

Economic Cost Analysis of Drug Offences in Thailand

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Abstract

Thailand faces significant hurdles in combating drug offenses, with more than 74% of its jail population incarcerated for drug related crimes. Methamphetamine ('ya ba') dominated these cases, highlighting the widespread problem of addiction and trafficking. Despite a tripling of government investment on prevention, suppression, and treatment initiatives between 2006 and 2016, the public's understanding of drug laws, rehabilitation choices, and health dangers remains unclear. The 2021 Narcotics Code contained health-related improvements, such as voluntary treatment and partial decriminalization, indicating a trend towards a more balanced approach. However, these interventions have had little effect on decreasing systemic burdens and societal stigmas. A comprehensive plan that includes education, accessible rehabilitation, socioeconomic support, and compassionate laws is required to reduce the economic and social consequences of drug-related offences.

Keywords: Drug Offences, Law Enforcement, Public Health Strategies, Drug Abuse Treatment, Marijuana and Heroin Trade, Crime Rates, Policy Implication

1 Introduction

Context Drug crimes signify a notable and rising threat for societies around the world, carrying profound implications for individuals, localities, and state authorities. In recent decades, the prevalence of drug abuse has intensified, overwhelming criminal justice systems and imposing substantial pressure on public resources. In Thailand, this issue is notably pressing, as more than 70% of those incarcerated are drug offenders, as indicated by the United Nations on Drugs and Crime (2020). Drug-related offenses, encompassing crimes involving substances such as marijuana and cocaine, persistently strain resources despite considerable endeavors to mitigate their supply through enforcement actions, seizures, and arrests.

The economic intricacies of drug offenses, particularly concerning substances like marijuana and cocaine, unveil a multifaceted scenario. Despite federal initiatives aimed at diminishing the accessibility of these drugs, especially since the 1980s, their prevalence in urban settings remains largely unaffected, as noted by Caulkins et al. (2012). In certain instances, the prices of cocaine have experienced a slight increase; however, this alteration is more likely attributable to evolving social attitudes rather than successful enforcement measures. This lack of significant impact on the street availability of drugs prompts inquiries into the overall efficacy of extensive enforcement strategies.

The economic repercussions of drug offenses extend beyond the immediate expenditure associated with law enforcement and incarceration. The financial burden on governmental institutions is considerable, as highlighted by Harwood et al. (1998), with drug offenses incurring substantial costs related to law enforcement, the judicial system, and correctional facilities. Moreover, the societal costs are significant, encompassing diminished productivity and escalating healthcare expenses. For individuals and communities, addiction results in reduced work capacity and a protracted economic burden on both public and private resources.

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application of the solution and can even be directed into idea management or rational thinking based on data science analysis [4].

The rest of the paper is structured as follows: Section 2 provides review of literature in the field of big data and business intelligence. In Section 3, illustration of methodology of research used in conducting the literature review systematically was covered. Section 4 gives a detailed explanation of the major findings of the review as well as a discussion on the articles critically dealing with big data and business intelligence. Finally, We then picture the major conclusions and discuss the limitations and future research areas of the review; theoretical implications, research needs, and practical implications were also highlighted in section 5. Public and private health insurance initiative are tasked with examining the financial ramifications of offering coverage for drug abuse therapy, covering both inpatient and outpatient care, as underlined by McCellan et al. (2000). By comprehending the costs associated with various treatment modalities, health plans can ascertain strategies to curtail expenses while preserving quality care. Also, it is encompassing lost productivity, costs incurred by the criminal justice system, and the influence on familial structures.

Research investigating the reasons enforcement measures have not substantially diminished the consumption of mass-market drugs indicates that, as Kilmer et al. (2010) elucidate, targeting drug production and distribution only marginally influences the final retail price. This suggests that current federal initiatives may only address a small portion of the drug trade's expansive economic network, leaving substantial gaps in the effective reduction of both supply and demand. Drug offense contribute to an array of challenges, including addiction, heightened crime rates, and overwhelmed healthcare system (Becker, 2009). The financial burden is apparent as governments allocate significant resources toward policing and legal proceedings. Furthermore, individuals grappling with drug addiction are frequently unable to engage in productive employment, resulting in notable productivity losses.

