers of the advance technology, the old-state building and prison setting including equipment used in prison. The elements of the successful implementation of such technology are public relation in prison regarding the new technology for educating prison officers to be aware of the teleconference and its benefits to routine works.

Annop Sucharitchan (B.E. 2533) studied “Opinion of criminal justice personnel towards the Electronic monitoring use in Thailand” which has the following objectives; gathering opinions and recommendation of the criminal justice officers to the use of the electronic monitoring equipment. The research conducted through the documentary study and the fieldwork study with 5 research population groups; judge, attorney, policeman, correctional officer, and probation officers. The total numbers of the sample groups are 164.

The research results show that there is no knowledge of the use of the electronic monitoring in the country before of 78.7 percent. The rest of 21.3 percent are those who have known or heard about the electronic monitoring equipment from textbooks, documents and mainly books. Regarding the petty crime, there are 62.2 percent of the research population see that the minor crime can be imprisoned within 2 year term. The examples are traffic offences, unintentional offences, argue and fighting offences.

The offenders in such crimes are persons who have regular minds and can be rehabilitated to become the law abiding persons. Therefore such persons shall not be locked in prison, yet the punishment shall be not severe nor impact to the minds and physique of the offenders. The study of the alternative to imprisonment has the limitation from the court judgment. Most of the times, court prefers to use prison as a sanction for most crimes and latter are the fine method. However, the negative side of the imprisonment use is by stigmatization process imprinted in prisoners. It can

possibly lead to the hard to get acceptance from outside society on their release, and consequently it can cause the reoffending to be back to prison setting, in which later on create a phenomenon of the overcrowding prisons across the country.

The 87.8 percent of the research population agree that the use of new alternative measures for the punishment can suit to the crime better than the current measures being employed.

The rationale of the use of the electronic monitoring equipment for custody prisoners, most of the research population agrees with the use of electronic monitoring system. That is because the prisoners can live in their family and also can work normally as a part of society. However, the perceptions of most research population are still not clear whether the location of the electronic monitoring shall be used. Based on the different ideologies of the penology, the rehabilitation thought shows that there is no security of the custody by the electronic monitoring. Most of research population, nevertheless, supports the custody measure of the electronic monitoring equipment for the reason that there shall be more beneficial to the imprisonment strategy alone. The community views that the electronic monitoring system gives risk to the public, and makes punishment seem too lenient than before.

For the Thailand model of the electronic monitoring system implementation, there shall be under the enforcement of the Ministry of Justice with the main responsibility of the Department of Probation. The electronic monitoring can fulfill the more varieties of justice tool for rehabilitation of offenders and it shall be employ to the offenders under the sentence of 6 month term, and the first criminal offence because this group is likely to become a law abiding person.

Seattle (Washington) in 1973 the research project of the Neighborhood Watch emphasizing on the civil protection under the building director and coordinators. The team works to report crime to police, sign up the notice in front of the house for showing the occupancy of the house owners, and remove newspapers from any unoccupied houses and more. The first evaluation of the project of the

Neighborhood Watch was done at Seattle (Washington) in 1973 (Cirel, Evans, McGillis, and Whitcomb, 1977). Whereas in the United Kingdom, the first project of the Neighborhood Watch was called the Home Watch program in the area of Cheshire (Anderton, 1985).

The second evaluation of the project can eliminate the thief in community where the Neighborhood Watch project implemented. In the year 1980 the Home Watch Program in the United Kingdom was expanded moderately. The research report in 2000 the crime survey report or officially called "British Crime Survey" in the United Kingdom also evaluated that over 27 percent of housings or in equivalent of 6 million houses in England and Wales were member of the Home Watch Program (Sims, 2001) which created over 155,000 activities regarding the crime prevention in community.

Likewise, in the United States, in 2000 the 2000 National Crime Prevention Survey (National Crime Prevention Council, 2001) assessed that "the 41 percent of entire American reside in the community where the Neighborhood Watch were arranged or the largest location across the world" (National Crime Prevention Council, 2001).

The research of the Neighborhood Watch Project whether it suppresses crime or not shows that in some project area crimes are diminished by the project, but there are some places where the crime rate is rose. Therefore in conclusion, it is uncertain to decide the effectiveness of the Neighborhood Watch Program.

The assessment of the Neighborhood Watch program at Seattle, Washington gives the positive outcomes as from the telephoning and door knocking assessment conduction in five census tracts. The study projects that thief in local area under the Neighborhood Watch Project is less than comparing to the area where there is no community project by -61 percent and -4 percent. The researcher concluded that community participation in crime prevention can reduce risks of victimization of theft significantly (Cirel et al., 1977: 79)

The negative result of the Neighboring Watch Program in the study of Bennett and Lavrakas conducting in 10 cities of the United States i.e. Baltimore, Boston, the Bronx, Brooklyn, Cleveland, Miami, Mineapolis, Newark (New Jersy) Philadelphia and Washington. The research constructed by the assessment in advance and after the testing with the controlled group. The controlled group and the uncontrolled group were not in the same number of persons each time of assessment. The area selection for comparison was done in two census tracts. The monthly crime report found no difference between the tested areas by seven testing out of total ten testing. It founded that negative changes (meaning crime in uncontrolled area was less than in the controlled area) in two cities at Cleveland that crime rate in uncontrolled area reduced more than in controlled area, but it is one out of ten time testing. The research team concluded that the project "is unsuccessful as proposed in the objective to reduce crime" (Bennett and Lavrakas, 1989).

Latessa and Travis found a good result when assessment conducted in the Neighborhood Watch Project in College Hill, Cincinnati, Ohio. The College Hill holds the fifth largest area of the city populated by 17,000 people. The research of police revealed that theft in controlled area reduced 11 percent, while in Cincinnati reduced by 2 percent (Latessa and Travis, 1987) but Lewis, Grant and Rosenbaum (1988) conducted the effectiveness of the Neighborhood Watch Project in 5 blocks of the street in Chicago, Illinois with the result showing that the negative one. The research involving crime and public opinion, an experimental research which couple between the pre and post of the area where the Neighborhood Watch project conduct. The period of the experimental gap is one year. The research result shows that one fifth of the experimental areas has less victimization rate (rather have statistical significance). The other two places the victimization rate per one sample rose statistically significant. The research result "compulsory to research team to identify probability of both theory and project to be failure" (Lewis, Grant, and Rosenbaum, 1985).

G. Deniz DOKGOZ (2000) studied "The analysis of landscape model and prison architecture involving punishment system" which has the objective to study the

architecture and the design of landscape and environment from the past to present for making the better understanding to prison area and the effect of the treatment of prisoners and custody as well as prisoner escape prevention.

The research finding reveals that the prison seeks to continue development in form of buildings, and modern design in architecture under the architectural concept that the function of prison is different from other types of buildings including equipment.

Troy J Allard, Richard K Wotley, & Anna L Steward (2006) studied "The use of CCTV in prison setting". Previously even though the CCTV used widely in many places, but the study of the use of CCTV was not profound. Therefore this research looked to investigate the CCTV whether it prevent serious behavior of prisoners in prison. The study of situational data of 1,116 severe behavior situations of prisoners in 4 prisons in Queensland, Australia for over 6 years. The sample group from the 1st prison were 683 prisoners; the 2ns prison were 203 prisoners; the 3rd prison were 332 prisoners; and the 4rd prison were 641 prisoners. All were prisoners in secure prisons housing the maximum security prison level under the monitoring system.

The Queensland Department of Corrective Services (QDCS) collected all data which were violation of laws and prison regulations. The data can be used in court prosecution process because the data are evidences for the correctional officers. The recording system in the electronic database is called the Correctional Information System (CIS) which recorded situations, date, time, place and picture of situation into the CIS after the incident occurred. The data are sent to the mainframe database and can be proven anytime only by the authority.

On the basis of the four prisons analysis, the findings showed that the CCTV can prevent severe behavior of prisoners. The chi-square showed the difference of .001 ($X2$ (1, n=931) =23.21, $p<.001$) meaning less severe offenses occurred where the CCTV installed by 75 percent of three of four. For prisoner

fighting, the CCTV can reduce the serious harm by 41 percent; oppositely if there was no CCTV installed the reduction of serious harm can be by 59 percent. In the summary, the study pointed out that the CCTV has the effectiveness in serious behavior prevention and prisoner's severe behavior such as prison officer's severe behavior prevention; prisoner rape prevention; homicide among prisoners; psychological victimization; verbal threatening; payment of a debt demanding; thefts; threatening; robbery and other non-victim activities such as prison riot, prisoner escape, prisoner suicidal, and illegal drug usage. These activities mostly happen inside prison wall rather than in community.

STOA & GRIP (2000) which is an abbreviation from STOA: Scientific and Technological Options Assessment; and GRIP: Group or Research and Information on Peace and Security. They studied "The assessment custodial is targeting by technology" which gave the European Union the reform of prison because several pressures in situation for prisons to bring in the technology in custody and prisoner escape prevention. The European Parliament is the body who decide the use of technology in prison with effective results. The research studied the effects to detainees and relatives especially the mental impact for indicating the risks that relating to the respect of fundamental freedoms.

The findings of the research gives elucidation that the monitoring technology for prisoner tracking e.g. electronic monitoring (EM.), video surveillance and finger print that regarded successful for the purpose. The classification of the three groups of people i.e. 1) Active, 2) Passive, 3) Combined Systems. The fundamental benefit: 1) for cost cutting for the criminal justice system by the alternative punishment to imprisonment 2) for reducing the overcrowded state of prisons 3) for reduce recidivism. The research shows that the social control net-widening was known by residential. There are 3 impacts occurred i.e. 1) more offenders in correctional system and more prison which cause more fiscal budget 2) in future the implementation of EM. will be higher, but it is not probable that the prisoner reduction may happen, 3) from the experiment revealed that the EM used in houses can effect to the monitoring of lethally-ill patients and public security.

The use of EM cannot guarantee the new offense prevention, besides it can create guilt in security guarding by the choice of technology. The future development of the technology can be applied to the new technological programs such as GPS technology (Global Positioning System) with the response effect under the prisoner investigation. In the future if the EM technology can proved that it can be used in several activities for replacing the imprisonment which has less seriousness of crime and increase the 'humanity' for the greater result of rehabilitation and reduce fundamental human rights violation potential.

The video surveillance recently used in the Europe region for sending pictures to the CCTV ad coverage all area in prison and public areas. The drawbacks Link connects to the camera, which is a very small technology gadget. Also the caption of picture is rather special to the work. This may cause some negative impact from those who are under the monitoring, but the good point of it is that the connection between inmates and prison officers is decreased, which is suitable for the custody at the present time.

The implementation of the non-lethal armaments in prison can be detected by potentials of the technology for reducing risk, harm to life and death. The study showed that the prison privatization in the United States brings in new technology for increasing effectiveness and cutting cost and works. The study of the Europe study the model of criminal justice system by the study of the US and the societal demands e.g. the rising in costs and expenses, overcrowding prison, and human rights in prison awareness. Therefore the use of technology in prison shall be equipped with consciousness and respect of the relation between inmates and officers.

The literature review concludes that the treatment of offenders in Thailand is done by the incapacitation method or imprisonment. The ideology of the imprisonment derived from the Classical School of Criminology which trusted in the Free Will of the offenders.

In the past the Department of Corrections controlled offenders under the governance of punishment because the number of prisoners was not too high as the present. The punishment was to threatening inmates and people to not commit any deeds against the laws and orders. Today, changes in prisoner population and in all aspects of correctional system explain that information to management of prisoner is the key to custody and prisoner escape control. The data of offenders and the use of technology are very useful for custody and prisoner escape prevention. Also the connection of data within the criminal justice agencies is the very crucial factors for the good custody effectively.

Variables of the research

The review literature of the research shows all relevant factors that can be used in the adoption of the information technology in the correctional work in particular the custody and prisoner escape prevention as follows;

Independent variables i.e. custody and prisoner escape prevention as follows;

1.Motivation; MOTIVATION
2.Performance of staff.; PERFSTAFF
3.Building; BUILDING
4.Control; CONTROL
5.Changes Prisoner; CHAPRI
6.Environment; ENVIRON

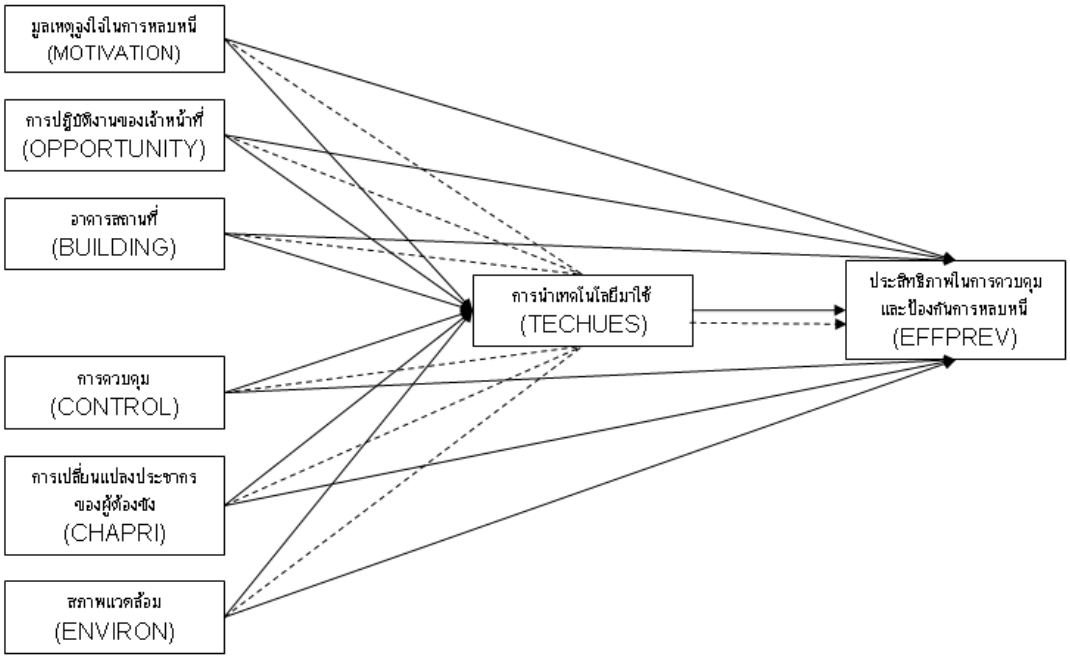
Dependent variables i.e.

1. Technology Used; TECHUSE
2. Efficacy in Prevention Escape; EFFPREV

Moreover, the researcher gathered data on the socio-demographic ccharacteristics which includes gender, age, educational level, civil servant years, and current position for explanation of the data in the research in a better understanding manner.

Research framework

Based on the literature reviewing, the researcher brought in the theories, conceptions and notions of the academia regarding the custody and prisoner escape prevention in prison for making the framework of the research as shown on the Picture 1 as follows;



Picture 2.1: Relationship between variables in model of the theories

Research assumption

The research hypotheses of this study are framed up by the relationships between variables as follows;

1.Motivation is directly influential to effectiveness of custody and escape prevention.

2.Motivation is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

3.Officer operation is directly influential to effectiveness of custody and escape prevention.

4.Officer operation is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

5.Building is directly influential to effectiveness of custody and escape prevention.

6.Building is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

7.Custody is directly influential to effectiveness of custody and escape prevention.

8.Custody is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

9.The population change is directly influential to effectiveness of custody and escape prevention.

10.The population change is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

11.The environment is directly influential to effectiveness of custody and escape prevention.

12.The environment is indirectly influential to effectiveness of custody and escape prevention through the technological usage.

13.The technological usage is directly influential to effectiveness of custody and escape prevention.

14.The motivation is directly influential to effectiveness of custody and escape prevention.

15.The officer operation is directly influential to effectiveness of custody and escape prevention.

16.Building is directly influential to effectiveness of custody and escape prevention.

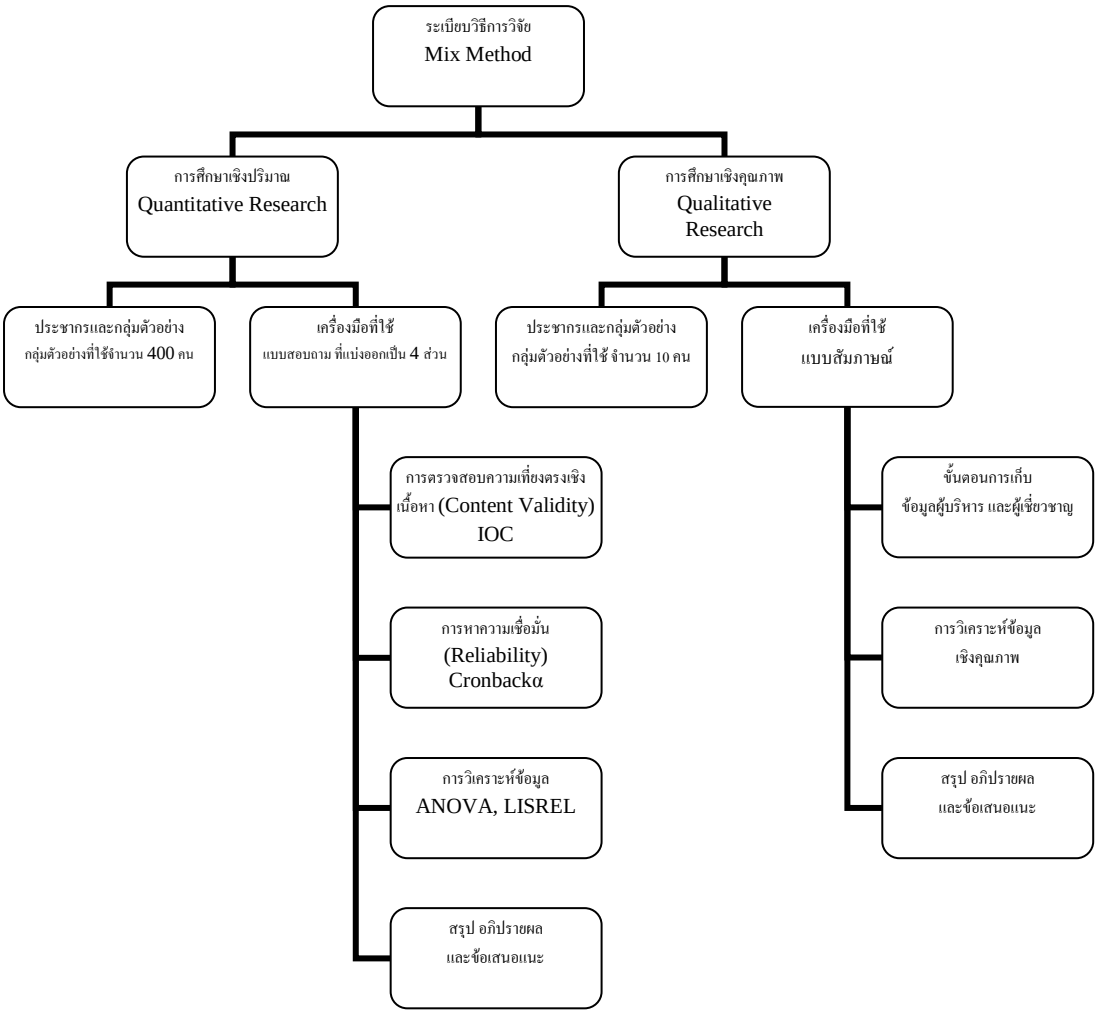
17.The custody is directly influential to effectiveness of custody and escape prevention.

