

Guidelines for Criminal Investigation of Women Offenders Complied with the Principle of Proportionality and Individualization of Punishment Using Econometric Law Modeling

มาตรการสอบสวนผู้กระทำผิดหญิงให้สอดคล้องกับ
หลักแห่งการลงโทษตามสัดส่วนและหลักการลงโทษ
ให้สอดคล้องกับรายบุคคล โดยใช้กระบวนการสร้าง
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Abstract

The female population plays vital roles in society because women have diversified socio-economic roles such as a source of labor, while playing an important role in maintaining the stability of the family institution. This provides long-term strength to the country's development. At present, there has been an increase in number of female criminal offenders, especially in Thailand where the criminal code system has been applied as a basis for judging criminal cases of all Thais. The Thai legal system executes criminal penalties strictly in accordance with the provisions of the law. Each year, a large number of the female population is prosecuted and imprisoned. Imprisonment might not be a sustainable solution to the fundamental cause, and it also significantly restricts human rights and freedoms especially by punishing women offenders through imprisonment. This approach fails to consider the differences between female and male. Naturally, females are different from males in many dimensions such as anatomy, emotion, psychology, and physiology. The judgment imposing criminal sanctions on female offenders should implement a policy on individualization of punishment to serve equality, fairness and reasonability. In this research, guidelines for the investigation of female offenders in accordance with the principle of proportionality and individualization of punishment are applied through multidisciplinary principles such as econometrics and statistics, which readers can follow through in the next sections of the paper.

Keywords: Criminal Investigation, Female offenders, Gender differences, Individualization of Punishment, Principle of Proportionality, Women Rights

บทคัดย่อ

ประชากรเพศหญิงมีบทบาทที่สำคัญในสังคม เนื่องจากเพศหญิงเป็นหนึ่งในกลุ่มประชากรที่ช่วยขับเคลื่อนระบบเศรษฐกิจและสังคม เช่น การมีบทบาทเป็นแรงงานในระบบเศรษฐกิจ ตลอดจนยังเป็นในสมาชิกของสังคมที่ช่วยรักษาเสถียรภาพของสถาบันครอบครัวอันเป็นสถาบันหลักที่สำคัญ ซึ่งถือว่าเป็นหนึ่งในปัจจัยที่จะช่วยส่งเสริมให้ประเทศชาติเกิดการพัฒนาดได้ในระยะยาว ในปัจจุบัน ได้มีจำนวนผู้กระทำความผิดหญิงเพิ่มมากขึ้นอย่างมีนัยสำคัญ โดยเฉพาะอย่างยิ่งในประเทศไทย ซึ่งเป็นประเทศที่บังคับใช้กฎหมายกับทุกคนอย่างเท่าเทียมกันโดยไม่คำนึงถึงเพศของผู้กระทำความผิดอย่างมีนัยสำคัญ ซึ่งจะมีการตีความหรือพิพากษาคดีอาญาไปตามประมวลกฎหมายอาญาอย่างเคร่งครัดตามตัวบทกฎหมาย ในแต่ละปี ได้มีผู้กระทำความผิดหญิงถูกดำเนินคดีและถูกพิพากษาให้จำคุกในจำนวนมาก



การพิพากษาให้จำคุกอาจไม่ใช่การแก้ปัญหาดันเหตุและไม่ใช่การแก้ปัญหายั่งยืน และก็ยังเป็นการละเมิดสิทธิมนุษยชนที่ชัดเจน โดยธรรมชาติ เพศหญิงมีความแตกต่างจากเพศชายในหลาย ๆ มิติ เช่น สรีรวิทยา อารมณ์ จิตวิทยา กายวิภาคศาสตร์ เป็นต้น ดังนั้น การพิพากษาคดีอาญาต่อผู้กระทำผิดหญิง จึงควรถูกออกแบบให้สอดคล้องกับหลักวิทยาการต่าง ๆ สมัยใหม่ เพื่อให้การพิพากษามีความเท่าเทียม และมีความเป็นธรรมตลอดจนมีเหตุผล เพื่อให้สอดคล้องกับหลักการลงโทษให้ได้สัดส่วนและหลักการลงโทษให้เหมาะสมกับรายบุคคล งานวิจัยฉบับนี้ ได้ออกแบบมาตรการทางกฎหมายเกี่ยวกับการสอบสวนเพื่อใช้ประกอบในการพิพากษาคดีอาญาของผู้กระทำผิดหญิง โดยใช้กระบวนการทางนิติเศรษฐศาสตร์และการคำนวณด้วยโปรแกรมคอมพิวเตอร์ตามหลักสถิติเพื่อให้ระบบการพิพากษามีความเที่ยงตรง เป็นธรรม และมีเหตุผลตามหลักวิชาการสมัยใหม่

คำสำคัญ: การสอบสวนคดีอาญา ผู้กระทำผิดหญิง ความแตกต่างทางเพศ หลักการลงโทษ ให้สอดคล้องกับรายบุคคล หลักแห่งการลงโทษตามสัดส่วน สิทธิสตรี

1. Introduction

The Constitution of the Kingdom of Thailand is one of the most sacred public laws based on respect for the legal system. It is composed of broad frameworks or macro norms, or in other words, constitutional law is the highest law in the country which cannot be violated by any other laws. The present Constitution of the Kingdom of Thailand, signed by His Majesty King Maha Vajiralongkorn Bodindradebayavarangkun, was enacted on the 6th of April 2017 in the second year of the present reign. The main theme of the 2017 Constitution of the Kingdom of Thailand stipulates the norms for governing the state, mechanisms for operation legislative power, executive power to the judiciary and various independent organizations. One of the important constitutional governing norms is human dignity, including the rights and liberties of the Thai people who possess the privileges of sovereignty. One of the constitution's most important intentions is to establish rules that support and maintain the rights and freedoms and also the human dignity of citizens¹.