2 Literature Review

Thailand has been facing a profound drug crisis for many years, particularly related to methamphetamine and various other illegal substances. Economic evaluations of drug-related offenses within the nation encompass a variety of topics, such as enforcement costs, effects on the job market, and the wider economic implications of drug-related criminal activity and its repercussions. Below are significant themes and insights drawn from pertinent literature. Thailand's stringent approach to drug offenses, notably through severe penalties like extended incarceration, has resulted in a congested prison system. As noted by Phosphor to us (2019), the economic ramifications of imprisonment encompass both direct expenses, such as the upkeep of correctional facilities, and indirect expenses, such as the forfeiture of productive labor, given that many drug offenders are young individuals.

Research indicates that those engaged in the drug trade frequently hail from disadvantaged socio-economic backgrounds, and their incarceration can trigger cascading effects on their families and communities, worsening poverty and diminishing labor force engagement. In addition, many ex-prisoners find it hard to blend back into the fabric of society, thereby narrowing their economic avenues and increasing the likelihood of committing crimes again. The drug trade in Thailand is closely linked with the nation's informal economy, particularly in rural areas and along border regions. Investigations by Dabrowska and Kolk (2021) reveal that illicit drug production and trafficking furnish income to disadvantaged communities, particularly in northern Thailand, where alternative economic avenues are limited. The results in long-lasting repercussions on economic progress as illegal markets distort pricing structures and siphon resources away from legitimate sector.

Additionally, the World Bank (2016) discovered that the expansion of the formal economy through drug trafficking erodes state institutions and diminishes public confidence in law enforcement, further deterring investment and economic advancement. Drug-related crime and its consequent punishment exert a considerable influence on households, especially within underprivileged communities. The financial strain on families encompasses legal expenses, lost income, and the social stigma tied to drug offenses. Research conducted by Somsak and PNakul (2017) investigates the intergenerational impacts of drug-related incarceration, highlighting that children of imprisoned drug offenders frequently endure higher dropout rates and diminished future earning capacity.

Furthermore, numerous studies have underscored the cyclical relationship between poverty and drug-related crime, indicating that economically disadvantaged families are more susceptible to drug offenses, thereby perpetuating a cycle of poverty and criminal behavior. The financial implications of cannabis use in Thailand center on the economic consequences linked to enforcement and prosecution, given that cannabis remains prohibited in the country. Several direct and indirect expenses encountered by cannabis users are brought to light, including fines, legal

fees, transportation costs, and lost earnings, affecting both the user and their caregivers. The majority of these costs stem from legal proceedings and their associated expenses.

Costs related to medical care for cannabis use, including addiction treatment care for cannabis use, including addiction treatment, are also taken into account, though these are relatively minor compared to legal expenses. Furthermore, no evidence was found of accidents or property damage associated with cannabis use, indicating that users are likely to refrain from activities such as driving or socializing while under its influence. This stands in stark contrast to the more impulsive behaviors associated with substances like alcohol or amphetamines, reinforcing the notion of cannabis as milder, more reflective drug.

The economic consequences of drug-related offenses are considerable. Between 2007 and 2016, the Thai government invested over 74 billion baht in drug control initiatives, but the costs extend beyond direct spending. The decline in labor productivity due to the imprisonment of non-violent drug offenders is estimated to reach hundreds of billions of baht. Furthermore, the prevalence of corruption within law enforcement, with officials frequently involved in drug-related activities, complicates the situation and adds additional financial burden to the system. These factors contribute to the overarching inefficiency and expense of Thailand's current drug policies.

3 Methodology

We undertook a statistical research strategy to explore the interplay between drug offenses and the economic status in Thailand, concentrating on the ways in which drug-related actions impact financial indicators. The economic repercussions of drug offenses are assessed through various economic metrics such as GDP decline, healthcare expenses, and expenditures related to crime. The independent variables comprise the total estimates value of drugs imported and exported each year in Thailand, the estimate volume of drugs produced, and the number of drug user within the population.