18.The population change is directly influential to effectiveness of custody and escape prevention.

19.The environmental arrangement is directly influential to effectiveness of custody and escape prevention.

CHAPTER III
RESEARCH METHODOLOGY

The research aims to study the effectiveness of the implementation of technology in the custody and prisoner escape prevention in prison. The study uses the combination of quantitative and qualitative data for support and details explanation beyond the potential of quantitative data can provide. The process of the research is as follows;



Picture 3.1: Research Methodology

The documentary study is completed by the study of theories, textbooks, journals, and relating Thai and international researches.

The study is conducted by the combined quantitative and quantitative data which has research procedure as follows;

Quantitative Method

1. Population

Population is the 2,345 custodial officers in high security prisons, Department of Corrections, Ministry of Justice.

2. Sample group

The sample group is 400 custodial officers from 14 high security prisons.

3. Sample group selection

The selection of the sample group is done by the researcher from the sufficiency of data to be analyzed. (Kline 2005: 110). Generally, the greater size of sample group population, there shall be 200 people for data collection at least. For the stable research result, researcher chose to apply 400 people for the stratified random sampling method from the Central Bangkwang Prison, Central Klongprem Prison, Central Chiangrai Prison, Central Klongpai Prison, Central Pitsanulok Prison, Central Rayong Prison, Central Nakhonsrithammarat Prison, Central Chaingmai Prison, Central Rachaburi Prison, Central Songkla Prison, Central Samutprakarn Prison, Thonburi Remand Prison, Central Khaobin Prison and Central Correctional Institute for Drug Addicts. After that each prison data was to be sample random sampling from the custodial officer registration office by the ratio of 6:1 out of the 2,345 population divided by 400.

Table 3.1: Sample group size selection

Prison/ Correctional institute	Total Population	Sample group (person)
1. Central Bangkwang Prison	308	53
2. Central Klongprem Prison	276	47
3. Central Chiangrai Prison	151	26
4. Central Klongpai Prison	170	29
5. Central Pitsanulok Prison	137	24
6. Central Rayong Prison	105	18
7. Central Nakhonsrithammarat Prison	170	29
8. Central Chaingmai Prison	148	25
9. Central Rachaburi Prison	106	18
10. Central Songkla Prison	105	18
11. Central Samutprakarn Prison	128	22
12. Thonburi Remand Prison	208	35
13. Central Khaobin Prison	100	17
14. Central Correctional Institute for Drug Addicts	213	37
Total	**2,345**	**400**

4. Research tools

The research tools come from the review of theories, conceptions and research regarding technology in the custody and prisoner escape prevention. It used the questionnaire as the research tool for study the holistic picture in quantitative data.

The questionnaire can be divided into 5 parts, which are as follows;

Part 1: Personal data (Check List)

Part 2: Experience of custody and escape prevention (Sami Question and rating scale)

In case that the questions of the rating scale

(1) Means the least

(2) Means little

(3) Means moderate

(4) Means much

(5) Means the most

The interpretation of the mean, experience of the custody and escape prevention in prison can be interpreted by the researcher in individual aspect as follows; (Boonchom Srisa-ard, B.E. 2535)

Mean 1.00-1.49 means the least

Mean 1.50-2.49 means little

Mean 2.50-3.49 means moderate

Mean 3.50-4.49 means much

Mean 4.50-5.00 means the most

Part 3: Data on the usage of technology in custody and prisoner escape prevention in the rating scale

(0) Means there is no usage at all.

(1) Means there is little use e.g. use 0-1 day a week.

(2) Means there is little use e.g. use 2-3 days a week.

(3) Means there is moderate use e.g. use 4 days a week.

(4) Means there is much use e.g. 5-6 days a week.

(5) Means there is most use e.g. use 7 days a week.

The interpretation of the mean in the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison. The researcher interprets in each aspect as follows;

Mean 0.00-0.49 means there is no usage at all.

Mean 0.50-1.49 means there is the least use.

Mean 1.50-2.49 means there is little use.

Mean 2.50-3.49 means there is moderate use.

Mean 3.50-4.49 means there is much use.

Mean 4.50-5.00 means there is most use.

Part 4: Data in the factors of custody and prisoner escape prevention in prison in the rating scale.

(0) Means none

(1) Means the least

(2) Means little

(3) Means moderate

(4) Means much

(5) Means the most

The interpretation of the mean in the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison. The researcher interprets in each aspect as follows;

Mean 0.00-0.49 means there is none at all.

Mean 0.50-1.49 means there is the least.

Mean 1.50-2.49 means there is little.

Mean 2.50-3.49 means there is moderate.

Mean 3.50-4.49 means there is much.

Mean 4.50-5.00 means there is the most.

The data on the usage of technology in custody and prisoner escape prevention in the rating scale

The effectiveness means the custody and prisoner escape prevention in prison under the laws, regulation and discipline. It is the use of resources is limited and under the effective and efficient management.

(0) Means none effectiveness.

(1) Means the least effectiveness.

(2) Means little effectiveness.

(3) Means moderate effectiveness.

(4) Means much effectiveness.

(5) Means the most effectiveness.

The interpretation of the mean in the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison. The researcher interprets in each aspect as follows;

Mean 0.00-0.49 means there is none effectiveness at all.
Mean 0.50-1.49 means there is the least effectiveness.
Mean 1.50-2.49 means there is little effectiveness.
Mean 2.50-3.49 means there is moderate effectiveness.
Mean 3.50-4.49 means there is much effectiveness.
Mean 4.50-5.00 means there is the most effectiveness.

Part 5: Recommendations on the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison presented in open ended form.

5. Quality searching in research tools

The making and the searching of the quality of research tools are divided into 2 parts, that is the effectiveness of the tools before data collection and the pre-test before the LISREL program which has these following procedures;

Procedure 1: Prior to the making of research tool, researcher studied and surveyed the information for designing framework of the entire research by the reading of documents, theories, conceptions and relevant research, as well as interviewing the subject's experts.

Procedure 2: Making the open ended form questionnaire from the information of the procedure 1

Procedure 3: Testing the accuracy of the Procedure 2 questionnaire in terms of content of the questionnaire by given to the three key experts on custody and prisoner escape prevention i.e. director general of the Department of Corrections; deputy director general of the Department of Corrections; and the expertise of Penology. The decision of 2 of 3 of the expertise can decide on

the criteria. That is, if there IOC over .500 to 1.000 meaning the question can measure or represent the objective of the measurement. In case that there is lower than .500 meaning that the question cannot measure or represent the objective of the measurement (Utumporn Jamornmarn, p. 67-68).

Procedure 4: Testing the reliability by the internal consistency method and conducting the Cronbach's Alpha Coefficient. In case there value is over 0.7 and the value id closer to 1, showing that the measurement is most reliable (Boonchom Srisa-ard B.E. 2535: 96-97). The testing of reliability can help researcher to check individual question.

Table 3.2: Results of analysis content accuracy and reliability of the questionnaire

Variable	Content Validity	Construct Validity
MOTIVATION		
1. Sad news from home	1.000	0.791
2. Case fraud	1.000	0.893
3. Unfairness of officers	1.000	0.914
4. Debts from gambling in prison	1.000	0.958
5. Inmate quarreling	1.000	0.971
6. Freedom and home sick	1.000	0.902
Alpha =	0.827	
PERFSTAFF		
1. Careless officer operation	1.000	0.984
2. Repetitive work	0.667	0.860
3. Officer shifting	0.667	0.848
4. Inexperienced	1.000	0.976
5. Corruption	0.667	0.981
6. Contraband smuggling	0.667	0.959
Alpha =	0.815	

Table 3.2: Results of analysis content accuracy and reliability of the questionnaire (Continue)

Variable	Content Validity	Construct Validity
BUILDING		
1. Strong prison wall	1.000	0.941
2. No entry zone by wall	1.000	0.940
3. Aging dormitory	1.000	0.959
4. Aging prison gate	1.000	0.960
5. Zoning in prison	1.000	0.949
Alpha =	0.825	
CONTROL		
1. Prisoner classification	1.000	0.926
2. Equipment maintenance	1.000	0.912
3. Monitoring of contraband	1.000	0.940
4. Monitoring the guardian	1.000	0.934
5. Counting number of inmate	1.000	0.800
6. Measures for incidence	1.000	0.864
7. Visitation system	1.000	0.947
Alpha =	0.918	
CHAPRI		
1. Increasing prisoner population	1.000	0.781
2. Prisoners know laws and regulations	1.000	0.854
3. Prisoners know technology	1.000	0.951
4. Prisoners are influential persons	1.000	0.824
5. Prisoners break the laws and regulations	1.000	0.925
6. Prisoners smuggle contrabands	1.000	0.972
Alpha =	0.814	

Table 3.2: Results of analysis content accuracy and reliability of the questionnaire (Continue)

Variable	Content Validity	Construct Validity
ENVIRON		
1. Lightening and organizing space in prison	1.000	0.987
2. Prison landscape organizing	1.000	0.981
3. Block Zoning	1.000	0.994
4. Organizing unorganized area to be safer	1.000	0.980
Alpha =	0.928	
TECHUSE		
1. CCTV	0.667	0.805
2. IT	1.000	0.770
3. Video Conference	0.667	0.861
4. Block Phone	0.667	0.794
5. X-ray	1.000	0.865
6. Metal Machine	0.667	0.745
7. Scan Document	0.667	0.801
8. Phone Record	0.667	0.712
Alpha =	0.760	
EFFPREV		
1. CCTV	1.000	0.912
2. IT	1.000	0.967
3. Video Conference	1.000	0.962
4. Block Phone	1.000	0.976
5. X-ray	1.000	0.958
6. Metal Machine	1.000	0.957
7. Scan Document	1.000	0.933
8. Phone Record	1.000	0.961

The analysis of the variable of the custody and prisoner escape prevention for finding the accuracy and reliability of the passed criteria in the individual factor. That is, if there IOC over .667 to 1.000 meaning the reliability e.g. motivation of prisoner escape, if there is 0.827 the officer operation, if there is 0.815 the building, if there is 0.825 the custody, if there is 0.928 the prisoner population change, if there is 0.760 the effectiveness of custody and prisoner escape prevention, if there is 0.885 all factors of the custody and prisoner escape prevention pass the criteria of reliability.

Procedure 5: Testing the procedure 4 questionnaire with the Construct validity by the confirmatory factor analysis: CFA for finding the accuracy of the questionnaire structure.

6. Quantitative data analysis

The statistical accumulation and analysis are as follows;

1) Percentage, Mean, and Standard Deviation

2) Correlation of latent variable and regression analysis

3) Confirmatory factor analysis: CFA by the LISREL program

4) Structural equation models (SEM) for the study of the effectiveness of custody and prisoner escape prevention in prison by the LISREL program for testing and showing relation of the independent and dependent variables in the effectiveness of custody and prisoner escape prevention in prison. The researcher chose the LISREL program for testing the Path Analysis of the factors of the effectiveness of custody and prisoner escape prevention. The program analyzes the structural equation modeling: SEM and giving factor loading at the same time from the latent variable to the non-latent variables.

7. Data Collection

The letter of permission for data collection is issued by the Dean of the Faculty of Social Science and Humanities, Mahidol University for the official approval of the Department of Corrections regulations, through the Bureau of

Penology for checking the research and questionnaire, after that the Department of Corrections transfer the documents to relevant prison and correctional institutes.

Once the researcher received the permission from the Department of Corrections, the researcher can collect data by two means;

Mean 1 Researcher collects data by himself because the convenient of place e.g. Central Bangkwang Prison, Central Klongprem Prison, Central Rachaburi Prison, Thonburi Remand Prison, Central Khaobin Prison and Central Correctional Institute for Drug Addicts.

Mean 2 Researcher sends mails to Central Chiangrai Prison, Central Klongpai Prison, Central Pitsanulok Prison, Central Rayong Prison, Central Nakhonsrithammarat Prison, Central Chaingmai Prison, Central Songkla Prison, Central Samutprakarn Prison, within the 15days of returning.

The research data collection receive all 400 sample groups back as wished.

The qualitative data method

1. Population and sample group

The sample group of the qualitative data research "Effectiveness of the custody and escape from prison" selected the sample group by the purposive sampling method. That comprises the executives if the Department of Corrections i.e. director general, deputy director general, prison director and custody division directors for 10 persons in total as from the Table 3.3

Table 3.3: The sample group data of the qualitative data research

History / Sample group	Gender	Age	Education	Years of work	Position
1	male	57	B.A.	35	Director general
2	male	58	M.A.	36	Deputy Director general
3	male	5	M.A.	35	Deputy Director general
4	male	59	M.A.	37	Deputy Director general
5	female	56	M.A.	34	Deputy Director general
6	male	59	B.A.	33	Prison director
7	male	57	M.A.	34	Prison director
8	male	59	M.A.	40	Prison director
9	male	57	M.A.	35	Prison director
10	male	51	PhD.	31	Custody division director

The result from the Table 3.3 sample groups in qualitative data method mainly were male officers that is 9 male officers and 1 woman officer, that is, director general, deputy director general, prison director and custody division directors. The ages are all over 50 years old. The educational level ranges from the Bachelor degree to the doctoral degree with the over 30 years of experience.

Table 3.4: Opinion of the use of technology in custody and prisoner escape prevention

Technology used	Effectiveness						$\overline{X}$	*S.D.*	Meaning
	No	least	little	Moderate	Much	Most			
1.CCTV					2 (20.0)	8 (80.0)	4.80	0.42	there is most use
2.IT					1 (10.0)	9 (90)	4.90	0.31	there is most use
3.Video Conference	1 (10.0)					9 (90.0)	4.50	1.58	there is most use
4.Block Phone		1 (10.0)		3 (30.0)	2 (20.0)	4 (40.0)	3.90	1.10	there is most use
5.X-ray				1 (10.0)	2 (20.0)	7 (70.0)	4.60	0.69	there is most use
6.Metal Machine				1 (10.0)	2 (20.0)	7 (70.0)	4.60	0.69	there is most use
7.Scan Document	1 (10.0)	1 (10.0)		2 (20.0)	2 (20.0)	4 (40.0)	3.50	1.77	there is most use
8.Phone Record					3 (30.0)	7 (70.0)	4.70	0.48	there is most use

The result from the Table 3.4 the executives and expertise have the policy of the strategy to use technology for custody and prisoner escape prevention for the Department of Corrections management i.e. CCTV, IT, video conference, x-ray machine, metal machine, phone record were all in the high level of importance for the implementation. Whereas the block phone and scan document were on the same level.

2. Research tools

The use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison research conducts by the in-depth interviewing i.e. the questions of the policy of the Department of Corrections for the use of the

technology on custody and prisoner escape prevention; the reason of ineffectiveness in the technology use, the measure of the Department of Corrections for the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison, the factors of the successful outcomes and obstacles and recommendations on the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison.

The Quality searching in research tools

The researcher checked the quality of the researcher tools by letting the expertise that has experience on the he use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison. The expertise are 3 in total, that is the executives of the Department of Corrections i.e. director general, deputy director general, and expertise on Penology. The corrections of the questions were done after the recommendations of the expertise as follows.

The data collection

The interviewing of the research allows the answerer to freely give information.

1) The questionnaire structuring

2) The in-depth interviewing

3) The details note making of the interviewing on the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison.

The interviewing data is to be analyzed with the quantitative data for the greater understanding in the broader senses.

The interviewing can be drawn to the conclusion on the parts of practical and administrative understanding in which quantitative data cannot provide the in-depth information clearly of the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison.

3. Qualitative data analysis

The qualitative data is used mostly on the explanation of the research which gives more details insight of the information. The qualitative data helps researcher to keep all details in note making in form of word for word. The content analysis for the category setting for grouping the same or similar pattern or theme (Krippendorf in Srisombat Chokeprajakchud et al, B.E. 2545) as follows;

1) Researcher reads the interviewing materials as many times as possible to grab the main content

2) Researcher notes the analysis from the beginning until ending and other information that is interesting.

3) Researcher codes on the analyzed part by highlighting words, phrases, sentences, lines and texts.

4) Researcher sets a minor group of ideas for clustering the relevant information.

5) Researcher sets the main idea of the research findings.

6) Researcher makes the report style of explanation with the given example from the interviewing.

Table 3.5: Research tool/method linking between objectives and methodology

Objectives	Question	Tool	Outcome
1.To study the factors affecting the effectiveness and prevention of prisoner escape from prison and correctional settings.	- Personal data - information affecting the effectiveness and prevention of prisoner escape from prison and correctional settings. - Motivation - prison officer operation - custodial work - prison facility - prison population trend - societal environment	- Quantitative study/ questionnaire - Qualitative study/ interviewing and in-depth interviewing	- factors regarding the use of technology
2. To investigate the effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.	- Data regarding effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings. 1. CCTV 2. IT 3. Video Conference 4. Block Phone 5. X-ray 6. Metal Machine 7. Scan Document 8. Phone Record	- Quantitative study/ questionnaire - Qualitative study/ interviewing and in-depth interviewing	- Data regarding effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings - Level of effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings - Model of the LISREL program show the variable relationship

Time frame of the research

The period of the research conducted between March B.E. 2554 and December B.E. 2554.

Ethics in researching on human

This research gives the high regard to the ethics in researching on humans as follows;

- The research structure and questionnaire i.e. officer questionnaire and the expert questionnaire were sent to the Research Board of the Research on Human, Mahidol University for making the consideration before taking the data collection. The license of certificate of the research on human is COA. No. MU-SSIRB (B1) 2011/001.0701 on the 22 February B.E. 2554.

- The officer questionnaire and the expert questionnaire were sent to receive the acceptance from participants of the research and proven by the signature as the evidence of approval.

- The information from questionnaires, the research use the coding system for real participants and all documents are to destroy after the research completed.

- The risk of being a part of the research can be considered to continue or not continue in the research and it does not effect to work or any business of the persons.