Judicious laws should enact legal principles that do not conflict with the principle of proportionality, principle of humanity, or principles of human rights. This can be inferred in the Constitution of the Kingdom of Thailand, 2017, especially in sections 4 and 5 in chapter 1 which is the general provisions part of the text. This section establishes the norms of respect for the dignity of the human being as well as the rights and freedoms of citizens establishing legal principles congruent with human rights - the principles that are universally important among all nations. Section 27, paragraph 3 in chapter 3 establishes legal norms that support and harmonize with realistic application to the diversity of human beings in various dimensions such as differences in gender, age, disability, physical condition as well as socio-economic status. It can be inferred that the Constitution of the Kingdom of Thailand 2017 can be considered one of the public laws that have legal measures congruent with and significantly supporting international principles. This research paper therefore chooses public legal principles from the Constitution of the Kingdom of Thailand 2017 as the norm for study.

¹ *The Constitution of the Kingdom of Thailand B.E.2560.*



Naturally, females and males are significantly different. The differences does not only include anatomical aspect² but also other various dimensions such as physiological differences like hormonal systems, behavioral differences³, and differences in abilities to acquire resources as a result of differences in the socio-economic status and educational level of males and females⁴. Moreover, the diversity of traditions and cultures in society also contributes to the social differences between males and females. The criminal acts of people are classified as a social phenomenon resulting from internal forces based on differences. Individuals have different motives for criminal acts. It depends on various factors already mentioned, such as physiological factors⁵, educational level⁶, age⁷, culture, traditions⁸, socio-economic status⁹ and gender¹⁰. Such factors shape and work with stimuli to incite offence or encourage the offender to commit a criminal offense. On the other hand, it can be concluded that criminal acts are the result of external and internal stimuli. The use of norms under the Constitution of the Kingdom of Thailand 2017 implies a basis for criminal judgment or conviction against all offenders under the same rules. It can be regarded as the use of

² Selim Jürgen Ergun, Teresa Garcia Muñoz & Fernanda Rivas, 'Gender Differences in Economic Experiments' (2011) 70 *Revista Internacional de Sociología* 1; John Dupré, 'The Human Genome, Human Evolution, and Gender' (2010) 17(4) *Constellations* 540; Spencer Rathus, Jeffrey Nevid & Lois Fichner-Rathus, *Human Sexuality in a World of Diversity* (5edn, Allyn and Bacon, 2002); Ann M. Kring & Albert H. Gordon, 'Sex Differences in Emotion: Expression, Experience, and Physiology' (1998) 74(3) *Journal of Personality and Social Psychology*, 686.

³ Selim Jürgen Ergun, Teresa Garcia Muñoz & Fernanda Rivas, *Ibid.*

⁴ 'Humanity Divided: Confronting Inequality in Developing Countries' (United Nation Development Programme, 1 November 2015) <<https://www.undp.org/publications/humanity-divided-confronting-inequality-developing-countries>> accessed 30 October 2021.

⁵ Anthony W. Hoskin, 'Male sex hormones and criminal behavior: The predictive power of a two-factor model of organizational androgen exposure' (2017) 108 *Personality and Individual Differences* 86.

⁶ Randi Hjalmarsson & Lance J. Lochner, 'The Impact of Education on Crime: International Evidence' (2012) 10(2) *CESifo DICE Report* 49.

⁷ Michael Rocque, Chad Posick & Justin Hoyle, 'Age and Crime' in *Encyclopedia of Crime and Punishment* (Wiley Online Library, 2015) <<https://onlinelibrary.wiley.com/doi/full/10.1002/9781118519639.wbecpx275>> accessed 30 October 2021.

⁸ Asma Zafar, Muhammad Asim, Nazia Malik & Muhammad Iqbal Zafar, 'Socio-Culture Factors Responsible for Crimes Committed by Females of Adiala Jail, Rawalpindi, Pakistan' (2013) 2 *Academic Journal of Interdisciplinary Studies* 373.

⁹ Ozlem Kizilgol & Sibel Selim, 'Socio-Economic and Eemographic Determinants of Crime by Panel Count Data Analysis: The Case of EU 28 and Turkey' (2017) 6(1) *Journal of Business, Economics and Finance* 31.

¹⁰ Candace Kruttschnitt, 'Gender and Crime' (2013) 39 *Annual Review of Sociology*, 291.

the legal system for equity but not necessarily fairness, so that the enforcement of the criminal conviction against the offender is most consistent with the establishment of the criminal law. Hence, the law should be taken into account in accordance with the principles of justice and at the same time the various driving forces of the offense of the individual to achieve individualization of punishment as well as to comply with the principles of individual fairness.

In the Thai public legal system, fundamental principles or practices have been established to comply with and support the principles of criminal sanctions to be individually appropriate, that is, individualization of punishment. For example, a part of Section 4 of the 2017 Constitution of the Kingdom of Thailand stated that human dignity is protected¹¹. Since females are different from males in numerous ways already mentioned, these differences result in criminal offenders - especially female offenders - being subjected to internal motivation, causing uncontrollable offenses in many situations because of the interaction of a range of physiological and other factors. To judge a female offender under the same legal norm as a male in all respects would not respond to the principle of respect for human dignity. It is the background of this research in trying to establish legal measures for prosecuting women offenders in the investigation. The traditional principle of proportionality in punishment, also known as the Principle of Proportionality, was first concreted in 1764 (B.E. 2307). In the essay writing “Essay on Crimes and Punishments by Cesare Beccaria, an Italian criminologist. Beccaria's concept focuses on “offenses” rather than “offenders” in the work presented to amend the law that punishes all classes equally which led to the foundation of criminology and important reform of the justice system. In particular, it addresses the punishment of the offender to the punishment appropriate for the offense committed under the principle of “Equal punishment for the same crime” and the determination of the severity of the punishment in proportion to the severity of the crime. The severity of the crime must be appropriate to the nature of the offense and must not be too cruel nor too little until making offenders think that their actions are worthwhile for the benefit of their crimes, a concept that underpins the current group of philosophers known as the “Economic Analysis of Law” which brings the basic principles of economics to the legal explanation in the criminal procedure¹².

¹¹ *The Constitution of the Kingdom of Thailand B.E.2560.*

¹² หยุต แสงอุทัย, ‘การกำหนดโทษสำหรับความผิดในประมวลกฎหมายอาญา’ (2503) 7 ตุลาคม 931. 931-935.