3.1 Data source

For the aim of this analysis, secondary materials have been collected from the Ministry of Justice, the National Statistical Office of Thailand, together with United Nations Office on Drugs and Crime (UNODC). The dataset encompasses annual documentation of drug-related offenses, specifically detailing arrests, prosecutions, and convictions, spanning from 2010 to 2023 (UNODC, 2020; National Statistical Office of Thailand, 2021). Furthermore, essential economic indicators, including Gross Domestic Product (GDP), employment rates, government expenditure on law enforcement and healthcare, as well as costs associated with substance abuse, will be gathered over the same temporal framework (World Bank, 2023; Ministry of Finance, 2022). The data encompasses all geographical regions of Thailand, thereby facilitating a thorough national-level analysis.

This model aims to furnish insight into extent to which fluctuations in drug offenses correspond with economic performance. The simple linear regression model can be articulated as follows:

$$GDP = b_0 + b_1 (\text{Drug Offences}) + e$$

In this scholarly context, b_0 represents the intercept, which indicates the projected Gross Domestic Product (GDP) in the absence of drug offenses; b_1 function as the coefficient that elucidates the degree to which GDP fluctuates with each incremental increase in drug offenses, while e denotes any error or unexplained variance inherent within the model. Should b_1 be observed as negative and statistically significant, it would suggest that an escalation in drug offenses is associated with a reduction in GDP, thereby indicating a detrimental economic impact (Pernia & Piza, 2018).

Within this analytical framework, variables such as the unemployment rate, government expenditure on law enforcement, and healthcare costs related to drug abuse are included as independent variables. The formulation of the multiple linear regression model is articulated as follows:

$$GDP = b_0 + b_1(\text{Drug Offences}) + b_2(\text{Unemployment Rate}) + b_3(\text{Gov. Spending}) + b_4(\text{Healthcare Costs}) + e$$

In this healthcare costs, respectively, on GDP, while simultaneously controlling for the prevalence of drug offenses. By incorporating these variables, the model effectively captures additional economic factors that may also influence GDP. For example, an increase in drug-related offenses may lead to rise in unemployment and augmented government spending, thereby further affecting economic performance (Chalise, 2021).

The application of multiple linear regression allows for a more nuanced understanding of how drug offenses impact the economy, not solely in a direct manner but also indirectly through their implications on other economic variables. For instance, an increase in drug offenses could lead to heightened unemployment, which may subsequently hinder GDP growth. Furthermore, increased healthcare expenses associated with substance abuse may exert additional pressure on the economy.

The dependent variable, which encapsulates the impact of drug offenses on Thailand's economy, is operationalized through the country's Gross Domestic Product (GDP). Drug-related activities can influence the economy in various dimensions, such as increasing government expenditure on law enforcement, rehabilitation, and healthcare, while concurrently reducing workforce productivity due to addiction and drug-related criminality (Pernia & Piza, 2018). A significant prevalence of drug offenses often results in heightened public expenditures and stunted economic growth (Chalise, 2021). By examining GDP fluctuations in relation to drug offenses, this study seeks to quantify the extensive economic implications of these activities within Thailand.

The independent variables in this study encompass the total estimated value of drugs imported and exported annually in Thailand, the estimated quantity of drugs produced, and the population of drug users, all of which are critical in determining the economic consequences of drug-related offenses within Thailand. The drug import/export dimension pertains to the trafficking of illicit substances across international borders, thereby increasing the demand for law enforcement and potentially disrupting international trade, investment, and tourism (UNODC, 2020). The drug production aspect focuses on the domestic manufacture of illegal substances, which leads to increased crime rates, heightened law enforcement costs, and elevated healthcare expenditures associated with addiction treatment (World Bank, 2023). Finally, the population of drug users signifies the society burden of addiction, which exacerbated healthcare costs, reduces workforce productivity, and increases unemployment, thereby contributing to economic strain (Field, 2018). Collectively, these variables illustrate the multifaceted ways in which drug-related behaviors impact the economic framework of Thailand.