- The personal data are to be kept confidentially from public. The research uses for the holistic picture of information, not the individual case basis.

- The research partaking provides no expenses or not wages to participants.

- In case that the benefit or impact from the research raised, the researcher shall inform without any hidden agenda.

- The research is approved by the Board of the Research on Humans in Social Science at the Office of the Faculty of Social Science and Humanities, Mahidol University, Buddhamonthon Sai 4, Salaya sub-district, Buddhamonthon district, Nakhonprathom 73170. Telephone number 02 441 9180, Facsimile number 02 441 9181.

CHAPTER IV
RESEARCH RESULT ANALYSIS

The research aims to study the factor of prisoner escape; prison officer operation; custodial work, prison facility; prison population trend; societal environment; use of technology affecting the custody and prevention of prisoner escape from prison and correctional settings. Moreover, the study looks to explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

The study uses the combination of quantitative and qualitative data for support and details explanation beyond the potential of quantitative data can provide as follows.

Part 1: primary data analysis

Part 1.1 fundamental data and sample group characteristics

Part 1.2 comparisons of experiences and techniques for the custody and prisoner escape prevention and the educational level

Part 1.3 the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings

Part 1.4 effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings

Part 1.5 problems, obstacles, and of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings

Part 1.6 factors affecting on effectiveness of the use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings

Part 2: the analysis of the prisoner escape motivation, prison officer operation, custodial work, prison facility, prison population trend, societal environment, use of technology affecting the effectiveness and prevention of prisoner escape from prison and correctional settings.

Part 2.1 the analysis of theory confirmation

Part 2.2 the analysis of variable relationship

Part 3: the analysis of variable group influence on direct and indirect effectiveness in the custodial work and prevention of prisoner escape from prison and correctional settings.

Part 1: Primary data analysis

1.1 Fundamental data and sample group characteristics

The research result of the fundamental data and sample group characteristics is done by the descriptive statistics, that is percentage, mean, and standard deviation. The research results are shown in the following section;

Table 4.1: Sample group characteristics

Gender	Number (n)	Percentage (%)
male	359	89.8
female	41	10.2
Total	**400**	**100**

Base on the table 4.1, the analysis reveals that most of the gender are male, of 89.8 percent and female is of 10.2 percent.

Table 4.2: Age

Age (yrs)	Number (n)	Percentage (%)
under 25	5	1.3
26-30	32	7.7
31-40	159	39.8
41-50	110	27.5
51-60	95	23.7
Total	**400**	**100**

Base on the table 4.2, the analysis reveals that most age are 31-40 years old or 39.8 percent and the least age is under 25 years or 1.3 percent.

Table 4.3: Marital Status

Marital Status	Number (n)	Percentage (%)
Single	77	19.3
Married	301	75.3
Widow	6	1.5
Divorce	16	4.0
Total	**400**	**100**

Base on the table 4.3, the analysis reveals that most marital status is married or 75.3 percent and the least status is widow or 1.5 percent.

Table 4.4: Educational level

Educational level	Number (n)	Percentage (%)
Under B.A.	74	18.5
B.A.	288	72.0
M.A.	38	9.5
Total	**400**	**100**

Base on the table 4.4, the analysis reveals that most of the educational level is the B.A. level or 72.0 percent; the second coming is the under B.A. or 18.5 percent; and the least us the M.A. or 9.5 percent.

Table 4.5: Years of civil servant work

Years of civil servant work (yrs.)	Number (n)	Percentage (%)
under 5	31	7.8
6-10	67	16.7
11-20	165	41.2
21-30	104	26.0
over 31	33	8.3
Total	**400**	**100**

Base on the table 4.5, the analysis reveals that most are those who work in the civil service between 11-20 years or 41.2 percent; the second coming are those who work in the civil service between 21-30 years or 26.0 percent and the least term are under 5 years or 7.8 percent.

Table 4.6: Position level

Position level	Number (n)	Percentage (%)
Practical	80	20.0
Professional	172	43.0
Senior	8	2.0
Operational	29	7.3
Specialist	107	26.8
Expertise	4	1.0
Total	**400**	**100**

Base on the table 4.6, the analysis reveals that most of the position level is at the professional level or 43.0 percent and the least position level are in the senior level or 2.0 percent.

Information regarding experience of custodial work and prisoner escape prevention

The analysis of the basic information of the sample group characteristics in the descriptive statistics is the informing of Information regarding experience of custodial work and prisoner escape prevention.

Table 4.7: Experience in custody of prisoners

Experience in custody of prisoners	Level of experience					$\bar{X}$	S.D.	Meaning
	least	little	moderate	much	most			
1.Monitoring all areas inside prison particularly the prison gate, prison wall and dormitory area	2 (.5)	2 (.5)	24 (6.0)	177 (44.3)	195 (48.8)	4.40	1.55	Much
2.When there is prisoner escape found, the penalty of that prisoner is serious and intensive.	10 (2.5)	23 (5.8)	65 (16.3)	144 (36.0)	158 (39.5)	4.04	1.01	Much
3.The high proficiency level of prison officials are arranged to work in custody of inmates.	17 (4.3)	18 (4.5)	122 (30.5)	163 (40.8)	80 (20.0)	3.68	0.96	Much
4.There is monthly conference for problem solving of situations in prison.	29 (7.3)	54 (13.5)	128 (32.0)	137 (34.3)	52 (13.0)	3.32	1.09	Moderate
5.There is an intelligence and agent work in search of the movement in prison.	8 (2.0)	24 (6.0)	124 (31.0)	161 (40.3)	83 (20.8)	3.72	0.93	Much
6.The monitoring observation of the unusual events and hearing all news in prison.	2 (.5)	12 (3.0)	69 (17.3)	188 (47.0)	129 (32.3)	4.08	0.81	Much
7.The note taking of the unusual events and make a report to the commander or supervisor to be informed.	6 (1.5)	35 (8.8)	144 (36.0)	160 (40.0)	55 (13.8)	3.56	0.89	Much

The result of the analysis of the Table 4.7 shows that the use of experience in the custodial work and prisoner escape prevention can be applied by Monitoring all areas inside prison particularly the prison gate, prison wall and dormitory area. When there is prisoner escape found, the penalty of that prisoner is serious and intensive. The high proficiency level of prison officials are arranged to work in custody of inmates. There is monthly conference for problem solving of situations in prison. There is an intelligence and agent work in search of the movement in prison; the monitoring observation of the unusual events and hearing all news in prison; the note taking of the unusual events and make a report to the commander or supervisor to be informed. Most of the opinions are shown in the much level of use; whereas there is monthly conference for problem solving of situations in prison is the moderate level of conduct. The study shows that the use of experience in the custodial work and prisoner escape prevention is rather effective because the opinion are all in the cluster, not dispersed which can be observed form the standard deviation.

Table 4.8: Techniques used for the custody of prisoners

Techniques used for the custody of prisoners	Level of Techniques					$\bar{X}$	*S.D.*	Meaning
	least	little	moderate	much	most			
1.The prisoner record registration, photo taking and finger printing	10 (2.5)	35 (8.8)	87 (21.8)	138 (34.5)	127 (99.3)	3.85	1.05	Much
2.The prisoner classification	6 (1.5)	25 (6.3)	107 (26.8)	157 (39.3)	105 (26.3)	3.83	0.94	Much
3. The random searching in prison	2 (.5)	5 (1.3)	56 (14.0)	160 (40.0)	177 (44.3)	4.26	0.78	Much
4.The movement tracking of the hardcore prisoners	6 (1.5)	15 (3.8)	59 (14.8)	188 (47.0)	132 (33.0)	4.06	0.87	Much
5.The good atmosphere building and justice holding system	7 (1.8)	4 (1.0)	65 (16.3)	166 (41.5)	158 (39.5)	4.16	0.86	Much
6.The counting of the number of prisoner at times	2 (.5)	13 (3.3)	71 (17.8)	170 (42.5)	144 (36.0)	4.10	0.84	Much
7.The installation of the grievance box	9 (2.3)	24 (6.0)	132 (33.0)	156 (39.0)	79 (19.8)	3.68	0.93	Much
8.The note taking of behavior and characteristics of prisoners.	15 (3.8)	59 (14.8)	127 (31.8)	147 (36.8)	52 (13.0)	3.41	1.01	Moderate

The result of the analysis of the Table 4.8 shows that the techniques of custody of prisoners are as follows; the prisoner record registration, photo taking and finger printing, the prisoner classification, the random searching in prison, the movement tracking of the hardcore prisoners, The good atmosphere building and justice holding system, the counting of the number of prisoner at times, the installation of the grievance box, and the note taking of behavior and characteristics of prisoners. Most of the opinions were in the much level which shows that the techniques of custody of prisoners are rather useful and effective, because the opinion are all in the cluster, not dispersed which can be observed form the standard deviation.

Table 4.9: Technology knowledge

Technology knowledge	**Level of Technology knowledge**					$\overline{X}$	*S.D.*	**Meaning**
	least	**little**	**moderate**	**much**	**most**			
Knowledge of technology of the sample group	9 (2.3)	58 (14.5)	266 (66.5)	66 (16.5)	1 (0.3)	2.98	0.64	Moderate

The result of the analysis of the Table 4.9 shows that the Knowledge of technology of the sample group is in the moderate level.

Table 4.10 : Knowledge received from training of the custody and prisoner escape prevention courses

Training	**Number (n)**	**Percentage (%)**
Never	224	56.0
Trained	176	44.0
Total	**400**	**100**

The result of the analysis of the Table 4.10 shows that most of the sample group have never been trained the custody and prisoner escape prevention courses or at the 56 percent and the sample group have been trained the custody and prisoner escape prevention courses are 44 percent.

Part 1.2 Comparison of the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention and the educational level.

It is for informing the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention and the educational level. The research analysis is shown as follows;

Table 4.11: Comparison of the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention and the educational level.

Variation source	df	SS	MS	F	Sig
Between groups	2	9.621	4.810	11.596**	0.000
Within group	397	164.689	.415		
Total	**399**	**174.310**			

** Significant at .01 levels

The analysis result of the Table 4.11 shows that the experience in the custodial work and prisoner escape prevention are varied at the significant of .01, after that the difference testing is done under the Scheffe' method. It is found that the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention, prison officers with the under B.A. level shows the different level from the B.A. and above the B.A. level at the significant of .01

Table 4.12: Comparison of technique of the custodial work and prisoner escape prevention and the educational level.

Variation source	df	SS	MS	F	Sig
Between groups	2	4.850	2.425	5.683**	0.004
Within group	394	168.120	.427		
Total	**396**	**172.971**			

** Significant at .01 levels

The analysis result of the Table 4.12 shows that the technique of the custodial work and prisoner escape prevention and the educational level are varied at the significant of .01, after that the difference testing is done under the Scheffe' method. It is found that the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention, prison officers with the under B.A. level shows the different level from the B.A. and above the B.A. level at the significant of .01

Part 1.3 The use of technology in custodial work and prisoner escape prevention in prison

It is for informing the use of technology in custodial work and prisoner escape prevention in prison. The research analysis is shown as follows;

Table 4.13 : The use of technology in custodial work and prisoner escape prevention in prison

The use of technology	Level of technology use						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	much	most			
1. CCTV	2 (0.5)	11 (2.8)	6 (1.5)	23 (5.8)	65 (16.3)	293 (73.3)	4.54	0.94	Most use
2. IT	16 (4.0)	9 (2.3)	25 (6.8)	88 (22.0)	85 (21.3)	177 (44.3)	3.87	1.32	Much use
3. Video Conference	167 (41.8)	13 (3.3)	16 (4.0)	58 (14.5)	46 (11.5)	100 (25.0)	2.26	2.12	Little use
4. Block Phone	181 (45.3)	39 (9.8)	24 (6.0)	33 (8.3)	36 (9.0)	87 (21.8)	1.91	2.08	Little use
5. X-ray	91 (22.8)	18 (4.5)	15 (3.8)	41 (10.3)	55 (13.8)	180 (45.0)	3.23	2.04	Moderate use
6. Metal Machine	18 (4.5)	30 (7.5)	48 (12.0)	57 (14.3)	77 (19.3)	170 (42.5)	3.64	1.52	Much use
7. Scan Document	204 (51.0)	20 (5.0)	28 (7.0)	45 (11.3)	22 (5.5)	81 (20.3)	1.76	2.05	Little use
8. Phone Record	46 (11.5)	25 (6.3)	22 (5.5)	85 (21.3)	56 (14.0)	166 (41.5)	3.45	1.72	Moderate use

The analysis result of the Table 4.12 shows that the technology that used for the custodial work and prisoner escape prevention are as following; CCTV, IT, Metal Machine, X-ray, Phone Record, Video Conference, Block Phone and Scan Document which are all little level of use in prison.

Part 1.4 The effectiveness of the use of technology in prison for custody and prisoner escape prevention

It is for informing the effectiveness of the use of technology in prison for custody and prisoner escape prevention. The research analysis is shown as follows; custody of prisoners to conduct in the following of laws and regulations in prison, the use of limited recourse, contraband smuggling prevention, the use of the limited number of personnel and the effective and efficient management as shown in the following section;

Table 4.14: The effectiveness of the use of technology in prison for custody and prisoner escape prevention

The use of technology	Level of technology use						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	much	None			
1. CCTV	0 (0.0)	0 (0.0)	1 (0.11)	31 (5.14)	125 (27.6)	243 (67.1)	4.52	0.92	Most effective
2. IT	0 (0.0)	6 (1.5)	22 (5.5)	87 (21.8)	143 (35.8)	142 (35.5)	3.98	0.96	Much effective
3. Video Conference	42 (10.5)	5 (1.3)	24 (6.0)	102 (25.5)	95 (23.8)	132 (33.0)	3.50	1.54	Much effective
4. Block Phone	42 (10.5)	20 (5.0)	17 (4.3)	63 (15.8)	97 (24.3)	161 (40.3)	4.37	0.84	Much effective
5. X-ray	10 (2.5)	8 (2.0)	17 (4.3)	57 (14.3)	104 (26.0)	204 (51.0)	4.12	1.18	Much effective
6. Metal Machine	4 (1.0)	2 (0.5)	32 (8.0)	79 (19.8)	114 (28.5)	169 (42.3)	4.07	0.84	Much effective
7. Scan Document	39 (9.8)	17 (4.3)	51 (12.8)	94 (23.5)	80 (20.0)	119 (29.8)	3.29	1.58	Moderate effective
8. Phone Record	16 (4.0)	13 (3.3)	15 (3.8)	82 (20.5)	108 (27.0)	166 (41.5)	3.89	1.30	Much effective
9. The effectiveness of custody and prisoner escape prevention	0 (0.0)	0 (0.0)	22 (5.5)	81 (20.3)	101 (25.3)	196 (49.0)	4.18	0.94	Much effective

The analysis result of the Table 4.14 shows that the effective technology for the custody and prisoner escape prevention are as follows; CCTV, after by IT, Video Conference, Block Phone, X-ray, Metal Machine and Phone Record which are in the much effective level of the technology use. The Scan Document is in the moderate effective level of the technology use.

Based on the effectiveness measure of the use of technology in prison for custody and prisoner escape prevention, it can be stated the overall level are much effective.

Part 1.5 Problems, obstacles and solution of the effectiveness of the use of technology in prison for custody and prisoner escape prevention.

It is for informing the analysis of sample group in the quantitative data which derived from the qualitative data through the use of reliable questionnaire and the executives and experts on the custody and prisoner escape prevention. The researcher can explain the problems of the research as follows;

Policy

1. Government lacks intention to solve problems.
2. Shortage of technologically knowledgeable officers.
3. Technology is inappropriate with the environment.
4. The electricity saving policy cause the dark zone in prisons and cause contraband smuggling.

Personnel

1. Ratio of officers to prisoners is out of balance.
2. Prison officer lacks the spiritual support.
3. Prison officer lacks the technological knowledge.
4. Prison officer rotates too often due to the lower wages and risky and heavy responsibilities.
5. Prison officer exploits prisoners to work on technology.
6. Senior Prison officer obstructs the technology.

Technology

1. The CCTV is not in the dome shape, so prisoners can observe the rotation of the CCTV.
2. The CCTV cannot use in the night hours.
3. The CCTV number is inadequate.
4. Technology is dated.
5. The sophisticated system used.
6. The lack of standardization and cannot connect to other equipment.
7. The electronic failure occurs too often in prison site.

Fiscal budget

1. The cost of technology is high.
2. The lack of advanced technology.
3. The continuity of technology is in shortage.
4. The ineffective technology used.
5. Lack of the maintenance budgets.
6. The fixing of the broken machine takes long period of time

For supporting the quantitative data analysis by the reliable questionnaires and the interviewing, the researcher can explain further information about the solutions as shown here;

Policy

1. Master plan of the Information technology and communication making
2. Advanced technology budget Setting
3. Standardized Procurement
4. Worthiness
5. Maintenance and after-sale service
6. 24 hours on guard prison officers
7. Technology learning center setting in all prisons

Personnel

1.The recruitment of prison officers focuses on knowledge and ability of candidates.

2.Recruiting the new 1-2 prison officers who can operate the technology well.

3.Training technology courses for the senior officers.

4.Training prison officers to analyze and make the decision on the information given especially through the observation skill.

5.Exchanging knowledge and experience on the technology use for custody of prisoners.

6.Rotating prison officers for learning different responsibilities of prison custody and other works.

7.Developing new modules in the technology use for custody by the Correctional College Training Center, Department of Corrections.

8.Appropriate Social welfare provision for operational prison officers on the custodial work with the technology use in prison.

9.The expertise prisoner officers shall give advice to other officers when new technology is being installed in prison.

Technology

1.Installation of the high quality camera at the crucial location of prison and the blinding areas of prison e.g. prison gates, prison wall and etc. for the 24 hour observation.

2.All CCTV shall have the dome shape cover.

3.The positions of the CCTV shall not be known by prisoners.

4.Installation technology in all areas e.g. the block phone, handheld metal machine detector, x-ray at prison gates.

5.Specification of the technology shall be standardized and high quality.

6.The connection of the website to get access in case where problems occur, and the Help Desk giving the Frequently Asked Questions (FQA).

7.The electrical storage shall be installed in case of the electricity failure.

Fiscal budget

1.The continuity of the fiscal budget provided.

2.The maximum worthiness of the investment in technology.

3.The continuity of the maintenance budget prepared.

4.The electrical storage shall be installed in case of the electricity failure.

5.Appropriate Social welfare provision for operational prison officers on the custodial work with the technology use in prison.