Currently, many nations - especially western countries such as the United States – clearly comply with the principle of human dignity in the context of gender differences¹³. The United States has begun to develop a system of criminal procedures in line with international principles supported by the United Nations, such as respect for human dignity, respect for human rights, etc. The United States has begun to develop a system of investigating offenders taking into account the motivation of various offenses such as the seriousness of criminal cases and criminal history. However, no country has a criminal investigation system incorporating influence or drive as a result of gender differences. Therefore, it is an interesting gap in the research for the development of legal measures related to the investigative system, which is one of the steps of the criminal procedure system responding to and in compliance with the principle of respect for human dignity, the principle of proportionality in criminal punishment under the same criminal code and in particular for the criminal punishment for women.

Individualization of punishment for women is not considered a legal measure to support the concept in terms of feminism, however, it is a criminal judgment under the same legal norm for both men and women. This research focused on establishing legal guidelines in the investigative system of women with due regard to the influence of differences heterogeneous *under the same law* that applies to males in all respects while providing women offenders an equal and fair criminal conviction in accordance with Section 4 of the Constitution of the Kingdom of Thailand. The legal measures created do not affect the judgment of a judge in making decision; the established legal measures are applied as an adjutant for a judge in criminal sentencing. It focused on establishing specific measures in the matter of investigating the suspects by the inquiring officer and the prosecutor before submitting a criminal case for attachment to the investigation in accordance with the measures established for the judge to continue the judgment of the criminal under their legal power. Practically, the judge's decision is questioned and reviewed prior to criminal sentencing. Therefore, it can be regarded as a *de facto* balance of power between the administration and the judiciary which can promote democratic regime.

¹³ Maryland State Commission on Criminal Sentencing Policy, *Maryland Sentencing Guidelines Manual Version 13.3* (2022).

It is well known that women are regarded as a population group important to the development of the country in various economic, social and political ways. It is evident that women are one of the social mechanisms that create dynamism in various socio-economic dimensions. Thai women have been greatly restricted in terms of their rights and freedoms in the past. However, the situation and ideas about the state of feminism have developed and become significantly more popular in the present era, which has reduced gender stereotypes and restrictions on women's rights and freedoms. Women play a major role in driving the Thai economy because the female population is large in all sectors of the economy whether in agriculture, industry, technology, etc. It can be concluded that women are an important mechanism for driving the Thai economy, answering the labour needs of a growing economy. This has resulted in the macroeconomic system being stimulated resulting in higher levels of gross national product (GNP) and gross domestic product (GDP)¹⁴. It is also one of the mechanisms supporting and contributing to higher levels of well-being reflected in the increasing national income or macro-social welfare because Thailand has an open economy, and such economic results can be transferred or circulated outside the country. This reflects Thailand's participation in the wider trend of global economic growth and social development.

It can therefore be summarized that the female workforce component is really important to macroeconomic development¹⁵. When considering other factors, women are not only involved in economic development, but also play an important role in driving or maintaining the stability of the family institution as mothers and wives. Being a mechanism for maintaining family ties results in children growing up in stable family environments. Women are therefore very important in reducing the social problems caused by homelessness and other undesirable situations arising from instability in the family institution. The discriminatory approach to criminal proceedings with individualized sentencing for women can be very helpful in reducing the number of women in prison as much as possible within the framework of laws and appropriate principles that will enable Thai society and the global community to have the opportunity to utilize human resources for the most benefit and worth. Considering criminal cases individually with regard to femininity (Women Individualized Sentencing)

¹⁴ จินตนา พรพิไลพรรณ, เศรษฐศาสตร์ทรัพยากรมนุษย์ 1 (พิมพ์ครั้งที่ 4, สำนักพิมพ์มหาวิทยาลัยรามคำแหง, 2551); วรณี จิเจริญ, เศรษฐศาสตร์จุลภาค 2 (พิมพ์ครั้งที่ 1, สำนักพิมพ์มหาวิทยาลัยรามคำแหง, 2558).

¹⁵ วันชัย ริมวิทยากร, การพัฒนาเศรษฐกิจเบื้องต้น (พิมพ์ครั้งที่ 1, สำนักพิมพ์มหาวิทยาลัยรามคำแหง, 2558).



is therefore not necessarily a feminist concept. Rather, it is a new criminal process that is in harmony with legal concept and female nature. This can make criminal trials both more fair and just at the same time.

In establishing legal measures for the female offender investigation system in this research, one of the important objectives is trying to reduce the number of female prisoners in prisons to maintain family relationships, whether it is the relationship between mother and child or between husband and wife in accordance with Section 71 of the Constitution of the Kingdom of Thailand 2017, which states that the state should strengthen the family which is an essential element of society and the state should promote and develop human resources to be good citizens having higher quality and capability. Moreover, the state should provide assistance to children, youth, women, the elderly, the disabled, the poor and the disadvantaged to be able to live with a decent quality of life and to prevent such persons from being violated or treated unfairly. However, imprisonment does not have a significant effect on the person receiving the sentence even if the perpetrator is aware that he or she must be imprisoned and was not afraid of imprisonment. This research paper also described the punishment processes by social sectors playing a higher and significant role. This results in offenders modifying their behavior more effectively than being imprisoned. It is therefore not economically viable if the country's budget is to be thrown into the prison system. The research also revealed that parole or certain procedures should be undertaken instead of imprisonment for individuals who committed non-serious offenses and had no repeat convictions¹⁶.

At present, the problem of prison overcrowding remains a major problem for incarcerating organizations around the world, leading to research and development to find solutions to accelerate the reduction of inmates. Similarly, prison organizations around the world may be less aware of the increasing number of women in prisons. From statistical data on world female prison inmates, 4th edition, September 2017 from the International Center for Prison Studies-ICPS, it can be seen that women are becoming more likely to commit crimes and be imprisoned: The United States; 211,870, China; 107,131, Russia; 48,478, Brazil; 44,700, Thailand; 41,119, India; 17,834, Philippines; 12,658, Vietnam; 11,644, Indonesia; 11,465, Mexico; 10,832, Burma; 9,807 and Turkey; 9,708 people, respectively. Research reported by Penal Reform International

¹⁶ Randi Hjalmarsson & Lance J. Lochner (n6).

(PRI) shows there were differences in criminal acts between men and women¹⁷. The majority of women commit crimes that were punishable but not serious, such as burglary, fraud, and traffic cases. The women charged tended to have a history of being subject to violence and psychological disorders. The number of female inmates in Thai prisons was ranked fifth in the world after countries many times larger than Thailand, including the United States, China, Russia and Brazil, respectively, with Thailand ranked second in Asia after China.