4 Result and Discussion

The examination of drug-related crimes and their effect on Thailand's economy underscore considerable financial strains on public services and overall economic efficiency. The healthcare system incurs hefty expenses due to illnesses linked to drug use, such as HIV/AIDS, hepatitis, and overdose treatments. It is estimated that approximately 0.5-1% of Thailand's GDP is spent each year on healthcare services associated with drug addiction, which encompasses medical care and rehabilitation programs. These financial demands redirect in pressure on the government's healthcare infrastructure and additional public health obstacles.

Beyond healthcare, drug-related offenses generate significant costs for law enforcement and the criminal justice system. Crimes associated with drugs represent nearly 25% of the total crime rate in Thailand, leading to substantial expenditures in policing, legal actions, and incarceration. A considerable share of the national budget is allocated by the criminal justice system for the prosecution, imprisonment, and rehabilitation of drug offenders. Furthermore, drug-related offenses lead to reduced productivity in the workforce, especially in sectors such as agriculture, construction, and services, where drug addiction and trafficking hinder employee performance. The overall decline in productivity, encompassing both formal and informal sectors, has a negative impact on Thailand's economic performance, with estimate annual losses amounting to a significant fraction of GDP growth.

4.2 Drug related crimes

Table 1 delineates the distribution of drug offence categories in Thailand from 2017 to 2020, classified into four distinct domains: drug utilization, production, exportation and importation. Drug utilization cases invariably represent the majority of offenses, fluctuating between 90% and 96% over the six-year period. The apex of this distribution was observed in 2019, reaching 96%, whereas the years 2017, 2020 and 2022 exhibited lower prevalence rates 90%. This enduring predominance of drug utilization cases underscores the considerable challenge posed by drug dependency in Thailand, serving as a principal factor (United Nations Office on Drugs and Crime (UNODC), 2021). The minor fluctuations in percentages may indicate modifications in enforcement strategies of alterations in reporting protocols during this timeframe (Office of the Narcotics Control Board (ONCB), 2022). Export cases, standing for a small fraction of total offences, ranged from 4% to 9% between 2017 and 2022, peaking at 9% in 2017 and 2020.

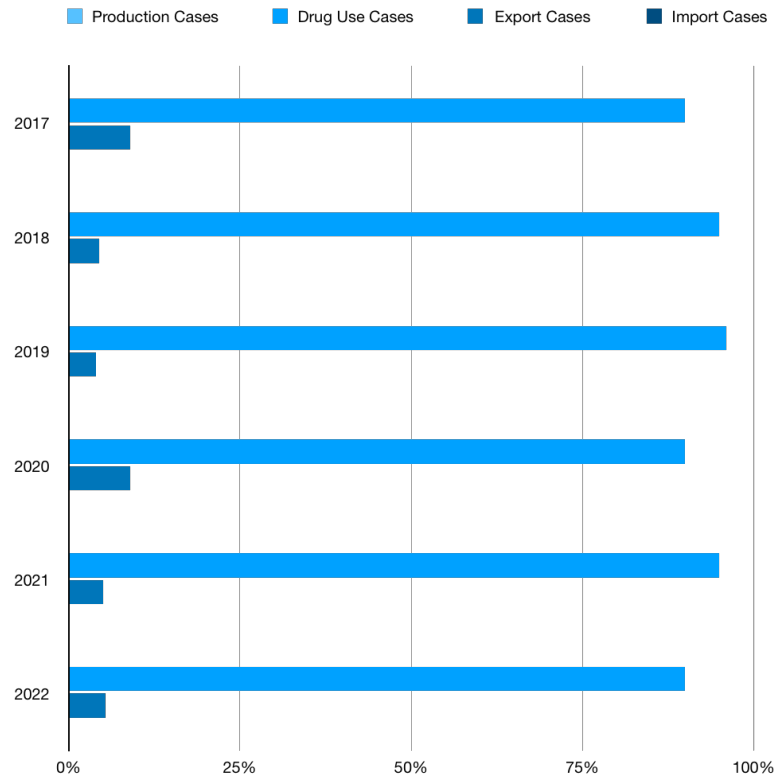


Figure 1 : Economic costs of drug offences in Thailand, 2017-2022

These examples illustrate Thailand's involvement in regional narcotics trafficking systems, albeit they are notably limited when compared to instances of local substance use. Incidents pertaining to importation and production uniformly represent 0% of total offenses over the examined timeframe, thereby underscoring a minimal documented influence from such categories of drug-related activities. This implication indicates that the challenges associated