Part 1.6 Factors of the effectiveness in custody and prisoner escape prevention

The influence of the escape motivation; prison officer operation; custodial work, prison facility; prison population trend; societal environment; use of technology affecting the custody and prevention of prisoner escape from prison and correctional settings. Moreover, the study looks to explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

Table 4.15: Escape motivation

Escape motivation	Level						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	Much	least			
1. Sad news from home	26 (6.5)	22 (5.5)	23 (5.8)	41 (10.3)	103 (25.8)	185 (46.3)	3.82	1.52	Much
2. Case fraud	54 (13.5)	55 (13.8)	67 (16.8)	138 (34.5)	55 (13.8)	31 (7.8)	2.44	1.44	Least
3. Unfairness of officers	61 (15.3)	70 (17.5)	34 (8.5)	96 (24.0)	88 (22.0)	51 (12.8)	2.58	1.65	Moderate
4. Debts from gambling in prison	29 (7.3)	81 (20.3)	47 (11.8)	100 (25.0)	98 (24.5)	45 (11.3)	2.73	1.49	Moderate
5. Inmate quarreling	58 (14.5)	94 (23.5)	71 (17.8)	84 (21.0)	64 (16.0)	29 (7.3)	2.22	1.51	Least
6. Freedom and home sick	32 (8.0)	20 (5.0)	54 (13.5)	85 (21.3)	89 (22.3)	120 (30.0)	3.35	1.54	Moderate

The analysis result from the Table 4.15 shows that the motivation of escape is high in the receiving of sad news from home. Meanwhile, the motivation that has the moderate level are as follows; unfairness of officers, debts from gambling in prison, and freedom and home sick. The motivation that has the little level are as follows; case fraud and the inmate quarreling.

Table 4.16: Prison officer operation

Prison officer operation	Level						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	Much	least			
1. Careless officer operation	20 (5.0)	35 (8.8)	38 (9.5)	81 (20.3)	113 (28.3)	113 (28.3)	3.43	1.46	Moderate
2. Repetitive work	30 (7.5)	49 (12.3)	61 (15.3)	125 (31.3)	83 (20.8)	52 (30.0)	2.85	1.42	Moderate
3. Officer shifting	41 (10.3)	48 (12.0)	62 (15.5)	86 (21.5)	76 (19.0)	87 (21.8)	2.92	1.62	Moderate
4. Inexperience	24 (6.0)	39 (9.8)	55 (13.8)	98 (24.5)	112 (28.0)	72 (18.0)	3.13	1.43	Moderate
5. Corruption	43 (10.8)	50 (12.5)	58 (14.5)	87 (21.8)	85 (21.3)	77 (19.3)	2.88	1.61	Moderate
6. Contraband smuggling	48 (12.0)	36 (9.0)	60 (15.0)	85 (21.3)	62 (15.5)	109 (27.3)	3.01	1.69	Moderate

The analysis result of the Table 4.16 shows that the opinion on the prison officer operation can moderately be the factor of prison escape in every factor.

Table 4.17: Prison facility

Prison facility	Level						$\bar{X}$	*S.D.*	Meaning
	None	least	little	moderate	Much	least			
1. Strong prison wall	2 (0.5)	11 (2.8)	6 (1.5)	23 (5.8)	65 (16.3)	293 (73.3)	4.54	0.94	Most
2. No entry zone by wall	3 (0.8)	8 (2.0)	18 (4.5)	35 (8.8)	104 (26.0)	232 (58.0)	4.31	1.03	Much
3. Strong dormitory	8 (2.0)	12 (3.0)	19 (4.8)	31 (7.8)	103 (25.8)	227 (56.8)	4.22	1.17	Much
4. Strong prison gate	9 (2.3)	22 (5.5)	24 (6.0)	43 (10.8)	91 (22.8)	211 (52.8)	4.05	1.32	Much
5. Zoning in prison	5 (1.3)	8 (2.0)	20 (5.0)	38 (9.5)	100 (25.0)	229 (57.3)	4.27	1.09	Much

The analysis result of the Table 4.17 shows that the strong prison wall can prevent prisoner escape most. Other factors are in the high level of prisoner escape prevention, that is, no entry zone by wall, strong dormitory, strong prison gate and zoning in prison.

Table 4.18: Factor of custody

Prison facility	Level						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	Much	least			
1. Prisoner classification	8 (2.0)	10 (2.5)	14 (3.5)	79 (19.8)	157 (39.3)	132 (33.0)	3.91	1.10	Much
2. Equipment maintenance	2 (0.5)	9 (2.3)	10 (2.5)	55 (13.8)	180 (45.0)	144 (36.0)	4.09	0.94	Much
3. Monitoring of contraband	2 (0.5)	10 (2.5)	9 (2.3)	32 (8.0)	141 (35.3)	206 (51.5)	4.30	0.95	Much
4. Monitoring the guardian	2 (0.5)	7 (1.8)	2 (0.5)	42 (10.5)	119 (29.8)	228 (57.0)	4.38	0.89	Much
5. Counting number of inmate	2 (0.5)	6 (1.5)	0 (0.0)	39 (9.8)	91 (22.8)	262 (65.5)	4.27	1.09	Much

The analysis result of the Table 4.18 shows that sample group agrees to the all factors of custody to be in the high level i.e. the prisoner classification; the equipment maintenance; the monitoring of contraband; the monitoring the guardian, the counting number of inmate, the measures for incidence and the visitation system.

Table 4.19: Prisoner population change

Prison facility	Level						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	Much	least			
1. Increasing prisoner population	3 (0.8)	6 (1.5)	9 (2.3)	18 (4.5)	79 (19.8)	285 (71.3)	4.55	0.90	Most
2. Prisoners know technology than officers	9 (2.3)	56 (14.0)	49 (12.3)	142 (35.5)	96 (24.0)	48 (12.0)	3.01	1.27	Moderate
3. Prisoners are influential persons	6 (1.5)	18 (4.5)	28 (7.0)	45 (11.3)	134 (33.5)	169 (42.3)	3.98	1.21	Much
4. Prisoners break the laws and regulations	5 (1.3)	18 (4.5)	11 (2.8)	80 (20.0)	115 (28.8)	171 (42.8)	3.99	1.16	Much
5. Prisoners smuggle contrabands	8 (2.0)	27 (6.8)	22 (5.5)	56 (14.0)	117 (29.3)	170 (42.5)	3.89	1.31	Much

The analysis result of the Table 4.19 shows that Prisoner population change e.g. increasing prisoner population and the shortage of prison officers have the highest level of significance to the custody and prisoner escape prevention. Prisoners are influential persons; prisoners break the laws and regulations; prisoners smuggle contrabands have the high level of significance to the custody and prisoner escape prevention. However, prisoners know technology than officers has the moderate level of significance to the custody and prisoner escape prevention.

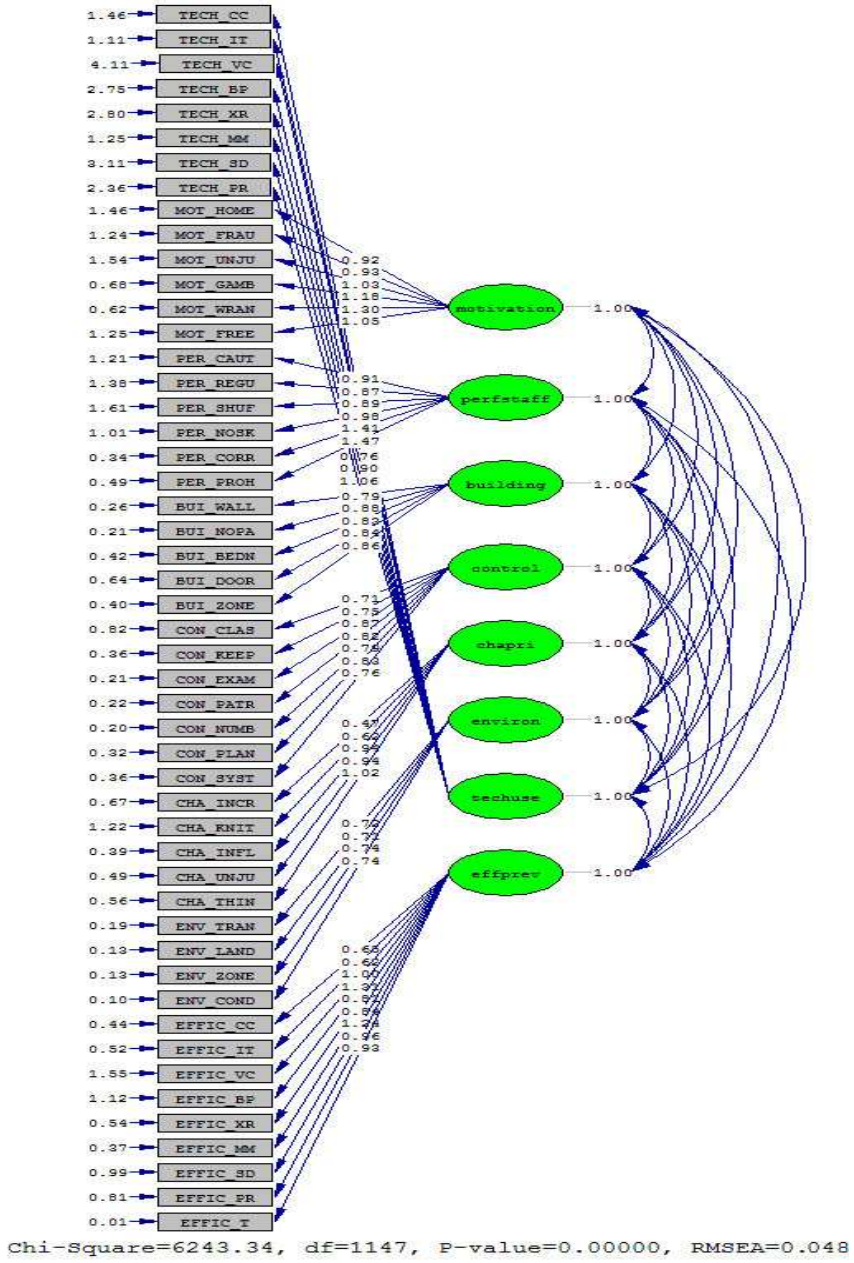
Table 4.20: Environment

Prison facility	Level						$\bar{X}$	S.D.	Meaning
	None	least	little	moderate	Much	least			
1.Lightening and organizing space inprison	0 (0.0)	8 (2.0)	2 (0.5)	38 (9.5)	121 (30.3)	231 (57.8)	3.89	1.31	Much
2.Prison landscape organizing	0 (0.0)	6 (1.5)	4 (1.0)	35 (8.8)	142 (35.5)	213 (53.3)	4.39	0.81	Much
3. Block Zoning	0 (0.0)	6 (1.5)	7 (1.8)	34 (8.5)	144 (36.0)	209 (52.3)	3.89	1.31	Much
4.Organizing unorganized area to be safer	0 (0.0)	8 (2.0)	0 (0.0)	46 (11.5)	127 (31.8)	219 (54.8)	4.37	0.84	Much

The analysis result of the Table 4.20 shows that the lightening and organizing space in prison, prison landscape organizing. Block Zoning and organizing unorganized area to be safer have the high level of significance to the custody and prisoner escape prevention.

Part 2 : Factors analysis: prisoner escape, operation of officers, buildings, custody, prisoner population change, environment, effectiveness of custody, and prisoner escape prevention

Part 2.1 The analysis of composition of the theories confirmation



Picture 4.1 : CFA by the LISREL program after being adjusted composition to be in accordance with the empirical data

Table 4.21: CFA

Variable	Matrix			R^2
	สปส.	SE	t	
MOTIVATION				
1. Sad news from home	0.92	0.072	12.70**	0.37
2. Case fraud	0.93	0.068	13.61**	0.41
3. Unfairness of officers	1.03	0.076	13.56**	0.41
4. Debts from gambling in prison	1.18	0.062	19.14**	0.67
5. Inmate quarreling	1.30	0.064	20.44**	0.73
6. Freedom and home sick	1.05	0.071	14.85**	0.47
PERFSTAFF				
1. Careless officer operation	0.91	0.066	13.81**	0.40
2. Repetitive work	0.87	0.069	12.66**	0.35
3. Officer shifting	0.89	0.073	12.12**	0.33
4. Inexperienced	0.98	0.063	15.63**	0.49
5. Corruption	1.41	0.059	23.70**	0.85
6. Contraband smuggling	1.47	0.064	22.82**	0.82
BUILDING				
1. Strong prison wall	0.79	0.039	20.32**	0.71
2. No entry zone by wall	0.88	0.040	22.07**	0.78
3. Aging dormitory	0.83	0.045	18.46**	0.62
4. Aging prison gate	0.84	0.052	16.29**	0.52
5. Zoning in prison	0.86	0.045	18.97**	0.65
CONTROL				
1. Prisoner classification	0.71	0.053	13.33**	0.38
2. Equipment maintenance	0.75	0.041	18.37**	0.61
3. Monitoring of contraband	0.87	0.039	22.33**	0.78
4. Monitoring the guardian	0.82	0.038	21.66**	0.75
5. Counting number of inmate	0.79	0.036	21.81**	0.76
6. Measures for incidence	0.83	0.041	20.08**	0.69
7. Visitation system	0.76	0.041	18.52**	0.62

Table 4.21: CFA (continued)

Variable	Matrix			R^2
	สปส.	SE	t	
CHAPRI				
1. Increasing prisoner population	0.47	0.047	10.08**	0.25
2. Prisoners know laws and regulations	0.62	0.063	9.79**	0.24
3. Prisoners know technology	0.94	0.048	19.57**	0.69
4. Prisoners are influential persons	0.94	0.051	18.49**	0.64
5. Prisoners break the laws and regulations	1.02	0.054	18.65**	0.65
ENVIRON				
1. Lightening and organizing space in prison	0.72	0.034	21.17**	0.73
2. Prison landscape organizing	0.71	0.032	22.53**	0.79
3. Block Zoning	0.74	0.032	22.80**	0.80
4. Organizing unorganized area to be safer	0.74	0.031	23.74**	0.84
TECHUSE				
1. CCTV	0.89	0.078	1.44**	0.35
2. IT	0.78	0.068	11.49**	0.35
3. Video Conference	0.41	0.120	3.56**	0.40
4. Block Phone	1.23	0.110	11.54**	0.35
5. X-ray	0.76	0.100	7.6**	0.17
6. Metal Machine	0.90	0.073	12.24**	0.39
7. Scan Document	1.06	0.110	9.72**	0.26
8. Phone Record	0.71	0.092	7.80**	0.18

Table 4.21: CFA (continued)

Variable	Matrix			R^2
	สปส.	SE	t	
EFFPREV				
1. CCTV	0.65	0.041	16.03**	0.49
2. IT	0.62	0.042	14.56**	0.42
3. Video Conference	1.00	0.072	13.42**	0.39
4. Block Phone	1.31	0.071	18.50**	0.60
5. X-ray	0.81	0.047	17.22**	0.55
6. Metal Machine	0.84	0.043	19.63**	0.66
7. Scan Document	1.24	0.067	18.61**	0.61
8. Phone Record	0.96	0.057	16.86**	0.53
9. Total	0.93	0.034	27.73**	0.99

Chi-Square Goodness of fit = 6437.22 df = 1147 p = 0.0 $\chi^2 / df = 5.61$

RMSEA = 0.048 GFI = 0.91 CFI = 0.87

** significant at .01 level

From the Table 4.21 the analysis result, the Standard Deviation and the t-test of the composition differs in the statistically significant at .01 levels. The R-Square from the regression analysis of the independent variable and the observable variable which gives the ratio of variation in the Communalities. All values are high. The RMSEA is 0.048 showing the high accordance between the model and the empirical data. The variance and combined variance can be explained by the Goodness of Fit (GFI) at the 0.91 and the Comparative Fit Index (CFI) is closed to 0.90 and equal to 0.87 which means that the model is in accordance with the empirical data.

Part 2.2 Analysis of variable relationship

The variable relation occurs in the following of the set study or not, and for this reason the researcher analyze all variable relationship in the research.

The analysis of the bi-relationship of variables used in the hypothesis testing shown in the Table 4.22 shows that there is no relationship between each independent variable, which is observable by the variable relationship values are not so high or not over 0.6 or closer to it. Moreover, all variables are positive relationship meaning that the relationships have all the same direction. The dependent variables i.e. effectiveness in custody and prisoner escape prevention and equipment have statistically significant with the independent variables, that is, escape motivation, prison officer operation, custody, prisoner population change and environment which is accordance with the set framework of the research.

Table 4.22: Variance of the latent variables and regression analysis

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
TECHUSE (1)	1.00	.07	.09	.29**	.36**	.015	.26**	.62**
MOTIVATION (2)		1.00	.42**	.28**	.24**	.40**	.19**	.16**
PERFSTAFF (3)			1.00	.22**	.15**	.53**	.18**	.10*
BUILDING (4)				1.00	.64**	.37**	.44**	.49**
CONTROL (5)					1.00	35**	.52**	.59**
CHAPRI (6)						1.00	.34**	.18**
ENVIRON (7)							1.00	.43**
EFFPREV (8)								1.00
Mean	4.29	3.72	4.03	5.08	5.03	4.87	5.27	4.79
Standard Deviation	1.11	1.17	1.21	1.05	0.95	0.86	0.86	1.05
Tolerance	0.83	0.76	0.65	0.54	0.48	0.58	0.68	-
VIF	1.21	1.31	1.52	1.85	2.08	1.72	1.48	-

* Significant at .05 levels,

** Significant at .01 levels

The result of the analysis in the Table 4.22 shows that there is no problem of a linear polynomial. All data can be analyzed by the LISREL program. The testing of the latent variables does not show the Multicollinearity by the Variance inflation factor (VIF) or Tolerance. The criterion of the testing is that the appropriate VIF should not be over 4 or 5. In case that the beyond VIF at 5, there are some relationship among the latent variables.

The Tolerance should not be under 0.2. In case that the under Tolerance at 2, there are Multicollinearity which is all the analysis of the Tolerance and VIF of the passed latent variables i.e. TECHUSE 0.83 and 1.21; MOTIVATION 0.76 and 1.31; PERFSTAFF 0.65 and 1.52; BUILDING 0.54 and 1.85; CONTROL 0.48 and 2.08; CHAPRI 0.58 and 1.72; ENVIRON 0.68 and 1.48.

Part 3 : Direct and indirect influential effects caused by Factors analysis: towards effectiveness of custody and prisoner escape prevention

For the testing of the effectiveness of the use of technology in custody and prisoner escape prevention, the researcher selected the LISREL program for testing and proving the Path Analysis of the factors of the effectiveness of the use of technology in custody and prisoner escape prevention. The LISREL program has its eminent at the analysis of the Structural Equation Modeling: SEM at the same time as giving the Factor Loading of the latent variables to the observable variables, which the readymade statistical program cannot calculate it.