It is a concern for prison organizations around the world that why Thailand, a relatively small country, had a steady increase in the number of female inmates. In 2015, there were 73.4 Thai female prisoners per 100,000 population which is regarded as the highest proportion in the world, followed by the United States, Russia, Brazil and China, respectively. For this reason, Thailand must consider addressing this problem urgently¹⁸. This is because over the past ten years, the likelihood of offenses by and imprisonment of women has increased consistently. This is reflected by the rapid increase in the number of female inmates in prisons from 2008 to 2019¹⁹. As a result of the overflow of female prisoners, the second section of the research takes the legal measures addressed in the first section of the research and tries to analyze them and apply them to the reality of reducing the number of criminal convictions of women. Reduction of the number of criminal cases can reduce the number of female inmates in prisons. Keeping women out of jail does not mean gender discrimination; it is an action based on logic, such as judging with consideration of women's real emotional and physiological needs (W.Hoskin, 2017), (Hjalmarsson, 2012), (Kruttschnitt, 2013), (Kizilgol, 2017). Moreover, having fewer female inmates in prisons means that those women can be productively employed, increasing the GDP accordingly. The higher a country's GDP the better the welfare of the people. Since no research had been conducted to study the positive economic effects of reducing the number of female prisoners the researcher decided to analyze the impact of a decline in the

¹⁷ International Centre for Prison Studies - ICPS, World Female Imprisonment List (fourth edition) (Prisonstudies, 9 November 2017) <<http://www.prisonstudies.org/news/world-female-imprisonment-list-fourth-Edition>> accessed 30 October 2021.

¹⁸ Penal Reform International, 'UN Bangkok Rules on women offenders and prisoners: short guide' (Penalreform, 2013) <<https://cdn.penalreform.org/wp-content/uploads/2013/07/PRI-Short-Guide-Bangkok-Rules-2013-Web-Final.pdf>> accessed 30 October 2021.

¹⁹ กฤตยา อาชวนิจกุล และกุลภา วจนสาระ, ผู้ต้องขังหญิง: สถานการณ์และข้อเสนอเชิงนโยบาย (สมาคมนักวิจัยประชากรและสังคมและสถาบันวิจัยประชากรและสังคม มหาวิทยาลัยมหิดล, 2558).



number of female inmates in prisons on a country's GDP. In the study process, the research focused on creating forecasting equations from statistical principles and testing the model for how significant it was.

2. Research Objectives and Methods

To establish measures to investigate criminal female offenders, female offenders' overall score (T) was calculated by adapting the offense evaluation (X), basic information assessment results of the offense (Y) and the individual evaluation (Z). The scores are calculated by the equation $T = X + Y + Z$ for evaluation results of the seriousness of offenses. In the legal context, offense evaluation X had a full score of 15 but offender evaluation (Y) had a full score of 9 and individual evaluation (Z) had a full score of 100, so the total score of all three (T) was no more than 124 points as can be seen in table 1 below.

Table 1. Evaluation of basic information on offense cases in the context of litigation (Offense Evaluation; X)²⁰

Factors of Evaluation	Full-Score	Gotten Score
the seriousness of the criminal case	10	
the level of weapon used in the crime	2	
impact on the victim	2	
cruelty of criminal	1	
Total	15	

From table 1 above, in the seriousness category rating, the score given varies with the severity of the criminal case in accordance with the Maryland Sentencing Guidelines Manual²¹. It was divided into seven levels of severity, starting with the most serious level of criminal activity for which the offender receives a score of 10, proportionally reduced to the lowest level of seriousness (Level 7), where the offender receives a score of 0, etc. Subsequently, an evaluation was performed on the physical effects on the victim, where the score is a positive integer that goes from 0 to 2 proportional to the physical injuries of the victim. In other words, if the abused person is not physically affected (No Injury), the perpetrator receives a score of 0, or if the

²⁰ Maryland State Commission on Criminal Sentencing Policy (n13).

²¹ Ibid.

abused person is physically affected but does not lose his or her organs permanently (Injury, Non-Permanent), offenders receive a score equal to 1. If the abused receives permanent physical injury or death (Permanent Injury or Death), the offender receives a score of 2, etc. This assessment is carried out by officials who have the legal power to do so. Evaluation is carried out on the level of severity or nature of the weapon, where the score is a positive integer that goes from 0 to 2, and the rating given varies with severity. Where perpetrators act without weapons, the score for this section is 0, but for a crime with a less violent weapon than a gun, the score is 1. In contrast, if the weapon that is deadly, such as a gun or explosive, the score in this section is 2. Lastly, the score in the context of offense (Offense Evaluation) is considered in relation to the vulnerability of the affected (Special Vulnerability of Victim). If the criminal acts against a defenseless person such as the elderly or minors, offenders receive a score of 1. If the criminal does not act against a person who is incapable of self-defense, the offender receives a score equal to 0. There are only two scores in this section. The score of all four categories - physical impact on the victim, weapon, and the vulnerability of the affected person - each criminal receives an offense score (X) of no more than 15 points for each offense. The judges can apply the total score obtained in the proceedings as discussed in the next stages.

Table 2. Offender Evaluation (Y); Fundamental Information Assessment of Offenders in an Individual Context²²

Factors of Evaluation	Full Score	Gotten Score
Relationship to Criminal Justice System	1	
Juvenile Delinquency	2	
Prior Adult Criminal Record	5	
Prior Adult Parole/Prob. Violation	1	
Total	9	

According to table 2 above, the offender evaluation process was divided into four sub-categories: history of criminal prosecution or involvement with the department of justice about the execution of the case while having the status of being an accused (Relationship to Criminal Justice System; CJS When Instant Offense Occurred); age of

²² Ibid.