Variable	Count	Percentage of survey options
Awareness of drug offences in Thailand	87	73%
Impact of drug offences on economy	80	66%
Effects of drug trafficking on income.	77	64%
Impact of drug production on economy	77	64%
Level of drugs use in population	77	64%
Government spending on drug law enforcement	70	58%
Marijuana and other drugs produced	71	59%
Community impact of drug-related crime	115	96%
Main reason for high drug use in South	88	73%
Economic factors affecting drug use	84	70%
Family/social factors contribution to drug cases	77	64%

Table 1: Awareness and impact of drug offenses in Thailand

Table 1 presents a comprehensive analysis of factors related to drug offenses and their extensive repercussion in Thailand, illustrated through percentage distributions. The findings indicate that the awareness surrounding drug offenses, along with their economic ramifications, approaches 100%, signifying an elevated degree of public and institutional acknowledgement of the matter. Correspondingly, the social consequences of drug-related activities are distinctly observable, with more than 75% of participant recognizing its effect on community welfare.

Economic variables influencing substance use, alongside familial and society contributions, play a significant role in elucidating the interconnectedness between socio-economic conditions and substance abuse. The fiscal commitment of the government toward drug law enforcement has emerged as a moderate determinant, underscoring the imperative for enhanced resource allocation and strategic refinement for enhanced resource allocation and strategic refinement. Moreover, the prevailing moderate rate of substance use within the populace signifies a persistent challenge that necessitates the implementation of the targeted prevention and rehabilitation strategies.

Factors such as the cultivation of marijuana and other narcotics, in conjunction with the predominant reasons for elevated drug consumption in the Southern region, illuminate the geographic and substance-specific obstacles encountered by the nation. The implications of drug trafficking on income generation and the repercussions of the drug economy on Thailand suggest more extensive economic consequences that transcend individual instances. These findings accentuate the necessity for a multifaceted strategy that harmonizes public awareness initiatives, economic policy frameworks, community support systems and vigorous law enforcement to alleviate the pervasive ramifications of drug offenses in Thailand.

Economic determinants influencing drug consumption, alongside familial and social contributions, significantly underscore the intricate relationship between socio-economic conditions and substance misuse. The allocation of government resources towards drug law enforcement has been identified as a moderate factor, thereby accentuating the imperative for improved resource distribution and strategic enhancement. Additionally, the sustained prevalence of drug usage within the populace signifies a persistent challenge that necessitates the implementation of focused prevention and rehabilitation initiatives. Elements such as the cultivation of marijuana and other narcotics, in conjunction with the primary contributors to elevated drug use in the Southern region, highlight the geographical and substance-specific obstacles confronted by the nation. The ramifications of drug trafficking on income, coupled with the implications of the drug economy on Thailand, indicate more extensive economic consequences that transcend individual instances. These observations underscore the critical need for a comprehensive strategy that amalgamates public awareness, economic policy, community support frameworks, and vigorous law enforcement measures to alleviate the widespread ramifications of drug offenses in Thailand.

The discourse surrounding drug-related concerns in Thailand elucidates both societal perceptions and empirical trends, thereby providing a holistic comprehension of the issue at hand. Survey findings indicate that 73% of participants possess awareness of drug offenses, with numerous respondents identifying socio-economic factors—such as drug accessibility, educational deficits, and unemployment—as fundamental catalysts. The ramifications of drug-related crime on communities emerge as a paramount concern, with 96% of individuals recognizing the detrimental impacts of such offenses. These findings elucidate the necessity for more robust preventive strategies that prioritize education, community involvement, and the mitigation of underlying causes.