Besides the LISREL program is flexible in giving the term of the Tolerance that can be in relation, by which the researcher can change the testing of the hypothesis of the effectiveness of the of the use of technology in custody and prisoner escape prevention to the suitable value of the theories, and the empirical data accordance.

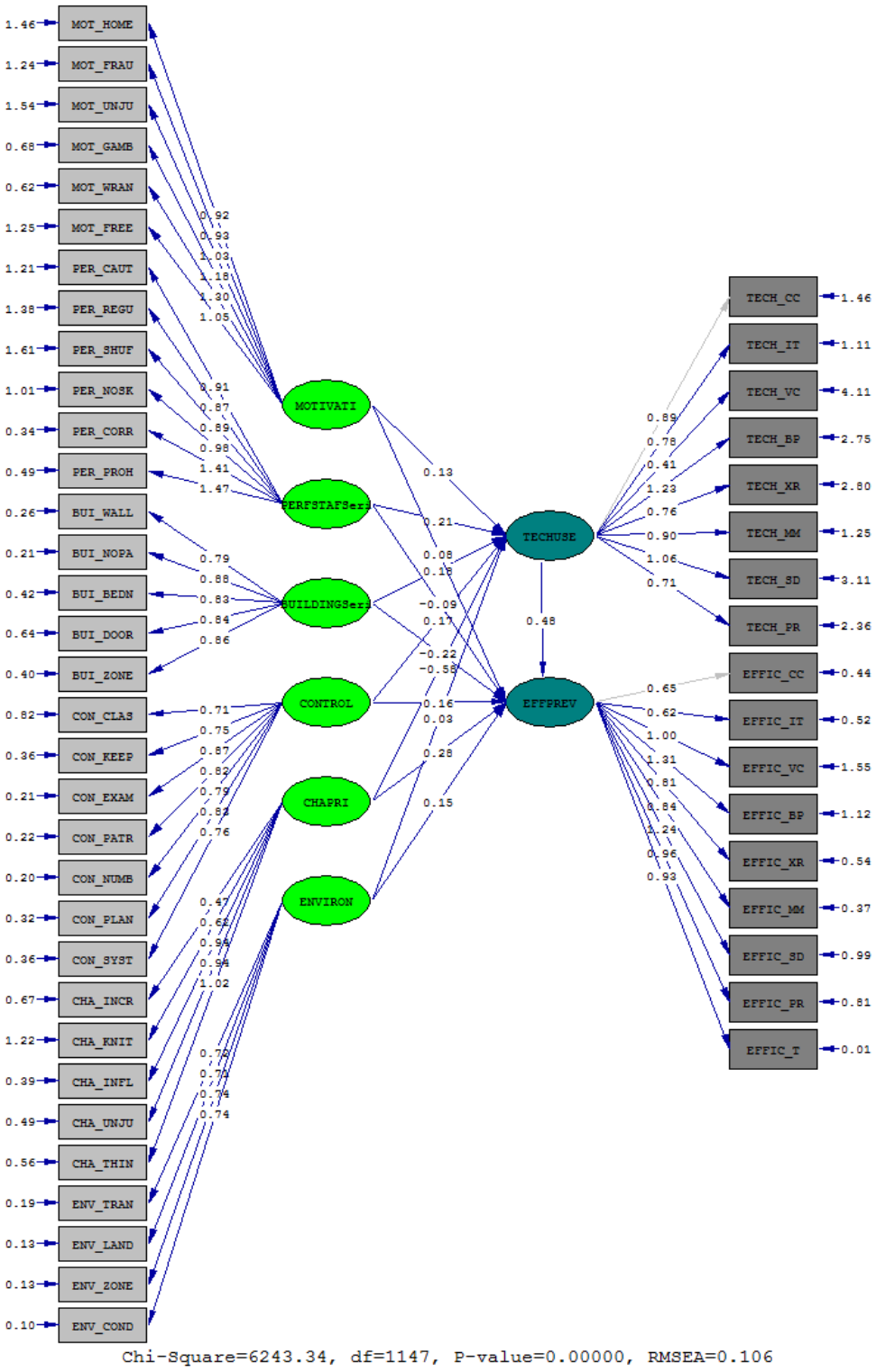
Table 4.23 : Index in the Testing of Accordance and Assimilation of the Effectiveness of the Use of Technology in Custody and Prisoner Escape Prevention and the Empirical Data

Ordering	Value	Criteria	Model Before Adaptation	Appropriateness of Model	Model After Adaptation	Appropriateness of Model
1	χ^2 / df	NO SIG	5.44	√	2.18	√
2	*RMSEA*	UNDER 0.05	0.106		0.045	√
3	*CFI*	OVER 0.9	0.87		0.98	√
4	*GFI*	OVER 0.9	0.82		0.95	√
5	*STD RMR*	UNDER 0.05	0.088		0.043	√

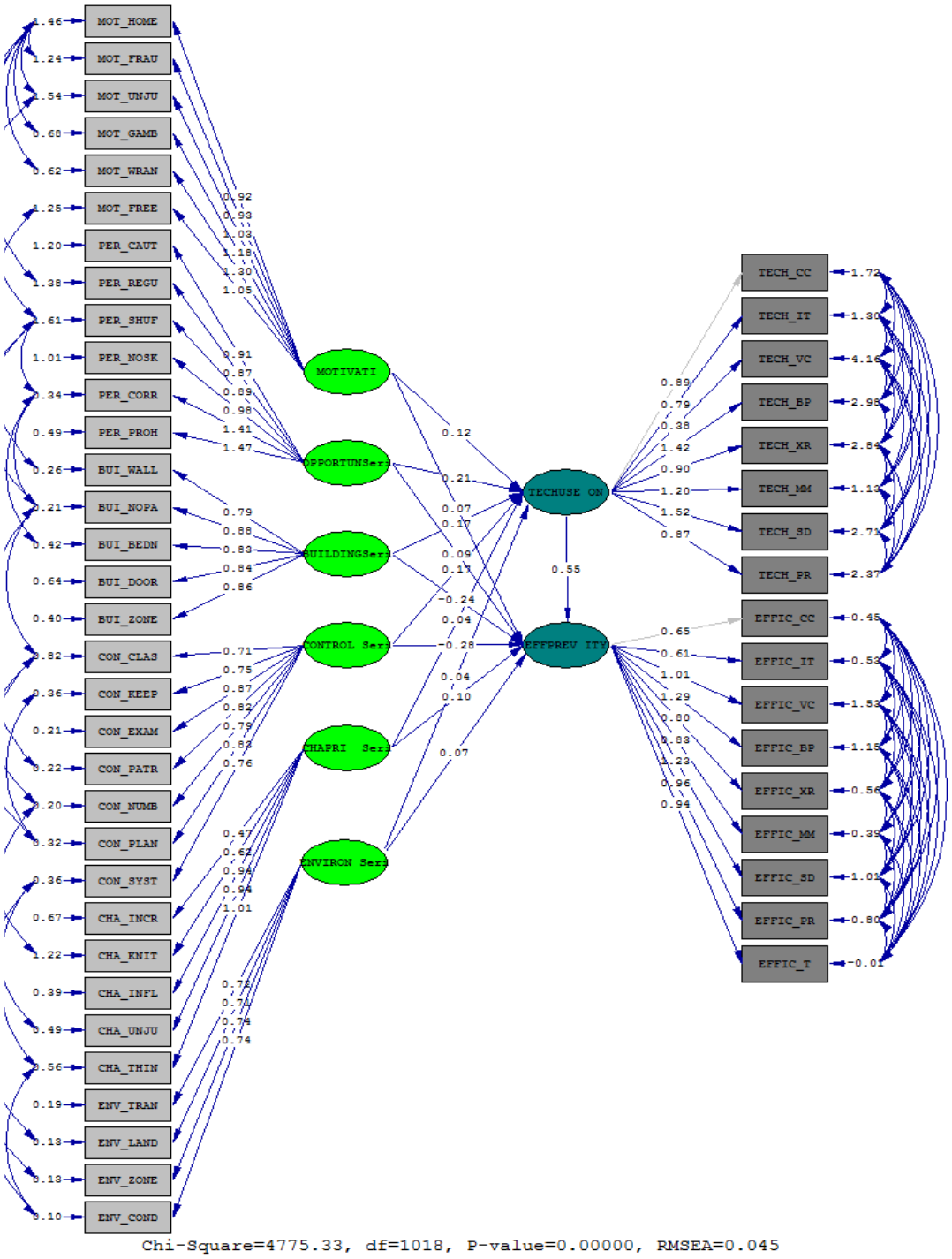
Remark : ✓ Means passing the Criteria of Index in the Testing of Accordance and Accordance and Assismilation of the Model and Empirical Data (Criteria Source : Supamas Ansuchoti, Somtawin Vichitwan, and Rachanikul Pinyopanuwattana, B.E.2552, P.22-24)

The result of the analysis of the Table 4.23 shows that the RMSEA = 0.108 which is higher than 0.05 But Chi-Square divided by df having value over 2.00 The researcher modeled up by drawing a line between observable variables according to the index of accordance and assimilation test with the empirical data. The result shows that the first model does not pass the criteria, because the root of mean of variance by two of the Root Mean Square Error of Approximation (RMSEA) showing the slight accordance. The Standardized Rood Mean Square Residual (*STD RMR*) does not pass the criteria.

The model of path analysis affecting the effectiveness in custody and prison escape prevention in prison. The first model is the presentation of the study as follows.



Picture 4.2 : Path analysis of factors before the adaption to accordance with empirical data to the effectiveness of technology use in custody and prisoner escape prevention



Picture 4.3: Path analysis of factors before the adaption to accordance with empirical data to the effectiveness of technology use in custody and prisoner escape prevention

The result of the analysis of picture 5 can expand the understanding of the analysis of the accuracy of latent variable, variance by the Factor Loading, and the Modification Indices as shown on the picture.

Table 4.24: Path analysis of factors before the adaption to accordance with empirical data to the effectiveness of technology use in custody and prisoner escape prevention

Dependent Variable	(R^2)	Influence	Independent Variable						
			Motivation	Per staff	Building	Control	Chapri	Environ	Techuse
Techuse	0.17	Direct	0.12**	0.21**	0.17**	0.17**	-0.28	0.04	-
		Indirect	-	-	-	-	-	-	-
		Total	0.12**	0.21**	0.17**	0.17**	-0.28	0.04	-
Effprev	0.57	Direct	-0.09	0.09	-0.24	0.32**	0.10	0.07	0.55**
		Indirect	0.05	0.08	0.07	0.07	-0.22	0.02	-
		Total	-0.04	0.17	-0.17	0.39**	-0.12	0.09	0.55**

Direct = direct effect,

Indirect = indirect effect,

Total = total effect,

*p<0.05,

**p<0.01

The result of the analysis of the table 4.24 shows that factors influential to effectiveness of TECHNOLOGY USE IN CUSTODY AND PRISONER ESCAPE PREVENTION are from techuse $(\lambda = 0.55)$ and control $(\lambda = 0.39)$ which share the high level. the indirect coefficient to effectiveness of TECHNOLOGY USE IN CUSTODY AND PRISONER ESCAPE PREVENTION i.e. perfstaff $(\lambda = 0.21)$ control $(\lambda = 0.17)$ building $(\lambda = 0.17)$ and motivation $(\lambda = 0.12)$ respectively. However the variables influential to effectiveness of TECHNOLOGY USE IN CUSTODY AND PRISONER ESCAPE PREVENTION with no statistical significance i.e. chapri, environ. The chapri have the negative value, therefore the chapri gives the opposite outcome to the effectiveness of TECHNOLOGY USE IN CUSTODY AND PRISONER ESCAPE PREVENTION.

Table 4.25: Conclusion of hypothesis

Ordering	Hypothesis	Outcome
1.	Motivation is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
2.	Motivation is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis
3.	Officer operation is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
4.	Officer operation is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis
5.	Building is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
6.	Building is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis

Table 4.25: Conclusion of hypothesis (continued)

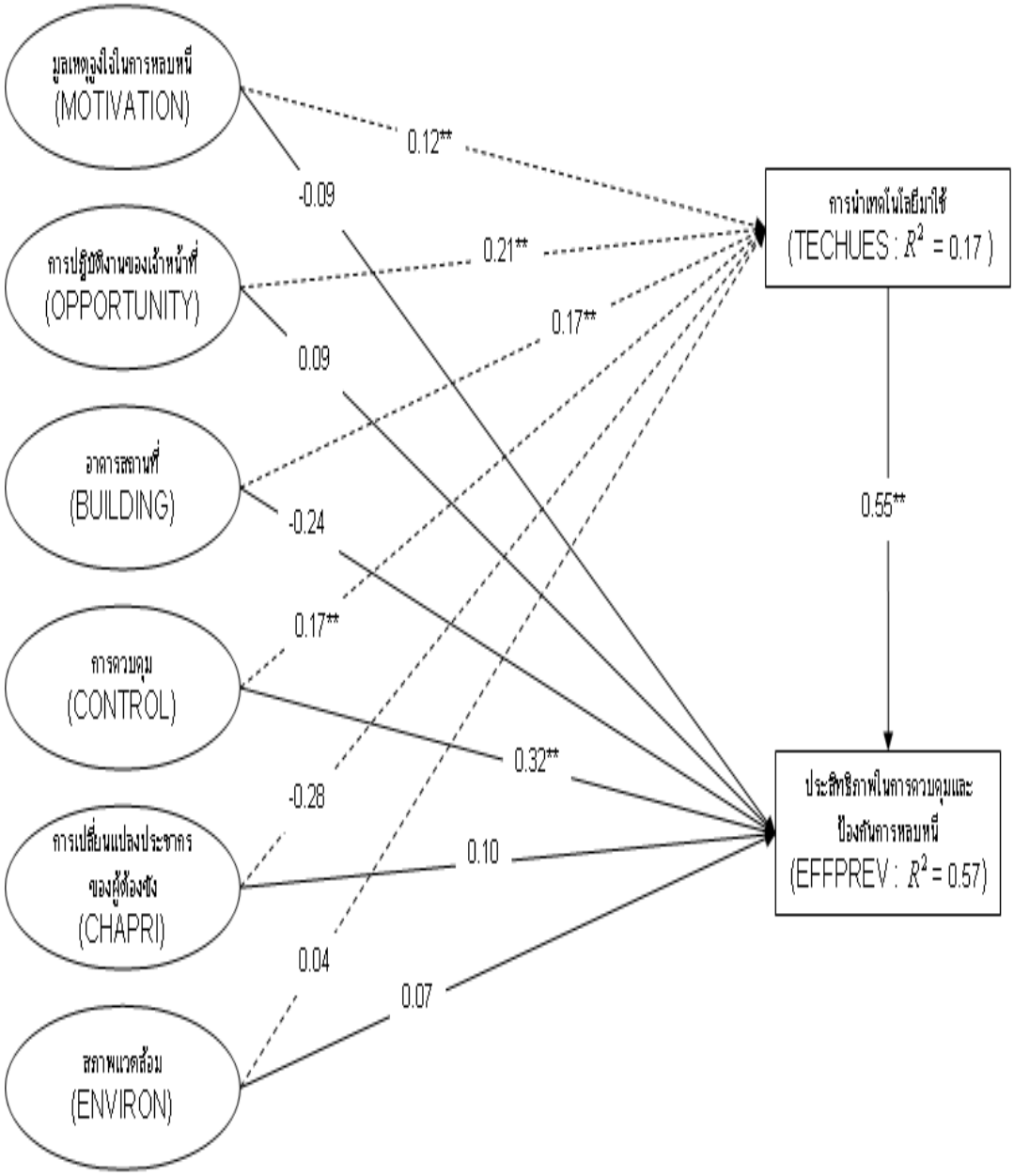
Ordering	Hypothesis	Outcome
7.	Custody is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis
8.	Custody is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis
9.	The population change is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
10.	The population change is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis
11.	The environment is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
12.	The environment is indirectly influential to effectiveness of custody and escape prevention through the technological usage.	not accordance with the hypothesis
13.	The technological usage is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis
14.	The motivation is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis
15.	The officer operation is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis

Table 4.25: Conclusion of hypothesis (continued)

Ordering	Hypothesis	Outcome
16.	Building is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis
17.	The custody is directly influential to effectiveness of custody and escape prevention.	accordance with the hypothesis
18.	The population change is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis
19.	The environmental arrangement is directly influential to effectiveness of custody and escape prevention.	not accordance with the hypothesis

The result of the analysis of the Table 4.25 shows that the hypothesis affects to the effectiveness in custody and prisoner escape prevention in prison. There are 6 hypotheses, which can be divided into 2 variables affecting directly to the effectiveness in custody and prisoner escape prevention in prison. The 4 variables affecting indirectly to the effectiveness in custody and prisoner escape prevention in prison.

Path analysis of the factors affecting to effectiveness in custody and prisoner escape prevention in prison



Picture 4.4: Path model and factors affecting direct and indirect to effectiveness in custody and prison escape prevention in prison

CHAPTER V
CONCLUSION OF RESEARCH, DISCUSSION AND RECOMMENDATIONS

The research aims to study the factor of prisoner escape; prison officer operation; custodial work, prison facility; prison population trend; societal environment; use of technology affecting the custody and prevention of prisoner escape from prison and correctional settings. Moreover, the study looks to explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

The selection of the sample group is done by the researcher from the sufficiency of data to be analyzed. (Kline 2005: 110). Generally, the greater size of sample group population, there shall be 200 people for data collection at least. For the stable research result, researcher chose to apply 400 people for the stratified random sampling method from the Central Bangkwang Prison, Central Klongprem Prison, Central Chiangrai Prison, Central Klongpai Prison, Central Pitsanulok Prison, Central Rayong Prison, Central Nakhonsrithammarat Prison, Central Chaingmai Prison, Central Rachaburi Prison, Central Songkla Prison, Central Samutprakarn Prison, Thonburi Remand Prison, Central Khaobin Prison and Central Correctional Institute for Drug Addicts. After that each prison data was to be sampling random sampling from the custodial officer registration office by the ratio of 6:1 out of the 2,345 population divided by 400.