perpetrators in relation to the number criminal offenses in the last five years from the date of the last charge (Juvenile Delinquency); criminal offenses related to the severity of the criminal case (Prior Adult Criminal Record), and, the final category; the offender evaluation basis rating was considered in the context of the accused, having a history of direct or past parole breach (Prior Adult Parole / Prob Violation). The scoring processes for the background information of the perpetrators is on an individual basis (Offender Evaluation) in all four categories in table 2. In brief, starting with evaluation of the history of criminal prosecution or involvement with the Ministry of Justice on the execution of the case while in the status of the accused (Relationship to Criminal Justice System (CJS) when instant offense occurred), the score is an integer from 0 to 1 provided that if the perpetrator has never incurred a criminal conviction or has no other criminal case pending, the accused receives a score of 0, but if he or she has been penalized or has other criminal cases pending, they are scored 1. Then, the age of the offender in relation to the number of crimes committed in the last five years from the date of the last charge (Juvenile Delinquency) will be numerated. The possible scores are integers ranging from 0 to 2. If the accused is 23 years of age or more or has never committed a criminal offense in the five years since the last time accused, the accused will receive 0 points in this section. If the accused is not over 23 years of age or has committed one or two crimes in the five years since the last time the accused, the accused will receive 1 point in this section. Finally, if the accused is not over 23 years of age or has committed three or more crimes within the last five years since the last charge, they receive a score of 2. In the next category, the number of crimes committed in relation to the severity of the criminal record will be numerated²³. The score in this context is an integer from 0 to 5, where a score of 0 indicates the accused has never committed a criminal offense. If the score is 1, it means that the accused has committed a small number of crimes (Minor) at the severity of a criminal case. If a score of 3, the accused has committed a moderate amount of offense (Moderate) at the severity of a certain criminal case. If the accused has committed a major offense at the severity of a criminal case, they receive a score of 5. Lastly, the final category of the scoring process on the background information of the offender (Offender Evaluation) is considered in the context of whether the accused has a history of breach of an order or breach of parole for a past offense (Prior

²³ Ibid.

Adult Parole / Prob Violation). If the accused has a breach of an order or has breached parole for a past offense, they receive a score of 1. In contrast, if the accused has never had a history of breach of order or parole for a past offense, they receive a score of 0 in this category. After the legal authority has considered the offender evaluation in all four categories, the possible points obtained being from 0 to 9, the score can be applied in the judgment of the punishment by the judge.

Table 3. Individual Evaluation (Z)²⁴

Factors	Full Score	Scores Obtained				
		Psychologist (A)	Psychologist (B)	Psychologist (C)	Psychologist (D)	Psychologist (E)
anatomy, hormones, mental states, emotions (P)	50					
rituals, traditions, religions, beliefs (Q)	10					
socioeconomic status (R)	10					
education level (S)	30					
Total	100					
Average Score (Rounding to an integer)						

The assessment of scores in relation to women (Individual Evaluation; Z) is an abstract assessment method system since the assessor does not know definitely how the female suspect was motivated to commit the crime. In order to minimize the influence of the abstraction of the assessment in this section, the system is evaluated by psychologists. Psychologists use different evidence related to the case as the result of forensic medical examination score results from taking a psychological test, as well

²⁴ Ibid.



as the psychologist's own discretion. Criminals are observed to determine their score by expressions, eyes, body language, and behavior of the suspect during the discussion. The application of human discretion is unscientific in that the evaluation depends on how correctly and fairly a psychologist is convinced of their assessment of the accused on the basis of principles or with fair judgment.

In reference to table 3, the influences of anatomy, hormones, mental states (P), traditions, religions, beliefs (Q), socio-economic status (R), as well as educational level (S), are analyzed and assessed by at least two psychological analysts. For example, table 3 showed five psychologists; A, B, C, D and E, who independently assessed the individual evaluation score (Z) for each category. From table 3 above, it can be seen that each psychologist evaluated different scores. This is typical of the discretionary power system, but at least two psychologists are required to assess the criminal in order to balance check the reliability of the scores. The correlation of scores of two individual psychologists are examined in the investigation of women suspects at this process. The psychologists' score is represented by the correlation coefficient R. The correlation coefficient is a statistical parameter indicating whether the different quantitative data sets being considered are highly correlated or not. The correlation coefficient ranges from -1 to +1. For the procedures for investigating women in this category, a correlation coefficient of 1 means that the assessment results of all psychologists are similar which is what is expected to happen. If the correlation coefficient is 0, it means that the psychologists' assessments are not similar, but this is not expected for the purposes of this study in the process of investigating women suspects. For example, if five psychologists perform an individual evaluation score Z, after each psychologist has performed the evaluation of the individual assessment (Z), the individual scores are processed to calculate the overall correlation coefficient (R)²⁵.

²⁵ กัลยา วาณิชยปัญญา, การวิเคราะห์ข้อมูลทางสถิติด้วย Excel (พิมพ์ครั้งที่ 3, สำนักพิมพ์แห่งจุฬาลงกรณ์มหาวิทยาลัย, 2553).

Table 4. Assumed Results of the calculation of the correlation coefficient (R**) of 5 psychologists

	A	B	C	D	E	
A	1					
B	0.971494	1				
C	0.225494	0	1			
D	0.970222	0.890799	0.452911	1		
E	0.97714	0.909826	0.333333	0.970523	1	
Average R	0.82887	0.700156	0.595415	0.985262	1	0.82194

** R should be 0.8000 or 80% or more to be acceptable²⁶.

The assumed scores of each psychologist in table 3 were used to analyze the statistical relationship. The results of calculating the correlation coefficient (R) of five psychologists, as shown in table 4, could mean that psychologist A's Individual Evaluation (Z) scores were consistent with Psychologist B 97.1494% (97.1494% between psychologist A and B). The individual evaluation (Z) score of psychologist A was not consistent with psychologist C 22.5494% (psychologists A and C have only 22.5494% of discretion in one direction), which is very low. Despite this, according to the mean correlation coefficient of all 5 psychologists, it was found to be 0.82194 or 82.194%, which is still higher than 80% and therefore acceptable. This means all five psychologists had a consistency of 82.194% discretionary assessment of the Individual Evaluation (Z) score. After ensuring that all psychologists have reasonable discretion ($R \geq 80\%$), the results of the evaluation in all three categories are assessed holistically to calculate the total score T. The results of the basic assessment of offense in the categories of offense evaluation (X), offender evaluation (Y), and the individual evaluation (Z) results will be considered together for the total score calculation. The calculation of the female offender's overall score (T) will be performed by using X, Y and Z values cumulated according to the equation $T = X + Y + Z$, and it is known that the baseline assessment results of the offenders in the context of offense evaluation (X) is a full score of 15, offender evaluation (Y) is a full score of 9, and the assessment of individual evaluation (Z) is a full score of 100, so the total score of all three (T) would be no greater than 124.