In contrast, statistical evaluations yield an objective assessment of offense categories from 2017 to 2022. Drug usage incidents prevail, consistently comprising 90% to 96% of offenses, thereby illustrating the widespread influence of methamphetamine. Export instances represent a minor fraction, peaking at 9%, indicative of Thailand's involvement in regional trafficking, while cases pertaining to production and import remain minimal. Collectively, these perspectives emphasize the urgent requirement for equitable strategies that integrate enforcement, public enlightenment, rehabilitation, and socio-economic reforms to effectively confront drug-related adversities. Thailand has achieved advancements in raising awareness regarding drug offenses through stringent legislation, educational initiatives, and health-centered reforms such as voluntary treatment programs. These endeavours have fostered discourse and a more equitable methodology towards prevention and recovery. In order to surmount these challenges, Thailand must implement a more comprehensive strategy that harmonizes enforcement with educational initiatives, accessible rehabilitative services, and humane legal provisions. This encompasses the enhancement of public awareness campaigns aimed at diminishing stigma, streamlining access to treatment pathways, and reforming legal frameworks to decriminalize minor infractions while concentrating on larger trafficking syndicates.

Moreover, future research should investigate the socio-economic catalysts of drug-related dilemmas, including poverty, unemployment, and educational shortfalls, to formulate targeted interventions that address foundational

issues. By integrating these methodologies, Thailand can develop a more effective and sustainable framework for tackling drug offenses while mitigating the social and economic burdens they impose on society.

5. Conclusion

Thailand faces complex and deeply rooted challenges from drug-related offenses, which have far-reaching social and economic impacts. This research underscores that drug-related crimes, particularly those involving methamphetamines, contribute to heightened incarceration rates, strain on public resources, and lost productivity. Despite robust investments in enforcement and rehabilitation, the persistence of high offense rates highlights the limitations of existing strategies.

The analysis reveals that addressing drug offenses requires a comprehensive approach that transcends punitive measures. Public awareness campaigns, accessible rehabilitation services, and socioeconomic reforms are critical to mitigating the systemic burdens of drug-related crimes. Legislative advancements, such as the partial decriminalization of certain substances and health-centred reforms, indicate progress but remain insufficient without holistic implementation.

Moving forward, Thailand must prioritize a balanced strategy that integrates law enforcement with preventive and rehabilitative measures. Tackling the root causes, including poverty, unemployment, and educational disparities, can create a sustainable framework for reducing the prevalence and impact of drug offenses. By aligning policies with community needs and international recommendations, the nation can effectively diminish the social and economic toll of drug-related activities while fostering a more equitable and resilient society.

BIBLIOGRAPHY

- [1]. Priyaranjan, S. (2018). Economic and Social Costs from Drug Abuse Control Policy of the Thai Government. *Journal of the Association of Researchers*, 23(1), 13-32.
- [2]. Giommoni, L. (2013) Book review. Caulkins Jonathan P., Hawken Angela, Kilmer Beau and Kleiman Mark A. R. Marijuana Legalization: What everyone needs to know – *European journal on criminal policy and research*, SpringerLink. Available at: <https://link.springer.com/article/10.1007/s10610-013-9217-3>
- [3]. World Drug Report 2020 United Nations: World Drug Report 2020. Available at: <https://wdr.unodc.org/wdr2020/en/index2020.html>
- [4]. Thailand's "War on Drugs." Human Rights Watch. (2020, October 28) <https://www.hrw.org/news/2008/03/12/thailands-war-drugs>
- [5]. Caulkins, J. P., Kilmer, B., & MacCoun, R. J. (2012). Designing a marijuana legalization system: Lessons from alcohol and tobacco. RAND Corporation. Retrieved from https://www.rand.org/pubs/monograph_reports/MR1400.html
- [6]. Heck, C., & Roussell, A. (2007). State administration of drug courts: Exploring issues of authority, funding, and legitimacy. *Criminal Justice Policy Review*, 18(4), 418-433.
- [7]. Marlowe, D. B. (2011). Adult and juvenile drug courts. *Handbook of evidence-based substance abuse treatment in criminal justice settings*, 123-142.
- [8]. Peter, M.A.R.K.R. (1986) Risks and prices: An economic analysis of drug enforcement, Risk and Prices: An Economic Analysis of Drug Enforcement. Available at: https://reuter.it-prod-webhosting.aws.umd.edu/sites/default/files/reuter/files/Risks_and_prices.pdf
- [9]. Llyana Kuziemko, D.L.S. (2001) An empirical analysis of imprisoning drug offenders, An empirical analysis of imprisoning drug offenders. Available at: <https://pricetheory.uchicago.edu/levitt/Papers/KuziemkoLevitt2004.pdf>
- [10]. Sara, M. (2000) An economic analysis of alcohol, drugs, and violent crime ... Available at: https://www.nber.org/system/files/working_papers/w7982/w7982.pdf
- [11]. Reuter, P., & Stevens, A. (2007). Assessing Global Drug Problems and Their Impact on Governance and Security. *International Journal of Drug Policy*, 18(1), 64-69.
- [12]. UNODC. (2020). Drug Crime and Criminal Justice in South-East Asia: Trends and Policy Implications. United Nations Office on Drugs and Crime Report.