The statistics in this research is the Anova, whereas the advanced statistics employed in the research is the Multiple Regression Analysis and the LISREL program. Furthermore, the qualitative methodology applied in the research was conducted by the Purposive Sampling technique; the total number of 10 administrative officers is all working for the Department of Corrections: Director

General, Deputy Director General, Prison Director, Director of Correctional Institution and specialist, senior professional level across the country for the rather more profound information collection. The questionnaire is used as the quantitative tool, in which there are 68 questions. The interviewees are given 15-30 minutes per person to answer. The questionnaire is divided into 5 sections. The first section is the personal data (6 questions). The second section is information regarding experience of custodial work and prisoner escape prevention (6 questions). The third section is involving the implementation of technology in the custody and prisoner escape prevention in prison and correctional institutions (8 questions). The forth section is the factors affecting the custody and prisoner escape prevention in prison and correctional institutions (45 questions). The fifth section is the recommendations on the implementation of technology in the custody and prisoner escape prevention in prison and correctional institutions (3 questions). The questionnaire received all data that is under the set research framework.

The use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison research conducts by the in-depth interviewing i.e. the questions of the policy of the Department of Corrections for the use of the technology on custody and prisoner escape prevention; the reason of ineffectiveness in the technology use, the measure of the Department of Corrections for the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison, the factors of the successful outcomes and obstacles and recommendations on the use of technology for increasing the effectiveness of the custody and prisoner escape prevention in prison. The sample group of the qualitative data research "Effectiveness of the custody and escape from prison" selected the sample group by the purposive sampling method. That comprises the executives if the Department of Corrections i.e. director general, deputy director general, prison director and custody division directors for 10 persons in total. The In-depth Interview of 13 questions under the 1-2 hours per person. The topic in the research questions cover the areas of the factor of prisoner escape; prison officer operation; custodial work, prison facility; prison population trend; societal environment; use of technology affecting the custody and prevention of prisoner escape from prison and correctional

settings. Moreover, the question looks to explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

Conclusion of research

Part 1: Analysis of fundamental data for informing the characteristics of the sample group which is displayed in the descriptive statistics on personal data.

To be concluded, personal data reveals that most of the custody officers in prison setting are males. The custody officers have duties to work closely with prisoners or stay in the area with prisoners in general. The work can range from the custody of prisoners and to control inmates at working or training activities. Besides the enforcement of laws and prison regulation and discipline for inmates are the custody officers' responsibilities.

The custody officers age between 31-50 years old. The tuff characters can make prisoners respect to the officers to some level. The total 14 high security prisons and correctional institutions in this research are all male inmates. The problems of the prisons are the inadequate prison officer to work and more responsibilities to be in charge of when in comparison with other civil servants in other departments. Furthermore, some opinions from the other people view the prison officers work in the low level of society and take high risk regarding controlling prisoners who are regarded as criminals in society. Therefore some of the prison officers expect the prison work to be a passing to somewhere where social welfare or salary is better than the correctional work. Some officers look to better opportunity for transferring to other well-paid department or faster track of the position growing.

Regarding the educational level of the prison officers, the majority of the officers do not obtain the high level of education due to the belief that the prison officers does not need such high knowledge. Most of the officers come in with the B.A. or lower level and continue to study while working, plus the experience of the prison work in custody of inmates by real experience or exchanging of the custodial methods from senior officers and colleagues. The most officers giving the

questionnaires have 11-20 years left before retirement. It shows that many officers are senior with the professional level after the position, or if it is called in the previously traditional way, they are in C4-C7 levels.

The information regarding custody and prisoner escape prevention

The research shows that the use of experience on custody and prisoner escape prevention in prison is regarded as the most important factors for the correctional work i.e. monitoring and surveying all areas in prison such as at the prison gate, along the prison walls and inmate dormitory areas. Together with the implementing of the just punishment when prisoner attempts to escape or escape with success. The monitoring by eyes, listening to all information and intelligence, the use of experience in the custodial work and prisoner escape prevention can be applied by Monitoring all areas inside prison particularly the prison gate, prison wall and dormitory area. When there is prisoner escape found, the penalty of that prisoner is serious and intensive. The high proficiency level of prison officials are arranged to work in custody of inmates. There is monthly conference for problem solving of situations in prison. There is an intelligence and agent work in search of the movement in prison; the monitoring observation of the unusual events and hearing all news in prison; the note taking of the unusual events and make a report to the commander or supervisor to be informed. Most of the opinions are shown in the much level of use; whereas there is monthly conference for problem solving of situations in prison is the moderate level of conduct.

It shows that the techniques of custody of prisoners are as follows; the prisoner record registration, photo taking and finger printing, the prisoner classification, the random searching in prison, the movement tracking of the hardcore prisoners, The good atmosphere building and justice holding system, the counting of the number of prisoner at times, the installation of the grievance box, and the note taking of behavior and characteristics of prisoners. Most of the opinions were in the much level which shows that the techniques of custody of prisoners are rather useful and effective.

Regarding the technique of the custodial work and prisoner escape prevention and the educational level are varied at the significant of .01. It is found that the experience in the custodial work and prisoner escape prevention and technique of the custodial work and prisoner escape prevention, prison officers with the under B.A. level shows the different level from the B.A. and above the B.A. level at the significant of .01 meaning that the higher education of officers the greater experience and techniques used. The techniques can be exchanged mostly with the senior and experienced officers for the resourceful officers of the prison settings.

The influence of the escape motivation; prison officer operation; custodial work, prison facility; prison population trend; societal environment; use of technology affecting the custody and prevention of prisoner escape from prison and correctional settings. Moreover, the study looks to explore the level of use of technology affecting the custodial work and prevention of prisoner escape from prison and correctional settings.

In conclusion, the experience of custody and prisoner escape prevention found that the searching of inmates can only be conducted by the officers. The recruitment of the intelligent and aware prison officers is the key factor of the searching strategy. The prison officers have to have the questions of where is the possible hiding place for the contrabands inside prisons. However, prison officers must understanding in humanitarian, that all inmates have feeling and family, so the treatment of prisoners shall be equally treated and be faired.

The solution is to emphasize the development of the system of bureaucracy and introduction of technology with the aim of becoming the effective and sustainable organization and developing civil servants to be professional in the field of particular works (Suchada Rungsinont, 2548: 8-10). As a result, the Department of Corrections has trouble with the limited number of prison staff condition as by nature of the custodial work, the monitoring prison requires a full scale of staff to continuously on guard of prison facility for 24 hours every day. The mission of the organization is regarded as distinctively different from other types of organizational mission. Furthermore, the international standard of the ratio of prison

staff to inmate is at 1:5. The Office of the Civil Service Commission (OCSC) designates the standard ratio of prison staff to inmate is at 1:10. Whereas the Thai Department of Corrections burdens the increasing number of prisoners year by year and the ratio of prison staff to inmate is at 1:30.

The use of technology for custody and prisoner escape prevention, based on the study, it shows that the CCTV is mostly used in prisons; after by the information technology for the organizing data of prisoners; the Metal Machine and Phone Record are also called as highly used in prison settings as well. The moderately use equipment in prison is the X-ray. For the less use technology in prison are Video Conference, the Block Phone and the Scan Document respectively.

The research result notes that the use of technology has the direct effect to the effectiveness in custody and prisoner escape prevention with the statistical significance. Most sample groups see the importance of having technology in use for the correctional work as it brings in the knowledge of technology and the application to the custody and prisoner escape prevention in prison management which can increase the effectiveness in the control of prisoners in the sustainable period.

The Department of Corrections executives and experts view that the ideas and strategy of the use of technology has the direct effect to the effectiveness in custody and prisoner escape prevention can be done in the policy level. The administration of the Department of Corrections implements the use of CCTV, IT, Video Conference, X-ray, Metal Machine, Phone Record, Block Phone and Scan Document in the high level but there is not particular technology is used mostly at the present time as for reinforcing the effectiveness in custody and prisoner escape prevention.

Part 2: Analysis of the influence of factors of escape motivation, officer operation, buildings, custody, prisoner population change, environment, and effectiveness of custody and prisoner escape prevention

From the regression analysis of the factors of escape motivation, officer operation, buildings, custody, prisoner population change, environment, and

effectiveness of custody and prisoner escape prevention, it shows that the use of technology can effect to the dependent variables to 75.1 percent. The technology is the most effective factors to effectiveness of custody and prisoner escape prevention, followed by the custody, building, and environment respectively.

The motivation of escape, officer operation and the change of prisoner population do not effect to the effectiveness of custody and prisoner escape prevention.

From the regression analysis of the factors of technology, officer operation, custody, prisoner population change, and environment can effect to the dependent variables to 41.7 percent. The custody is the most effective factors to effectiveness of custody and prisoner escape prevention, followed by the officer operation, environment, prisoner population change have some impact to the use of technology for custody and prisoner escape prevention. Motivations of escape and building have no relation to the use of technology for custody and prisoner escape prevention.

Part 3 : Analysis of the influence of the variable group both direct and indirect effect to the effectiveness of custody and prisoner escape prevention

Motivation of escape

The result of the study shows that the unfair administration of the prison officers causes suffering and strong feeling towards escape planning in prisoners. In some times, prison officers observe only regulation without seeing the real situations of inmate lives. Some inmates play gambling for pleasure in doing the prison time and having debts, some have gangs and fighting with other groups, some inmate have heard the sad news form home and family, all reasons can be connected to the prisoner escape.

On the basic knowledge all inmates need freedom as air of their lives, therefore freedom is the greatest motivation to escape especially the inmate with the long-term sentence.

Officer operation

The result of the study shows that the careless operation of prison officers can cause prisoner escape. The level of opportunity of escape depends on the officer operation mainly because the escapees are those who are out of sight of the officer operation. The unskilled and inexperienced officers can also be the factors of the attempt to escape. The smuggling contrabands is the act of release oneself from the boredom of prison.

The officer works in prison can be around the clock due to the night shift for some officers, the totally familiar place and the tiredness from the duties can be the reasons of the mistake of the prison officer operation. Also, some case happens when new officers who just receive the first experience working as the prison officer in prison is given the serious responsibility of monitoring hardcore inmates and more problematic prisoners. The experience of prison officers therefore significantly important for the success of custody of the prison officers.

Building

The study result shows that the zoning of the restricted area in prison can prevent prisoner escapes to some sense, and the zoning in prison can be most effective to the custody and prevention of prisoner escape, because the prison wall is the best stoppage of the prisoner escape, however the height of the wall and the state of the wall are also very crucial when considering of the escape means. In Thailand, most of the walls have the 5-6 meter height with the obstacles such as the barbwire, and electric lines which can prevent the escape to be achieved. The weak points of some walls are the building was built too close to the wall, therefore prisoners can jump from the roof to the prison wall easily. Also the availability of the stool, long sticks and etc. can be dangerous for prisoner escape.

Besides, dormitory can be a central point where the opportunity of prisoner escape can be reached out to. Due to the fact that the dormitory is the place where inmates spend time over night and the night shift officers may be working in the small number of 2-5 officers, therefore the chance of escape is open up for some prisoners.

The building mostly old by the time of built therefore prisoner can run through room and use the weak point where the metal wire is cut off or broken.

The prison design is very important to the escape because in Thai prisons, prisoners stay outside of the building in the day time, therefore there are plenty of time that prisoners can study the weak point of the areas in prisons. The design future prison shall take the factor into account for the prevention of the prisoner escape.

The prison gate is not strong enough for the escape prevention as it is one of the key factors of the success in escape of prisoners in the past. For the international standard, it is designed to have two layers of gates in order to prevent the running from the prison in the 10 meter distance. Most of the time that the gate is in use by many objectives such as cars, officers, visitors, inmates and more, therefore the Thai prison gate design follows the international standard. However there are some sneaking prisoners at the gate or nearby to grab a chance and run.

The Department of Corrections therefore sets the measure of the prison gate to inspect the entrance and exit of all persons under the close monitoring by the appointed prison officer in the reachable areas. The also design of the separation of entrance and the visitation room door makes the custody of prisoners and visitors more organized and prisoner escape preventative. The regulations issued by the Department of Corrections for the prison gate measure are 1) it is not allowed all prisoners to work as the assistants at the prison gate for opening and closing the gate or any other secretary work in the area 2) it is not permitted the operational unit to work in the prison gate area because it can prevent all prisoners to take any opportunity to escape at all time. 3) All prisons have two gates and the distance of the gates are some space for usable area. The area is restricted for all prisoners and cannot come close or stay at the area at all times. 4) All prisons with the 2 or 3 gates have different opening time, that is, when one gate is already opened for inmates to get entered or exited, the second gate has to closed down and wait for the moment that the first gate closed down, then at this moment the second gate can be opened.

Custody

Based on the research result, the custody including inspection of the building and environment of prison to ensure that there is no smuggled contrabands into the prison area. The counting of number of prisoner often can effectively relate to the custody and prisoner escape prevention at the most level. The monitoring of all building, dormitory, training building, kitchen, nursing area and general areas in the prison is to be checked before and after the relocating prisoners into or vice versa.

For the contraband searching e.g. mobile phones, illegal drugs, weapons, alcohol drinking, gambling materials and more, the body searching and the building searching should be enforced at the time when prisoners go out of prison e.g. go to court hearing, go to hospital, and work for the public service etc.

The custodial system is crucial to prisoner escape because the good system starting from the entry into prison can increase the effectiveness of custody in a bigger level i.e. classification of prisoner, electronic equipment maintenance, building and contraband inspection, the night patrol shift in prison, prisoner number counting, custodial measures and emergency incident prevention, custodial measure prisoner outside prison setting, prisoner visitation and contact tot the outside world.

In summary, the use of technology in custody work has the direct effectiveness of the custody and prevention of prisoner escape from prison. The ordering of such technology that important for the employment in order to achieve the effectiveness of the custody and prevention of prisoner escape from prison are as follows; CCTV, Metal Machine, Block Phone, X-ray, Phone Record, Information Technology, Video Conference and Scan Document respectively.

Prisoner population change

Based on the change of prisoner population trend of the current time, there is the increasing number of inmates while at the same time the number of prison officers is at the pretty much the same, therefore as a matter of fact the prison officers work with difficulties these day in the custody and prevention of prisoner escape.

The Department of Corrections shall seek solutions for assistance the working method for all prison officers by the decision on the use of electronic equipment for more effectiveness. Furthermore, the strategy to set the new measure for controlling new characteristics inmates can be implemented. Because the characteristics of prisoners have been changed from the earlier time, because the new comers in prisoners were found more dangerous e.g. illegal drug sellers, dangerous criminals etc. The more common prisoner traits contain rather sophisticate knowledge, having monetary and social influence to others. Also, the financial capability of prisoners becomes higher in stability of action, therefore the transaction of the illegal drug trade in prisons brought into the smuggling of contrabands which is used for the administration of illegal trade. The governmental policy, the downsizing in the manpower of public sector was seriously implemented. The solution of the policy was to emphasize the development of the system of bureaucracy and introduction of technology with the aim of becoming the effective and sustainable organization and developing civil servants to be professional in the field of particular works. As a result, the Department of Corrections has trouble with the limited number of prison staff condition. Due to the current custodial condition, the interaction between prison staff and inmates is undeniable. It also turns up in other forms of connection between prison staff and inmates especially the illegal activities. The reflection of situation communicates to publics that the Department of Corrections fails in custodial management, and the criminal justice system lack of trust from public. The research problem is a part of all problems that affect to the Department of Corrections reputation and as a result the lack of belief in organization from the publics could be developed in a greater level. The researcher has viewed that the custodial work of prisoners to govern the treatment of prisoners in accordance to prison regulations and effectiveness of custody. The method to sustainable and effective solution is to introducing technology equipment. With expectation, the technological element can be advantageous for new correctional and criminal justice management, especially for the escape of prisoner condition in Thailand.

Environment

The environmental arrangement for crime prevention can analyze the adoption of electronic equipment in prison work since prison is regarded as a place where functions as custody of different ranges of severity of offenders. Hence the design of prison is to prevent all possible escapes of prisoners and monitoring for special type of prisoners.

Prison design means all structures and electronic and non-electronic equipment used in prison and correctional institution designing for most effective prevention of prisoner escape.

Prevention in this context means not only the prisoner escape but also the custody inmates to be abided by laws and regulations. Recently the department of Corrections encounters the contraband smuggling into prison via postal parcels, throwing over the wall, and carrying by some officers. Mobile phone, in particular, is considered as one of the most problematic smuggling across the country. The sanction and measure, therefore, are harsher for all prevention of occurrence of such act.

The introduction of electronic equipment for custodial work can reduce relation between prisoners and officials to some degree, because as the matter of fact the relation leads to motives or opportunity for committing unlawful acts. The electronic equipment cuts all potential period of time to conduct unofficial contact. Also it can be used for security protection when situation is driven to danger or in the case of prisoner escape. The arranging of prison area to be organized and tidied can help the custody and prisoner escape prevention more effective. The block zone used in prison has the high level of custody and control of prisoners by nature and it can control the movement and segregation of disturbing grouping of some inmates to the lower level. Therefore the use of block zone can be perceived as a very obliging for prison officer’s custody responsibility.

Effectiveness on custody and prisoner escape prevention

Based on the research result, technology for the custody and prisoner escape prevention can be considered such as the use of CCTV, Video Conference, Information Technology, block zone, X-ray, Metal Machine, Phone Record, and Scan Document. The CCTV should be in the dome-shaped type, due to the reason that this type of camera can monitor all over the areas and surrounding directions. Yet, the current CCTV camera that the DOC has been using is the rotatable type, which prisoners who attempt to escape can hide away from the monitor. Other reasons of the current version of camera are as follows; low quality; unable to operate in the night or dark area; complicated system and technology of the camera; not standardized camera; no after-sale service available for customer, non-compatibility to other electronic gadgets. The incidence of power failure in prison setting can also cause damages to electronic appliances. The CCTV system is the use of video recording files to the CCTV. It can be used in public and private areas including prison. The system employs the biometric technology or by recognizing face, behaviors for example. The picture is complete and high efficient for communication between officers and prisoners. Also it can retrieve as many times as wished.

The high quality CCTV should be installed at the key locations e.g. prison gate; prison walls. The CCTV shall be 24 hour operation and good quality of recording by day and night hours. The location of the camera installation shall be hidden from the observation of prisoners. From the study, the dome-shaped camera is recommended with the support of other types of technological equipment i.e. block phone, handheld metal machine, and the x-ray.

Discussion of research

The custodial and preventive measure of prisoner escape from prisons and correctional institutions is considered as the most crucial mission under the conception of societal protection from crimes. The Department of Corrections has one of the organizational missions, that is, to professionally keeping prisoners in custody by the usage of prison. The prison has its construction details of the firmly strong structure, the all aspect surround of periphery, and having the close monitoring by

prison officers together with the disciplinary rules of prison registration. The objective of the conception is to punish offenders for the crime they committed in the restricted area under the court of justice judgment.