²⁶ Ibid.



After the total score has been calculated, the next step is to calculate the penalty coefficient, C. The penalty coefficient is a number from 0.002 to 1.000 or can be written as the inequality $0.002 \leq C \leq 1.000$. The coefficient of mitigation (C) is a number calculated from the total score (T) according to the principle of proportionality modeled by a computer system by inputting a computational algorithm. The computer system reduces the criminal penalty in proportion to the total score T. If the female offender receives a large total score which reflects a negative result, the computer system would calculate the coefficient of the reduction of punishment by a lot. The computer's criminal abatement rate calculation system follows the equation $C = 0.008 (x + y + z) + 0.0077$. When the confidence of the system for calculating the penalty rate equation is 100%, the computer calculates the coefficient of the deduction according to the score that the investigator and psychologists have entered into the processing system.

Table 5. Total Scoring; T

X	Y	Z	$T = X + Y + Z$	$C = 0.008 (x + y + z) + 0.0077$
1	1	1	3	0.002
2	2	2	6	0.056
3	3	3	9	0.080
4	4	4	12	0.104
5	5	5	15	0.128
⋮	⋮	⋮	⋮	⋮
9	9	9	27	0.224
⋮	⋮	⋮	⋮	⋮
15	9	98	122	0.984
15	9	99	123	0.992
15	9	100	124	1.000

Table 5 shows the calculation of the total score of women convicted (T) made by using the results of the offense evaluations (X), offender evaluation (Y), and individual evaluation (Z) substituted according to the equation $T = X + Y + Z$. According to the table, fundamental information assessment of offenders in legal

contexts was 5 points ($X = 5$), offenders' baseline assessment score in individual context was 5 ($Y = 5$), and the score on individual influence factor is 5 points ($Z = 5$), which the computer used to calculate the coefficient of deduction (C) according to equation $C = 0.008 (x + y + z) + 0.0077$. This was calculated as a rate of 0.128, which means that the woman offender will receive a reduction of the sentence to 12.8% of the punishment a judge makes according to the normal system. For example, if a woman offender is sentenced to 10 years in prison by to the normal judgment system, the individualization of punishment principle and the principle of proportionality applied with judgment reduces the sentence to only 1.28 years in prison according to the measures. A mathematical equation to calculate the deductible penalty is $P_i = cP_j$ where P_i = individualized penalty, c = penalty coefficient, and P_j = judged penalty without the measure.

The measurement was designed using economic law modeling represented by mathematical functions to investigate criminal female offenders. This was done by calculating the female offender's overall score (T) by adapting the offense evaluation (X), basic information assessment results of the offense (Y) and the individual evaluation (Z). The scores are calculated by the equation $T = X + Y + Z$ for evaluating the seriousness of offenders. In a legal context, offense evaluation X was a full score of 15, but offender evaluation (Y) was a full score of 9 and individual evaluation (Z) was a full score of 100, so the total score of all three (T) can be no more than 124 points.

In the next step, it is demonstrated how the established legal measures can be applied to reality. To implement such measures, this research has utilized a case study of a completed criminal case. It was a manslaughter case in which a woman hired someone to kill her husband, ultimately being judged to execution by the criminal court of Thailand. If the court rules with no regard to the principle of individualization of punishment and the principle of proportionality, then the court would decide to execute the woman. But if the court applied the established measures into consideration with the judgment, it can result in the criminal punishment of the female prisoner being reduced.

In 2016, a criminal case occurred in Thailand. A female doctor hired to kill her husband. This is due to the prolonged psychological abuse of his husband, such as taking another woman to sleep in the house and also challenged the doctor to divorce him as well. Finally, this woman had planned to hire to kill her husband which her



husband is an athlete who is very healthy in this case, prosecutors have sued for the deliberate murder. And in the end, she was sentenced to death. Many people wonder why she did not receive any reduction of punishment for the physical and mental abuse by her husband. There were several studies stating that a woman who had been abused by her husband for a long time suffered a psychological condition known as *Battered Wife Syndrome*. The symptoms of repeated abused affects the body and mind and may lead to depression, loss of self-worth or aggression which can then be stimulated to violence. The crime could therefore have been considered to be caused by psychological pressure. Despite campaign efforts for women to stop tolerating abuse, enduring for family status, or for the well-being of a child, being patient might not always be the answer. There is risk of criminality when patience reaches its limit because finally, and by law, the “wife” became a “killer,” and was prosecuted and punished by law accordingly. In Thai society, there are quite a few women who live in a state of tolerance, being beaten by her husband on a regular basis, being hurt by her husband, but having to continue living together for different reasons, such as for children or for love. However, when this patience runs out, the wife becomes the defendant and kills her husband, which no one wants to happen²⁷.

If this case study utilizes the established legal measures for investigating female offenders before prosecution described in the previous section, initially, the investigating officers have to assess and evaluate case seriousness. *The Maryland Sentencing Guidelines Manual* categorizes the seriousness of criminal cases into seven levels of severity, starting with level 1- considered to be the most serious crime, such as murder, or others with intent or advocating the killing of others. The offenders receive a score equal to 10, proportionally reduced to the lowest level of seriousness (Level 7), where the offender receives a score of 0²⁸. Subsequently, the legal authorities evaluate the physical effects of the victim’s injury, where the score is a positive integer of 0 to 2 proportional to the physical effect on the victim. In the other words, if the abused person is not physically affected (No Injury), the perpetrator receives a score of 0, or if the abused person is physically affected but does not lose his or her organs permanently (Injury, Non-Permanent), the offender will receive a score of 1. If the abused person receives permanent physical injury or death (Permanent Injury or

²⁷ “ผู้หญิง”ฆ่า “สามี” เหตุถูกข่มเหง อ้างลดโทษ...ได้ไหม? *คมชัดลึก* (26 ธันวาคม 2559) <<https://www.komchadluek.net/news/scoop/253699>> accessed 30 October 2021.