- [13]. Pholphirul, P. (2019). Economic and Social Costs of Thailand's Drug War: Criminalization and the Labour Market. *Journal of Economic Studies in Southeast Asia*, 7(2), 120-135.
- [14]. Dabrowska, A., & Kolk, R. (2021). Informal Economy and Drug Trafficking in Thailand: Implications for Development. *Asian Economic Policy Review*, 16(1), 87-104.
- [15]. World Bank. (2016). The Impact of Illicit Drug Economies on Governance in Southeast Asia. World Bank Report.
- [16]. Somsak, P., & Patanakul, K. (2017). Family and Economic Impacts of Drug Offenses in Rural Thailand. *Journal of Southeast Asian Studies*, 45(3), 203-219.
- [17]. Made with Flipping Book. (n.d.). Statistical yearbook Thailand 2023. FlippingBook.
<https://www.nso.go.th/public/e-book/Statistical-Yearbook/SYB-2023/6/>
- [18]. Harry, L. (2021, January 31). Rethinking the relationship between women, crime and economic factors: The case-study of women sentenced to death for drug trafficking in Malaysia. MDPI. <https://www.mdpi.com/2075-471X/10/1/9>
- [19]. United Nations Office on Drugs and Crime. United Nations : Office on Drugs and Crime. (n.d.-b). <https://www.unodc.org/unodc/index.html>
- [20]. World Drug Report 2020. United Nations : World Drug Report 2020. (n.d.).
<https://wdr.unodc.org/wdr2020/en/index2020.html>
- [21]. Author(s) Nualnoi Treerat; Noppanun Wannathepsakul; Daniel Ray Lewis. (n.d.). NCJRS Virtual Library. Global Study on Illegal Drugs: The Case of Bangkok, Thailand | Office of Justice Programs. <https://www.ojp.gov/ncjrs/virtual-library/abstracts/global-study-illegal-drugs-case-bangkok-thailand>
- [22]. Vuong, T., Nguyen, N., Le, G., Shanahan, M., Ali, R., & Ritter, A. (2017, January 11). The political and scientific challenges in evaluating compulsory drug treatment centers in Southeast Asia - Harm Reduction Journal. BioMed Central. <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-016-0130-1>
- [23]. Discovering statistics using IBM SPSS statistics. (n.d.).
[http://repo.darmajaya.ac.id/5678/1/Discovering Statistics Using IBM SPSS Statistics \(PDFDrive \).pdf](http://repo.darmajaya.ac.id/5678/1/Discovering%20Statistics%20Using%20IBM%20SPSS%20Statistics%20(PDFDrive).pdf)
- [24]. Ministry of Finance - Thailand. (n.d.). http://www2.mof.go.th/economic_data.htm World Drug Report 2020. United Nations : World Drug Report 2020. (n.d.). <https://wdr.unodc.org/wdr2020/en/index2020.html>