The redemption of crime is done through the incapacitation of prisoners of committing a new crime. This conduct requires the close monitoring method due to the fact that the necessity of conduct is related to the impact of social security of the society and the country. The escapees from correctional compounds cause risk to society in any case that the recidivism arises. This is not only effect to the social security matter, but also gives risk to the socio-economic environment and tourism business of the country in which no matter in a short-term or long-term range it could make such inestimable amount of impact. The instance of such scenario is shown rather frequently in the daily newspapers that the allied searching forces of military, police, correctional and Office of the Narcotics Control Board officers to search for contrabands in prisons and correctional institutions in particularly the unauthorized mobile phones and illegal narcotic drugs. The investigation of such seizures reveals the connection of illegal drugs gangs inside prison and those outside of prison. The amount of money in circulation of this illegal business is several hundreds of million Baht. The international funds also join in the illegitimate drug trade through the temporarily permitted areas and expand the value of the illegal drugs trade in prisons higher ever.

In the past, most prisoners were minor thieves and committed crime with no determination, however, the trend has been shifted since 2002 (B.E. 2545) that the then Royal Thai Government promulgated the Narcotic Addict Rehabilitation Act B.E. 2545 (2002) for illegal drug users who were sent into prisons across the country. The result of the new Act brought down a number of prisoners in prisons. The characteristics of prisoners have been changed from the earlier time, because the new comers in prisoners were found more dangerous e.g. illegal drug sellers, dangerous criminals etc. The more common prisoner traits contain rather sophisticate knowledge, having monetary and social influence to others. Also, the financial capability of prisoners becomes higher in stability of action, therefore the transaction

of the illegal drug trade in prisons brought into the smuggling of contrabands which is used for the administration of illegal trade.

Most of the prisons and correctional institutions in Thailand have been built for a rather long period of time. At present, with their aging state of around 60 year old (Penology Bureau, 2554), the conditions of the construction were very fragile and decaying. The risk of prison construction has been one of many factors that are grated as ineffectiveness in custodial management.

According to the governmental policy, the downsizing in the manpower of public sector was seriously implemented. The solution of the policy was to emphasize the development of the system of bureaucracy and introduction of technology with the aim of becoming the effective and sustainable organization and developing civil servants to be professional in the field of particular works. As a result, the Department of Corrections has trouble with the limited number of prison staff condition. Due to the current custodial condition, the interaction between prison staff and inmates is undeniable. It also turns up in other forms of connection between prison staff and inmates especially the illegal activities. The reflection of situation communicates to publics that the Department of Corrections fails in custodial management, and the criminal justice system lack of trust from public. The research problem is a part of all problems that affect to the Department of Corrections reputation and as a result the lack of belief in organization from the publics could be developed in a greater level. The researcher has viewed that the custodial work of prisoners to govern the treatment of prisoners in accordance to prison regulations and effectiveness of custody. The method to sustainable and effective solution is to introducing technology equipment. With expectation, the technological element can be advantageous for new correctional and criminal justice management, especially for the escape of prisoner condition in Thailand. The punishment and the treatment of offenders in Thailand is the use of imprisonment which follows the concept of the Classical School theories as summarized in the following (Pornchai Khunti et al, B.E. 2543: 15). Philosophers and lawyer in Europe such as Cesare Beccaria (1728-1794), and Jeremy Bentham (1748-1832) are the leaders of the school of criminology and penology, Classical school, and

Neo-classical school with the pursuing concept of Free Will. The Free Will is the major concept that believes that the offenders is the person who choose their own decisions or make his own choices by weighting reward and punishment factors prior to any actions. It is the logic-based thinking or worthiness of any deeds or actions. Therefore went the offenders make careful decision of any action, they have to accept the impact derived from such decision-made act them. This school of thought treats offenders with the idea of incapacitation by the use of imprisonment or prison which is described as institutionalization for segregation from entire society.

The CCTV should be in the dome-shaped type, due to the reason that this type of camera can monitor all over the areas and surrounding directions. Yet, the current CCTV camera that the DOC has been using is the rotatable type, which prisoners who attempt to escape can hide away from the monitor. Other reasons of the current version of camera are as follows; low quality; unable to operate in the night or dark area; complicated system and technology of the camera; not standardized camera; no after-sale service available for customer, non-compatibility to other electronic gadgets. The incidence of power failure in prison setting can also cause damages to electronic appliances. The deficiency of machine for the custodial work can be one of the major problems of corrections. Technological appliances can be partly used, but the continuity of the technological development does not perform with certain standard. It is noted that the low quality of technological appliances are purchased in the expensive prices. Moreover the lack of maintenance budget is the common form of practice in the prison settings.

The solutions to such aforementioned problems regarding the effectiveness of custody and prisoner escape are as follows; the information technology master plan shall be taken into account by the advance technological budget arrangement. The procedure of procurement shall be proved for its effectiveness whether it is as good as advertised or not. The study of the after-sale service should be performed as to check the life-long product's quality guarantee. The reduction of the maintenance process to the faster service and the 24 hour control room shall be implemented solidly. The learning center shall be established in prison for giving knowledge of the information

technology to the prison staff conveniently. The recruitment of all level of prison staff and personnel shall be seriously taken into account for human resource development. Furthermore, the recruitment of the junior staff that experienced in operating technological appliance should aim to seek 1-2 personnel to each prison, while the training of the operating of technological appliance shall be reassured to the current personnel. Such trainings shall have a broad range of skills involving the understanding, analyzing, and implementing the work with technology. The course shall combine the good experiences of the senior and new prison officers to the sharing knowledge and techniques of the correctional works. The work rotation of the different positions of prison staff shall be implemented for the better and in-depth understanding of the entire correctional works. The Correctional Staff Training Institution has the major role of administration of the training and courses relating to the information technology. Also the personnel who are in charge of the IT training shall not be rotated to frequently as it is the prevention of work ambition. The equipment and welfare to personnel shall be adequately provided. The high quality CCTV should be installed at the key locations e.g. prison gate; prison walls. The CCTV shall be 24 hour operation and good quality of recording by day and night hours. The location of the camera installation shall be hidden from the observation of prisoners. From the study, the dome-shaped camera is recommended with the support of other types of technological equipment i.e. block phone, handheld metal machine, and the x-ray.

Problems and limitations

Problems and limitations of the research are as follows;

1. Problem of criteria selection or the observable and latent variables

As the matter of fact that there are many variables avail in the theoretical base, the researcher attempted to classify and group up the observable variables for the measurement of the latent variables. This stage happened before the framework of the research and model making to be set. The researcher tried to develop the model at times with the consultation with the research supervisors and co-supervisors including with the Department of Corrections executives. With the result,

to some extent the degree of confidence in the questionnaire is equipped on the data collecting day. The researcher tested the quality of the research tools in terms of content accuracy, the research structural accuracy, and reliability of data.

2. Limitation of question

Due to the reason that the interviewing of executives, expertise and custody directors in prisons by measuring all opinions, the researcher attempted to keep all aspects within the questions. It causes the effect on the long stand of the latent variables in order to over all areas of the relevant agendas. But the researcher also solved the problem by assuring the content accuracy, the research structural accuracy, and reliability of data before entering the research fieldwork. However, there are still some faults of the research and the researcher prevented the happening of such weakness by sending more questionnaire sets than expected

3. Limitation of personnel

The custodial personnel in prison and correctional institutions are inadequate for controlling inmates. Some officers lack knowledge, skill, technology use skill, and particularly the problem of techniques of work etc.

4. Data collection

Problems and limitations of the practice in handing questionnaires to 14 high security prisons across the country, that is, the Central Bangkwang Prison, Central Klongprem Prison, Central Chiangrai Prison, Central Klongpai Prison, Central Pitsanulok Prison, Central Rayong Prison, Central Nakhonsrithammarat Prison, Central Chaingmai Prison, Central Rachaburi Prison, Central Songkla Prison, Central Samutprakarn Prison, Thonburi Remand Prison, Central Khaobin Prison and Central Correctional Institute for Drug Addicts. The problems solved by the great cooperation from the prison directors.

Recommendations

The recommendation of the study can be clarified by the recommendation of the academic subject and the recommendations on the practical subject as seen in the following part;

Academic recommendation

The research result points out that the factors that affecting the effectiveness of custody and prevention of prisoner escape from prison providing in the ordering manner from the most important factor to the least important factor as follows; use of technology in custody; while these following factors are indirectly influential to effectiveness of custody and prevention of prisoner escape from prison, that is, the factors of prison officer operation; prison facility; custodial work; prison population trend; and the motivation of prisoner escape. In summary, the use of technology in custody work has the direct effectiveness of the custody and prevention of prisoner escape from prison. The ordering of such technology that important for the employment in order to achieve the effectiveness of the custody and prevention of prisoner escape from prison are as follows; CCTV, Metal Machine, Block Phone, X-ray, Phone Record, Information Technology, Video Conference and Scan Document respectively.

The custodial and preventive measure of prisoner escape from prisons and correctional institutions is considered as the most crucial mission under the conception of societal protection from crimes. The Department of Corrections has one of the organizational missions, that is, to professionally keeping prisoners in custody by the usage of prison. The prison has its construction details of the firmly strong structure, the all aspect surround of periphery, and having the close monitoring by prison officers together with the disciplinary rules of prison registration. The objective of the conception is to punish offenders for the crime they committed in the restricted area under the court of justice judgment.

Recommendation on the practice

Escape motivation

Based on the study, it shows that the escape motivation, even though it does not have the direct affecting to the effectiveness in custody and prisoner escape prevention, but the escape motivation has the statistical significance to the use of technology in prison. This represents that the most sample group points out that factor.

Therefore most of the prisoner imprisoned in prison or correctional institutions have their worries and homesick. Sometime, prisoners concern of their family and living. This as a result leads to escape from prison. The escape from prison can occur with any inmates whether the sentencing term is short or long as it is a crucial and possibly serious subject of inmate.

Prison officer operation

On the result of the study, despite the fact it does not have the direct affecting to the effectiveness in custody and prisoner escape prevention, but escape motivation of prisoner can be driven by receiving of sad news from home and other activities. Therefore the prison officer operation must rely on the ethics, morality and integrity. Prison officers shall be trained to be faithful to the work and not taking any advantage on prisoners or those who are in need. The training of the moral system for prison officers should be emphasized at all levels of the officers i.e. the junior, middle and senior staff for the exchanging of knowledge and experience of the cluster of prison officers.

The Department of Corrections shall have the Master plan for the Information technology and communication in order to develop the advancement of the Information technology and better effectiveness of the use of technology in correctional work to be able to control and prevent prisoner escape to zero. Besides, the connection of all relevant information and data system need to achieve the effective and efficient operation of the criminal justice system and correctional system. Furthermore, there shall be the foundation of the central Unit of Bureau of

technology for custody and prisoner escape prevention. By which the center seek to study and develop information technology, communication and security by the adoption of the technology in correctional work.

The implementation of technology in correctional work is rather sophisticated and challenging responsibilities. The reason of it is from the cost of technology today and future is high, therefore the level of worthiness of the technological system is rather thought-provoking to attain. The technological system maybe suits to some locations, but not all. As today the standardization of technology is questionable, the development of information technology to the standardization and long-term developing of technology should be encouraged to researchers and public for the development in pure science and applied technology.

The increasing of inmates in prisons and correctional institutions explains the criminal penalty and imprisonment reach the critical point of management. The Department of Corrections as the final agent of the criminal justice system receives all prisoners and detainees more and more every day. The prison officials' encounter more burdening responsibility when the prisons are overcrowded and the living state of prisoners get worse quality. The Department of Corrections seeks to new alternatives to handle situation such as the research on prison privatization for entire prison or in some part of the prison services e.g. prison transportation to court, prisoner laboring and etc. The western society also encountered the overcrowding prison and struggling to other modes of criminal penalty or the improvement of prison function to be more available criminal justice tools than in Thailand.

Prison officer operation

The study shows that the operation of prison officers has no direct affect to effectiveness of the custody and prisoner escape prevention. However, the sample group points out that the repetitive work, familiarity, personal shifting, being inexperienced, and corruption are factors of the inability to custody prisoners. Therefore the prison officer operation must rely on the ethics, morality and integrity. Prison officers shall be trained to be faithful to the work and not taking any advantage on prisoners or those who are in need. The training of the moral system for prison

officers should be emphasized at all levels of the officers i.e. the junior, middle and senior staff for the exchanging of knowledge and experience of the cluster of prison officers.

Prison building and facility

Based on the study, the Prison building and facility does not have any direct affect to the effectiveness of the custody and prisoner escape prevention. But most sample group shows that having the strong prison wall, zoning the restricted area in prison, and the use of barbwire on the prison wall and in some area could help the effectiveness of the custody and prisoner escape prevention in the physical element of prison management.

Therefore the building and facilities shall be maintained in the good condition at all time as possible for the controlling of prison and in some high security prison, the hardcore inmates are under the correctional control by the use of the high technology. Sharon Shalev (2009) stated that the changes in correctional field in many countries across the world seem to have the fundamental outlook of changes of prisoner population. The prisoner of the current time is more hardcore and cooperated than before. They have the advanced technology and at the same time the world takes a higher account of the human rights and including those behind bars, therefore many countries have faced new problem of correctional management and the traditional custody of inmates cannot effectively function anymore. The turning of the new face of prison such as the Supermaximum Security Prison or so-called 'Supermax Prison' seems to be a new phase of penology in the globalization world.

Prisoner population change

The research reveals that the changes of prison population do not make the direct effect to the effectiveness of the custody and prisoner escape prevention. But from the study findings, prisoner has changed in characteristics to become more dangerous and hard to custody. They have the advanced technology and at the same time the world takes a higher account of the human rights and including those behind bars inevitably.

As a result, the custody of prisoners in future and today should develop the new strategy to take in prisoner with more effective result. Moreover, in year 2015 the ASEAN Economic Community: AEC will be officially opened, the Department of Corrections needs to foresee the scenario of the criminal who may be more sophisticated and world wise and in order to manage the changing situation waiting ahead, the anticipation of the development of correctional system can be delivered by the support of the having the “Super Max”.

Environment

The research reveals that the environment does not make the direct effect to the effectiveness of the custody and prisoner escape prevention. But from the study findings, the environment answered by the sample group makes prison organized through the putting up more lights, clearing up space, arranging the block zone for the area function separation. The design of prison landscape prevents prisoner escape possibility.

Therefore the arranging location and function in prison and outside prison can be the proactive measure of the custody and prisoner escape prevention. The reducing the dead zone or the blind zone where it is hard to be monitored by prison officials at all time can reduce the potential of escape and illegal acts committing.

The use of technology

The research result notes that the use of technology has the direct effect to the effectiveness in custody and prisoner escape prevention with the statistical significance. Most sample groups see the importance of having technology in use for the correctional work as it brings in the knowledge of technology and the application to the custody and prisoner escape prevention in prison management which can increase the effectiveness in the control of prisoners in the sustainable period.

The Department of Corrections shall have the Master plan for the Information technology and communication in order to develop the advancement of the Information technology and better effectiveness of the use of technology in

correctional work to be able to control and prevent prisoner escape to zero. Besides, the connection of all relevant information and data system need to achieve the effective and efficient operation of the criminal justice system and correctional system. Furthermore, there shall be the foundation of the central Unit of Bureau of technology for custody and prisoner escape prevention. By which the center seek to study and develop information technology, communication and security by the adoption of the technology in correctional work.

Recommendations for future research

1.It should be the study of problems of using the technology in prison setting.

2.The comparison of factors affecting the effectiveness of the custody and prisoner escape prevention from prisons and correctional institutes across the country.

3.The study of probability of using the Neutralization Technologies in prisons and correctional institutes across the country.

4.The comparative study of technology in custody and prisoner escape prevention of Thailand and international arenas.

5.This research is conducted in a certain period of time and in the certain number of sample groups, therefore it is recommended for the long-term study in the future for better research findings.

6.This research is the accumulation of elements of the observable variables because the indicators of this research are many. The future research can conduct by the study of the second confirmatory factor analysis in the measure model for the profound in research finding. The research wishes to recommend that the data collection should be greater than the current one because of the result of analysis shall have more parameter values.

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Sharon Shalev, Supermax Willan Publishing Devo**.**

APPENDICES

APPENDIX A
LISTS OF SYMBOLS AND ABBREVIATIONS USED IN DATA ANALYSIS

To have a common understanding and correct interpretation, the below symbols and abbreviations are adopted throughout the data analysis in this dissertation:

n	Sample
%	Percent
$\overline{X}$	Mean
S.D.	Standard deviation
t	T-test
p-value	The attained level of significance
df	Degree of freedom
RMSEA	Root mean square of error approximation
CFI	Comparative fit index
GFI	Goodness fit index
STD RMR	Standardized root mean square residual
$\chi^2 (Chi - Square)$	Chi-square test
R^2	Regression
λ	Standardized solution

Considering the presentation of data analysis, these following abbreviations are used:

Latent Variable	Observed Variable	Abbreviation
Motivation behinds the escape		MOT
	Bad news from home	HOME
	Deception about their criminal case	FRAU
	Unjust treatment by officer	UNJU
	Gambling debt	GAMB
	Fight and conflict between prisoners	WRAN
	Seeking freedom and missing home	FREE
Work performance of prison officer		PER
	Lack of caution	CAUT
	Repetition of work	REGU
	Rotation of prison officers	SHUF
	Lack of skill and experience	NOSK
	Corruption among officers	CORR
	Smuggling of contrabands	PROH
Prison settings		BUI
	Solid and strong prison wall	WALL
	Indication and signing of NO PASSING zones at the wall	NOPA
	Not solid sleeping dormitories	BEDN
	Not solid prison gates	DOOR
	Separation of zoning area in prison	ZONE
Custody of prisoners		CON
	Classification system	CLAS
	Keeping and monitoring tools and equipment	KEEP
	Searching and monitoring settings and contrabands	EXAM
	Conducting the patrol and systemizing the guard	PATR
	Counting number of prisoners	NUMB
	Setting emergency and prevention measures	PLAN
	Systemizing the visitation	SYST

Change in prison population	CHA	
Increasing number of prisoners		INCR
More knowledge on custodial technology among prisoners		KNIT
Drug prisoners become more influential		INFL
Influential prisoners break prison rules		UNJU
Influential prisoners smuggle contrabands into prisons		THIN
Prison surroundings	ENV	
Making the places in prison clear, bright and airy		TRAN
Decorating the landscape clear and airy		LAND
Clear separation of areas (Block Zone) and showing the signs		ZONE
Changing the abandoned areas to be clear and airy places		COND
Application of Technology	TECH	
The Closed Circuit Television System		CC
The Computerized Database of Prisoners' Profiles		IT
The Video Conference System Linking Prisons and Courts		VC
The Cell Phone Signal Blocker Device		BP
The X-ray Machine		XR
The Metal Detector Machine		MM
The Scanned Document System		SD
The Sound Recording Device during a visit		PR
Efficiency in the Custody and Prison Escape Prevention	EFFIC	
The Closed Circuit Television System		CC
The Computerized Database of Prisoners' Profiles		IT
The Video Conference System Linking Prisons and Courts		VC
The Cell Phone Signal Blocker Device		BP
The X-ray Machine		XR
The Metal Detector Machine		MM
The Scanned Document System		SD
The Sound Recording Device during a visit		PR