²⁸ Maryland State Commission on Criminal Sentencing Policy (n13).

Death), the offender receives a score of 2. Next, the police evaluate the severity or nature of the weapon used, where the score is a positive integer from 0 to 2, and the rating given will vary with the severity or character of weapon. If the perpetrators act without weapons, they receive a score for this section of 0, but for a crime with a weapon that is less violent than a gun, they receive a score of 1, and if the act uses a weapon that is as deadly such as a gun or explosive, the score in this section is 2. Lastly, the score in the category of offense (Offense Evaluation) is considered in relation to the vulnerability of the affected person (Special Vulnerability of Victim). If the criminal acts against a defenseless person, such as the elderly or minors, offenders receive a score of 1. If the criminal does not act against a person who is incapable of self-defense, the offender will receive a score equal to 0, where the score in this section has only two levels: 0 and 1. The total score for all four categories leads to each criminal receiving an offense score of not more than 15²⁹.

Table 6. Evaluation of basic information on offense cases in the context of litigation (Offense Evaluation; X) of the doctor case

Factors of Evaluation	Full-Score	Evaluated Score	Annotation
the seriousness of the criminal case	10	10	hiring someone to kill others, considered one of the most serious criminal behaviors
the seriousness of the weapons used to cause the crime	2	2	hiring to use firearms to kill others
impact on the victim	2	2	victim died
the cruelty of criminals	1	0	victim was not classified as a defenseless individual - not classified in the group of children or the elderly
Total	15	14	

²⁹ Ibid.



According to table 6, the doctor was evaluated a score of 10 in the seriousness of the criminal case since she committed a serious crime; hiring someone to kill another person. Her rating for the seriousness of the weapons used to cause the crime was 2 because she hired to kill others using firearms, which was considered a very lethal weapon. the doctor was marked as 2 for impact on the victim because her actions resulted in death. However, although she received a high score in the first three parts, she received 0 points in the last part because the crime victim was classified as a physically active individual, not a child and elderly. Overall, she received a score of 14 out of 15 which was a high score and reflected her brutality.

Table 7. Offender Evaluation (Y); Fundamental Information Assessment of Offenders in an Individual Context of the doctor case

Factors of Evaluation	Full - Score	Evaluated Score	Annotation
Relationship to Criminal Justice System	1	0	never had a criminal record
Juvenile Delinquency	2	0	over 20 years old and has never been convicted of a crime
Prior Adult Criminal Record	5	0	the accused had never committed a criminal offense
Prior Adult Parole/Prob Violation	1	0	the accused had never violated parole - she had never committed a crime
Total	9	0	

From table 7, the doctor is seen to have never committed a crime and therefore had never been prosecuted. In addition, since the doctor had never committed a criminal offense, she had no criminal record and had no chance of violating her legal parole. The doctor received a score for every elements equal to 0 out of 9 which is a good score to reflect being a less serious criminal.

Table 8. Individual Evaluation (Z) of the doctor case

Factors	Full Score	Gotten Scores				
		Psychologist (A)	Psychologist (B)	Psychologist (C)	Psychologist (D)	Psychologist (E)
anatomy, hormones, mental states, emotions (P)	50	0	0	0	0	0
rituals, traditions, religions, beliefs (Q)	10	5	4	5	6	4
socioeconomic status (R)	10	10	10	10	10	10
education level (S)	30	30	30	30	30	30
Total	100	45	44	45	46	44
Average Score (Rounding to an integer)		45				

Table 8 shows the result of each psychologist's evaluation for all four categories: P, Q, R and S. From the table, it can be seen that all the psychologists rated P equal to 0, since the doctor might be affected by psychological pressures which are natural forces difficult to control. Since The doctor was considered an educated person with high economic and social status, it is likely she had the ability to analyze better than most. She still, however, hired someone else to kill her husband. That was a cruel behavior which resulted in a high score in the R and S parts, but no matter what, when combining the scores of all psychologists and calculating the average, it can be seen that the doctor received an average score of just 45 out of 100 points which is not very high.



Table 9. Results of the calculation of the correlation coefficient (R^{***}) of five psychologists of the doctor case

	A	B	C	D	E	
A	1					
B	0.999366	1				
C	1	0.999366	1			
D	0.999334	0.997401	0.999334	1		
E	0.999366	1	0.999366	0.997401	1	
Average	0.999613	0.999192	0.999567	0.998701	1	0.999414

*** R should be 0.8000 or 80% or more to be acceptable³⁰.

After each psychologist completed their assessment of the various points, the scores of each psychologist were analyzed to calculate the correlation coefficient (R). From the above calculations, it can be clearly seen that the mean correlation coefficient was 0.999414, meaning that all psychologists had 99.9414 % discretionary agreement which was easily high enough to be acceptable.

After calculating the value of the total score, the penalty coefficient (C) was calculated, where the penalty coefficient is a number from 0 to 1. The coefficient of reduction of the penalty (C) is a number calculated from the total score (T) according to the principle of proportionality using the equation $C = 0.008 (x + y + z) + 0.0077$, where the confidence of the system for calculating the penalty rate equation is 100 %. The computer calculates the coefficient of the reduction according to the scores that investigators and psychologists enter into the processing system as follows: $C = 0.008 (14 + 0 + 45) + 0.0077 = 0.48$. This means the doctor should have received punishment of only 48% of the death penalty. If the case had applied the established legal measures for investigating female offenders before prosecution, it would have allowed the defendant to receive less than half of the original criminal penalty. This can be regarded as creating a system of judgments taken into account the individualization of punishment principle and the principle of proportionality within the framework of Thai constitutional norms.

³⁰ กัลยา วาณิชย์บัญชา (n25).

3. Results

Table 10. Amount of female prisoners with its predicted values in the next ten years

<i>Year (BE)</i>	<i>Amount of Female Prisoners</i>	<i>Forecast (Amount of Female Prisoners)</i>	<i>Lower Confidence Bound (Amount of Female Prisoners)</i>	<i>Upper Confidence Bound (Amount of Female Prisoners)</i>
2551	19616			
2552	22278			
2553	22341			
2554	27934			
2555	27057			
2556	31738			
2557	36636			
2558	36532			
2559	34488			
2560	34916			
2561	40443			
2562	39682			
2563		43048.1236	38498.52	47597.73
2564		44938.1591	40365.40	49510.91
2565		46828.1947	42231.95	51424.44
2566		48718.2302	44098.16	53338.30
2567		50608.2658	45964.03	55252.50
2568		52498.3014	47829.56	57167.04
2569		54388.3369	49694.76	59081.92
2570		56278.3725	51559.62	60997.13
2571		58168.4081	53424.14	62912.68
2572		60058.4436	55288.33	64828.56
2573		61948.4792	57152.18	66744.78
2574		63838.5147	59015.70	68661.33
2575		65728.5503	60878.89	70578.21



According to the table 10., the figures in the table above consist of the number of female offenders in different years, as well as the forecast values under the lowest and highest values at the 95% statistical confidence level. For example, in 2575 B.E., computer predicted between 65728.5503 and 70578.21 female offenders, but on average 60878.89.

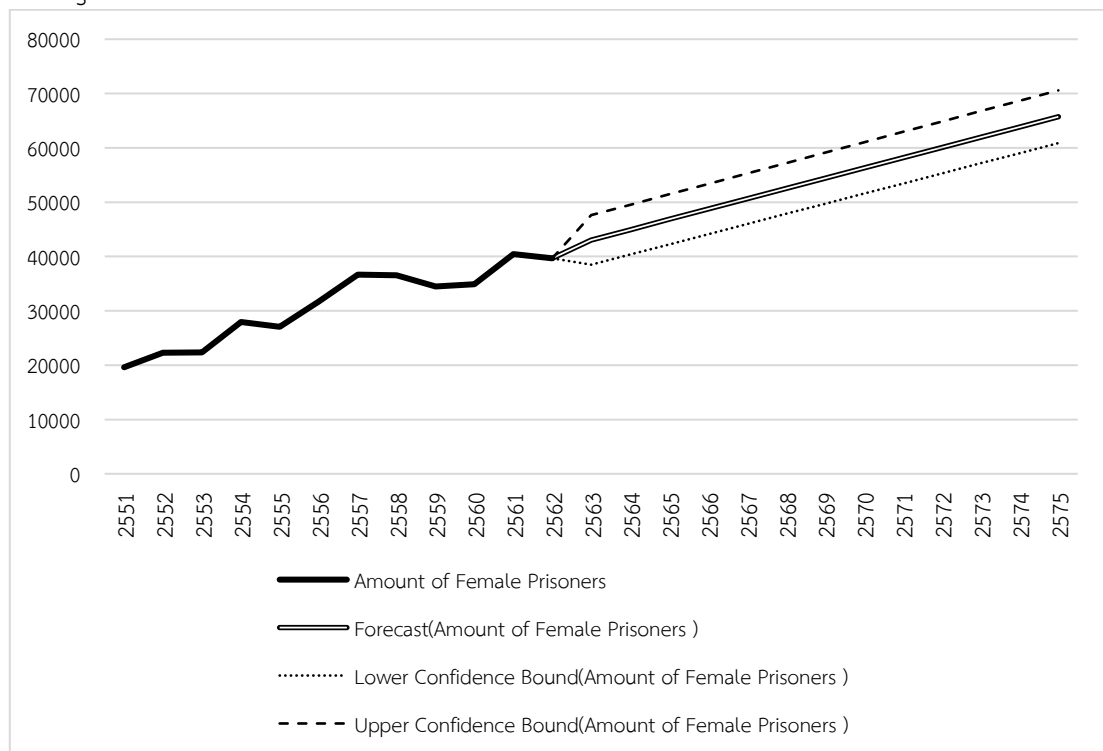


Figure 1. Relationship between the number of female prisoners (vertical axis) and time (horizontal axis)

From figure 1, it can be clearly seen that the number of female prisoners had a positive linear correlation with the time period. According to the graph above, it can be concluded that the number of female inmates in prison has continued to increase. Moreover, it is likely to continue to increase in the future. Therefore, for the ten years since 2566 B.E. (to 2575 B.E.) the number of female prisoners can be cumulated by using mathematical calculations from the forecasted line above. The result of the calculation was around 572,234 female prisoners. It can be said that over the next ten years (2023 - 2032) there will be approximately 572,234 female prisoners, although the mathematical model cannot specify how long each female prisoner might be

imprisoned. If calculating the average over a period of one day, it can be demonstrated that there are approximately 157 women imprisoned per day, hence, assuming that the minimum income of Thai people is 300 baht per day, it can be concluded that the state will lose approximately 47,100 baht of GDP daily. On the other hand, it can be summarized that over the next ten years, Thailand will lose a total of approximately 172 million baht of minimum GDP, which is a very high figure³¹.

Discussions and Recommendations

This research reveals that the rate of penalty is in significant agreement with the principle of proportionality according to the statistical test at significance level of 0.05. The criminal procedure specifically against women offenders is not considered an act promoting gender discrimination. Rather, it is the system that takes into account individualization of punishment and the punishment in accordance with the principle of proportionality applied so that resulting outcomes are equal and fair. This is consistent with a good public legal system to establish legal principles or measures that do not contradict the principles of proportionality, humanity or human rights. From the study and construction of the above result, it can be inferred that the investigative measure created is consistent with the principles of the Constitution of the Kingdom of Thailand.

The established guidelines for criminal investigation of women offenders complied with the principle of proportionality and individualization of punishment using econometric law modeling can help women offenders being convicted through formal judgment. This is because the measures are established on the basis of taking into account environmental factors such as education level, criminal record, economic and social status as well as other relevant factors. They have been analyzed collectively to more fairly convict women. It could therefore contribute to a reduction of the number of women in prison. Less imprisonment can result in more labor entering the macroeconomic system. The larger workforce can result in the economy being able to produce more goods and services, and the increase in the volume of goods and services inevitably lead to an increase in GDP³², and a return in

³¹ Damodar N. Gujarati, Basic Econometrics (4th edn, McGraw-Hill, 2012).

³² จินตนา พรพิไลพรรณ (n14).



the form of the welfare of the country³³. Nevertheless, this research is merely a brief overview of the positive impacts on the economy from the implementation of such measures in the judicial system. Future studies should take into account inflation and birth rates, which should make forecasts more accurate.

³³ วรณี จิเจริญ (n14).