APPENDIX B
NAME LIST OF EXPERTS EVALUATING IOC AND INTERVIEWED EXECUTIVES AND EXPERTS

ผู้เชี่ยวชาญพิจารณาค่าดัชนีความสอดคล้อง IOC ดังนี้

นายชาติชาย สุทธิกลม	อธิบดีกรมราชทัณฑ์
นายฐานิส ศรียะพันธ์	รองอธิบดีกรมราชทัณฑ์
นางสาวพรพิตร นรภูมิพิภัชน์	รองอธิบดีกรมราชทัณฑ์

สัมภาษณ์ข้อมูลเชิงคุณภาพด้วยผู้บริหารและผู้เชี่ยวชาญ ดังนี้

นายชาติชาย สุทธิกลม	อธิบดีกรมราชทัณฑ์
นายฐานิส ศรียะพันธ์	รองอธิบดีกรมราชทัณฑ์
นายกอบเกียรติ กสิวิวัฒน์	รองอธิบดีกรมราชทัณฑ์
นางสาวพรพิตร นรภูมิพิภัชน์	รองอธิบดีกรมราชทัณฑ์
นายสมศักดิ์ รัสิโยภาส	รองอธิบดีกรมราชทัณฑ์
นายชัยณรงค์ เศวตจินดา	ผู้บัญชาการเรือนจำพิเศษธนบุรี
นายนายธนวีร์ ประวัติ	ผู้บัญชาการเรือนจำเขาบิน
นายอัศวิน คุณพันธ์	ผู้บัญชาการเรือนจำกลางยะลา
นายอุดม คุ่ยณรา	ผู้บัญชาการเรือนจำกลางสงขลา
ดร.มนตรี บุญนาค	ผู้อำนวยการส่วนควบคุมผู้ต้องขัง ทัณฑสถานบำบัดพิเศษกลาง

APPENDIX C
QUESTIONNAIRE FOR CUSTODIAL PRACTITIONERS

Questionnaire for prison officers performing the custodial work *'The Efficacy of Technology in Preventing the Escape of the Inmates in the Prison'*

(Quantitative Data)

Introduction

In order to take inmates in custody and prevent the prison escape in prisons and correctional institutions, the Department of Corrections has adopted these following technologies:

1. The Closed Circuit Television System (CCTV)
2. The Computerized Database of Prisoners' Profiles (IT)
3. The Video Conference System Linking Prisons and Courts (Video Conference)
4. The Cell Phone Signal Blocker Device (Block Phone)
5. The X-ray Machine (X-ray)
6. The Metal Detector Machine (Metal Machine)
7. The Scanned Document System (Scan Document)
8. The Sound Recording Device during a visit (Phone Record)

I, therefore, aim to examine the efficiency and effectiveness in applying these technologies. This study is a part of the Doctoral of Philosophy program in Criminology, Justice Administration and Society, Mahidol University.

Questionnaire for prison officers performing the custodial work in prisons/correctional institutions

Explanation: Please check ✓ the box that best describes your personal information and fill out the answer in the space provided.

Part 1: Personal Information

1. Sex

☐ 1. Male age…….years old

☐ 2. Female age…….years old

2. Marital Status

☐ 1. Single

☐ 2. Married

☐ 3. Widowed

☐ 4. Divorced

☐ 5. Other, please specify……

3. Highest Level of Education

☐ 1. Lower than Bachelor's Degree: Name of Degree……..

☐ 2. Bachelor's Degree: Name of Degree……..

☐ 3. Master's Degree: Name of Degree……..

☐ 4. Doctoral of Philosophy: Name of Degree……..

☐ 5. Other, please specify…….. Name of Degree……

4. Length of time working in the service……..years

5. Position Level

☐ 1. Operational Level

☐ 2. Experienced Level

☐ 3. Senior Level

☐ 4. Practitioner Level

☐ 5.Professional Level

☐ 6. Senior Professional Level

☐ 7. Other, please specify……..

6. Current position.....

Part 2: Experience in the custodial work and prison escape prevention

1. How many correctional facilities have you ever been working on the custody of prisoners?.....prisons (Please place the list in a chronological order, oldest to newest).

   1) Name of correctional facility……from……..….to……..
   Total length of working time…….years

   2) Name of correctional facility……from……..….to……..
   Total length of working time…….years

   3) Name of correctional facility……from……..….to……..
   Total length of working time…….years

4) Name of correctional facility……from……..….to……..
Total length of working time…….years

5) Name of correctional facility……from……..….to……..
Total length of working time…….years

2. How many time have you ever experienced the prison escape (including the attempted one)?.....times. In what institutions? (Please place the list in a chronological order, oldest to newest)

1) Name of correctional facility…….in…… (Please indicate the year)

2) Name of correctional facility…….in…….(Please indicate the year)

3) Name of correctional facility…….in ……(Please indicate the year)

4) Name of correctional facility…….in ……(Please indicate the year)

5) Name of correctional facility…….in ……(Please indicate the year)

Please check ✓ the box that best describes your opinion.

3. The experiences that you use for taking the inmates in custody	**Very little**	**Little**	**Moderate**	**Very much**	**Most**
1. Conducting patrol and doing surveillance within the area of establishment, in particular the prison gates, wall and sleeping dormitories of inmates.					
2. Imposing an appropriate and serious punishment for the inmates escape					
3. Assigning the custodial task to the prison officers who are highly competent.					
4. Having a monthly meeting to brainstorm and find the solution for problems					
5. Having the intelligence and gathering news in prisons					
6. Keeping eyes on the unusual situation and keeping ears opened.					
7. Taking note of strange situation and reporting it to the commander.					

4. The techniques that you utilize in the custody of inmates?	**Very little**	**Little**	**Moderate**	**Very much**	**Most**
1.Making prisoners' profiles, taking prisoners' photos and fingerprints					
2. Classification of inmates					
3. Prison searches					
4. Monitoring the movement and suspicious behavior of high profile and influential prisoners					
5. Creating good environment and working with fairness					
6. Doing prisoner count frequently					
7. Installing the complaint box					
8. Taking note of behaviors and characteristics of prisoners					

Knowledge	**Very little**	**Little**	**Moderate**	**Very much**	**Most**
5. In your opinion, which level of knowledge in custodial technology that you possess?					
6. Have you ever been trained in the custodial training and the prison escape prevention courses? ☐ 1. No, I have not. ☐ 2. Yes, I have. Course:……..trained by……					

Part 3: The level of application of technology in the custody and prison escape prevention in your prison/correctional institution (current)

Criteria for marking

The application of technology means that the electronic system, computer system and technological equipment are used in the custody and the escape prevention in prisons/correctional institutions

Marking	**Meaning**
(0)	Never been used.
(1)	Not very often used, i.e. about 0-1 day per week
(2)	Not often used, i.e. about 2-3 days per week
(3)	Often used, i.e. 4 days per week
(4)	Very often used, i.e. 5-6 days per week
(5)	Mostly often used, i.e. 7 days per week

The application of Technology	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. The Closed Circuit Television System (CCTV)							
2. The Computerized Database of Prisoners' Profiles (IT)							
3. The Video Conference System Linking Prisons and Courts (Video Conference)							
4. The Cell Phone Signal Blocker Device (Block Phone)							
5. The X-ray Machine (X-ray)							
6. The Metal Detector Machine (Metal Machine)							
7. The Scanned Document System (Scan Document)							
8. The Sound Recording Device during a visit (Phone Record)							

Part 4: Factors affecting the custody of prisoners and the prison escape prevention in your prison/correctional institution.

Criteria for marking

Marking	**Meaning**
(0)	No impact
(1)	Very little impact
(2)	Little impact
(3)	Moderate impact
(4)	Great impact
(5)	Very great impact

Factor: Motivation behinds the prison escape	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. Receiving bad news from home or family can cause the (attempted) prison escape.							
2. Being fooled or deceived about their criminal case can cause the attempted prison escape.							
3. Being treated unjustly by the officers can cause the (attempted) prison escape.							
4. Having gambling debt in prison can cause the (attempted) prison escape.							
5. Fight and conflict between inmates can cause the (attempted) prison escape.							
6. Seeking freedom and missing home can cause the (attempted) prison escape.							

Factor: Work performance of prison officer	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. Working without carefulness or caution can make the prisoners disobey the rules and regulations or try to escape from prison							
2. The repetition of work, the familiarity and close relationship between prisoners and prison officers can make the prisoners disobey the rules and regulations or try to escape from prison							
3. Rotating the officer performing the custodial task can make the prisoners obey the rules and regulations and do not try to escape from prison.							
4. The lack of skill and experience of prison officers can cause the (attempted) prison escape							
5. The corruption among prison officers can make the prisoners disobey the rules and regulations or try to escape from prison.							
6. The smuggling of contrabands and prohibited items can make the prisoners disobey the rules and regulations or try to escape from prison.							

Factor: Prison settings	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. The strong and solid prison wall can help to prevent the prison escape.							
2. The clear indication and the sign for 'NO Passing' zones shown at the wall can help to prevent the prison escape.							
3. The sleeping dormitories of prisoners which are not strong and solid enough can cause the prison escape.							
4. The prison gate is not strong enough to prevent the prison escape.							
5. The arrangement and separation of zoning areas within prison can control and prevent the escape.							

Factor: The custody of prisoners	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. The inmate classification system can control and prevent the prison escape.							
2. The tools and equipment are safely kept and monitored.							
3. The buildings and settings as well as the contrabands/prohibited items are well searched and monitored.							
4. The patrol and surveillance are conducted and the guard shifts are systemized.							
5. The inmates are regularly counted.							
6. The emergency and prevention measures in the custodial task are set.							
7. The emergency plan is drafted and exercised.							

Factor: Change in prison population	0	1	2	3	4	5	Reason (if any)
1. The dramatically increased number of prison population affects the shortage of prison officers performing custodial task in prisons.							
2. The prisoners have gained more knowledge and understanding about the prison rules and regulations as well as the laws.							
3. The prisoners possess more knowledge in custodial technology than a group of prison officers.							
4. The drug-related prisoners have become more influential and dangerous.							
5. The influential prisoners tend to violate the prison rules and regulations.							
6. The influential prisoners can smuggle the contrabands and prohibited items into prisons.							

Factor: prison surroundings	0	1	2	3	4	5	Reason (if any)
1. Making the surroundings clear and airy, and keeping the areas within prisons bright and full of lights can create the efficiency in the custody and prison escape prevention.							
2. Decorating and creating a clear, bright and airy landscape can create the efficiency in the custody and prison escape prevention.							
3. The clear separation of each zone (Block Zone) and the signs of restricted areas which are clearly shown can create the efficiency in the custody and prison escape prevention.							
4. Changing all abandoned areas to be the clear and airy places can create the efficiency in the custody and prison escape prevention.							

The level of efficacy in the application of technology in the custody and prison escape prevention in your prison/correctional institution (current)

Criteria for marking

The efficacy means the ability in taking prisoners in custody and in preventing prison escape in prison/correctional institution by making them obey the prison rules and regulations and by preventing the escape of inmate, as well as by using the limited resources to prevent the smuggling of the prohibited items and contrabands into the establishment based on the limited manpower and the effective and efficient management as well.

Marking	**Meaning**
(0)	No efficiency
(1)	Very little efficiency
(2)	Little efficiency
(3)	Moderate efficiency
(4)	Great efficiency
(5)	Very great efficiency

Factor: Efficiency in the custody of prisoners and the prison escape prevention	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. The Closed Circuit Television System (CCTV)							
2. The Computerized Database of Prisoners' Profiles (IT)							
3. The Video Conference System Linking Prisons and Courts (Video Conference)							
4. The Cell Phone Signal Blocker Device (Block Phone)							
5. The X-ray Machine (X-ray)							
6. The Metal Detector Machine (Metal Machine)							

Factor: Efficiency in the custody of prisoners and the prison escape prevention	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
7. The Scanned Document System (Scan Document)							
8. The Sound Recording Device during a visit (Phone Record)							

Part 5: Suggestion on the application of technology in the custody and the prison escape prevention

1. Considering the application of technology in the custody of inmates and the escape prevention:

What is/are the problem (s)?

…….....

.....

.....

What is/are the solution (s)?

…….....

.....

.....

2. Apart from all eight systems, in your opinion what are the other technologies that you have applied to take the inmates in custody and to prevent the prison escape?

…….....

.....

.....

…….....

.....

.....

3. Please specify other suggestions regarding the application of technology in the custody and prison escape prevention.

…….....

.....

.....

…….....

.....

.....

Name:……..

(…….)

Position: ……

APPENDIX D
QUESTIONNAIRE FOR THE EXPERTS

'The Efficacy of Technology in Preventing the Escape of the Inmates in the Prison'
(Qualitative Data)

---

1. Name…….Position……
Agency……

2. Sex
☐ 1. Male age…….years old
☐ 2. Female age…….years old

3. Highest level of education…….Degree…….

4. Total length of time working in the governmental service……...……..years

5. Total Experience of custodial work and prison escape prevention…….……years

6. How many correctional facilities have you ever been working in the custody of prisoners?.....prisons (Please place the list in a chronological order, oldest to newest)
1) Name of correctional facility……from……..….to…….. Total length of working time…….years
2) Name of correctional facility……from……..….to…….. Total length of working time…….years

3) Name of correctional facility……from……..….to…….. Total length of working time…….years

4) Name of correctional facility……from……..….to…….. Total length of working time…….years

5) Name of correctional facility……from……..….to…….. Total length of working time…….years

7. How many times have you ever experienced the prison escape (including attempted one)?.....times. In what institutions? (Please place the list in a chronological order, oldest to newest)

1) Name of correctional facility…….in…… (Please indicate the year)

2) Name of correctional facility…….in…….(Please indicate the year)

3) Name of correctional facility…….in ……(Please indicate the year)

4) Name of correctional facility…….in ……(Please indicate the year)

5) Name of correctional facility…….in ……(Please indicate the year)

8. The experiences that you have applied technology for the custody of inmates and the prison escape prevention.

The application of technology	**0**	**1**	**2**	**3**	**4**	**5**	**Reason (if any)**
1. The Closed Circuit Television System (CCTV)							
2. The Computerized Database of Prisoners' Profiles (IT)							
3. The Video Conference System Linking Prisons and Courts (Video Conference)							
4. The Cell Phone Signal Blocker Device (Block Phone)							
5. The X-ray Machine (X-ray)							
6. The Metal Detector Machine (Metal Machine)							
7. The Scanned Document System (Scan Document)							
8. The Sound Recording Device during a visit (Phone Record)							

9. From your experience, should the Department of Corrections have the policy on the application of technology in the custody of inmates and the prison escape prevention? Why?

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10. From your experience, why does the application of technology lose its efficiency?

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11. From your experience, what are the measures that the Department of Corrections should be introduced in applying technology for the custody of inmates and the prison escape prevention?

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12. In applying technology, which factors in your opinion can lead to the success in the efficient custody of inmates and the escape prevention?

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13. Problem or difficulty and suggestion on the application of technology in the custody of inmates and the escape prevention.

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APPENDIX E
OFFICIAL PERMISSION LETTER FOR DATA COLLECTION FROM MAHIDOL UNIVERSITY

คณะสังคมศาสตร์และมนุษยศาสตร์ มหาวิทยาลัยมหิดล
๒๔/๒๕ ถ.พุทธมณฑลสาย ๔ ต.ศาลายา
อ.พุทธมณฑล จ.นครปฐม ๗๓๑๗๐
โทรศัพท์ ๐๒-๘๐๐-๒๘๔๐-๗๘ ต่อ ๑๐๑๔
โทรสาร ๐๒-๔๔๑-๙๗๓๘

ที่ ศธ ๐๕๑๗.๑๒/ ๗๘๐๒
วันที่ ๗๑ มีนาคม ๒๕๕๔
เรื่อง ขอความอนุเคราะห์เก็บข้อมูล

เรียน

ด้วย นายชาญ วชิรเดช นักศึกษาหลักสูตรปริญญาเอก สาขาวิชาอาชญาวิทยาและการบริหารงานยุติธรรม คณะสังคมศาสตร์และมนุษยศาสตร์ มหาวิทยาลัยมหิดล กำลังทำวิทยานิพนธ์ เรื่อง "THE EFFICACY OF TECHNOLOGY IN PREVENTING THE ESCAPE OF THE INMATES IN THE PRISON" โดยมี ผู้ช่วยศาสตราจารย์ ดร.ศรีสมบัติ โชคประจักษ์ชัด เป็นอาจารย์ผู้ควบคุมวิทยานิพนธ์

ในการนี้ นักศึกษามีความประสงค์ใคร่ขอความอนุเคราะห์เก็บข้อมูลโดยการสัมภาษณ์ และเก็บแบบสอบถามเกี่ยวกับหัวข้อวิทยานิพนธ์ เพื่อนำข้อมูลดังกล่าวไปประกอบการทำวิทยานิพนธ์ต่อไป

จึงเรียนมาเพื่อโปรดพิจารณาให้ความอนุเคราะห์ในการดังกล่าว จักขอบคุณยิ่ง

ขอแสดงความนับถือ

(รองศาสตราจารย์ ดร.สมบูรณ์ ศิริสรรหิรัญ)
รองคณบดีฝ่ายบริหาร
ปฏิบัติงานแทนคณบดีคณะสังคมศาสตร์และมนุษยศาสตร์

ติดต่อนักศึกษา นายชาญ วชิรเดช โทรศัพท์ ๐๘๑ - ๔๓๒ - ๒๐๔๓

BIOGRAPHY

NAME	Chan Vachiradath
DATE OF BIRTH	2 March 1971
PLACE OF BIRTH	Bangkok, Thailand
EDUCATION	1992 B.Ed. (Educational Measurement) Srinakharinwirot University (Prasanmit Campus) 1995 M.Ed. (Educational Measurement) Srinakharinwirot University (Prasanmit Campus) 1999 M.Sc. (Information Technology) King Mongkut's University of Technology Thonburi
CONTACT ADDRESS	59/222 Moo. 4 Soi 10/2 Tambon Banglane, Amphor Bangyai, Nonthaburi Province 11140
CURRENT POSITION AND WORKPLACE	Department of Corrections 222 Nonthaburi 1 Road, Suanyai, Muang, Nonthaburi Province 11000
POSITION	Penologist, Senior Professional Level, Department of Corrections, Ministry of Justice