

## Factors Influencing Juvenile Recidivism at Narathiwat Province's Observation and Protection Center

Youreesa Samah, Nurin Dureh\* and Arinda Ma-a-lee

Department of Mathematics and Computer Science, Prince of Songkla University, Pattani campus, Thailand

\* Corresponding author. E-mail address: dnurin@gmail.com

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### Abstract

The purpose of this study was to investigate the factors that contribute to juvenile recidivism at Narathiwat Province's Observation and Protection Centre. The data used are secondary data gathered from the risks and needs assessment from the Juvenile Observation and Protection Centre of Narathiwat province, which was recorded between 2017 and 2021. There are 843 offenses committed by juveniles, and this study compares juvenile recidivism to juvenile non-recidivism. The multiple logistic regression model was applied, and the results showed that the overall proportion of juvenile recidivism is approximately 13.45%. Factors associated with juvenile recidivism include the year of the offence, the month, location, type of litigation, substance abuse history, theft history, and whether the individual has ever run away from home. The model indicates that the juvenile recidivism rate was higher than the overall proportion in 2021, especially during July, August, and September. Additionally, juveniles from rural areas, those who have ever used substances, committed theft, or run away from home are more likely to recidivism. According to the study's findings, to effectively address the issue of juvenile recidivism in Narathiwat Province, organizations and institutions in the community, families and guardians, law enforcement and related legal agencies as well as community members, should collaborate to solve the problem at various levels, focusing on each individual and receiving support from the Observation and Protection Center.

**Keywords:** Juvenile, Recidivism, Logistic Regression.

### Introduction

Juvenile delinquency is a persistent problem in Thailand. These juveniles lack opportunities to develop themselves in career, education, and other life skills, which is the basis for children to have a good quality of life and become quality adults in the future. The situation in Thailand has been steadily decreasing from 2021 to the present, with a reported decline from 26,027 in 2017 to 14,598 in 2021. It is a positive sign that the number of young people committing crimes and the situation of child offenders in the southern border provinces has decreased as well. However, from the statistical data, it was found that the number of youth offenders in Yala Province was higher than in Pattani and Narathiwat province (Cout of Justice, 2024), and the recurrence of offenses among children and juveniles after their release is still a concerning matter. This can be seen from the number and percentage of repeat offenses among children and juveniles after their release in the years 2018–2019. After being released from the Observation and Protection Center, there was an increase in repeat offenses, especially within the first year after release. Specifically, in 2018, the rate was 23.77%, which rose to 25.39% in 2019. (Yodpanya, 2024). This information shows that many young people are involved in crime and enter the criminal justice system at a young age.

This study focuses on Juvenile recidivism. The Act of Juvenile and Family Court and Procedure for Juvenile and Family Cases B.E.2553 (Juvenile and Family Court and Procedure Act, 2010) defines "child" as a person under the age of fifteen and a "young person" is someone who is over the age of fifteen but has not yet reached

the age of eighteen. Both age groups are considered to be “juveniles”. As termed in (Clarke, 2017), “adolescents” are 16 to 18 years old. The Department of Juvenile Observation and Protection defines juvenile recidivism as persons who are discharged from juvenile training centers and are arrested again within 1–3 years. Juvenile recidivism is a reflection of the justice system’s efficiency and efficacy, especially in the domain of rehabilitative therapy (Sumsiripong, 2018). Aside from the legal system, various studies have shown that recidivism is affected by multiple factors, including individual traits and environmental influences. Personal characteristics like immaturity, emotional issues linked to poor impulse control, intelligence, low educational levels, and low family income all contribute to recidivism (Panyawong et al., 2008). Additionally, peers, environment, family history of crime, substance abuse, and truancy play significant roles in juvenile recidivism. Parental bonding, in particular, has been identified as the most crucial factor in reducing recidivism among adolescents aged 17 and 18 (Clarke, 2017). Van der Put et al. (2015) also highlighted the importance of school, family, and relationships as key determinants in both social and environmental contexts. They found that family-related risk factors were most strongly associated with recidivism in early adolescence, while relationship and school-related risk factors were more closely linked to recidivism in late adolescence. Among general offenders, the type of offense was the only factor with a significant impact on recidivism, with those involved in drug addiction being more likely to re-offend than sex offenders (Cally, 2012).

Since recidivism is a problem with many factors involved, the purpose of this research was to identify the factors related to recidivism of juveniles in the Observation and Protection Center in Narathiwat Province. The findings from this study may provide a solution or create effective strategies for dealing with juvenile and adolescent recidivism in various situations. As well, these findings might inform programs and policies aimed at helping young people to break the cycle of criminal activity, become useful members of society and contribute to the development of the country’s economic prosperity and stability.

## **Methods and Materials**

### **Data source**

The data were obtained from the Juvenile Observation and Protection Centre within the Narathiwat Provincial Department of Juvenile Observation and Protection, and it is under the authority of the central Ministry of Justice, as is the case in every province in Thailand. The centre is used for consideration of the Juvenile and Family Court Act and the Juvenile and Family Trial. The study focuses on juvenile offenders from 2017 to 2021 and includes 843 offenses. Some data in the independent variables were incomplete and were therefore excluded during the model construction process. As a result, the total number of cases used to build the model was 825.

### **Study Variables**

The determinant variables in this study comprised four groups of factors: Offender, Family, Environmental, and Offense. The Offender factors consist of demographic variables such as gender, age, educational level, personality, marital status, history of juveniles breaking school rules, grade repetitions, drinking alcohol, substance abuse, using weapons, harming others, theft, skipping class, and running away from home.

Family factors include parental status, parental education level, parental occupation, history of bad influence, family member’s offenses, and family member’s substance abuse. Environmental factors include two variables: accommodation and friend characteristics. Offense factors included the time of the offense, the month of

litigation, the nature of the offense, the location, and the year of the offenses. The outcome variable in this study is recidivism, which is categorised by the frequency of juvenile offenses. Juvenile recidivism, that is juveniles who have at least two offenses, were coded as “1” and “0” for otherwise

### Statistical Analysis

Descriptive analysis was used for exploring the data and the chi-squared test was used to test the association between the outcome variable and the independent variables. Second multiple logistic regression was used to identify the factors related to juvenile recidivism.

Logistic regression models are used to study the effects of predictor variables on categorical outcomes. The model is called a binary logistic model when the outcome is a binary variable, such as the presence or absence of illness (Nick and Campbell, 2007). The model is referred to as a multiple or multivariable logistic regression model when there are several predictors. In logistic regression analysis, the outcome is frequently recorded as 0 or 1, with 1 indicating that the outcome is present and 0 indicating that the outcome is absent. If we define  $P$  as the probability that the outcome is 1, the multiple logistic regression model can take the form.

$$\ln\left(\frac{P}{1-P}\right) = \alpha + \sum_{j=1}^k \beta_j x_j$$

This model denotes the expected probabilities of the adverse outcome,  $\alpha$  is a constant coefficient,  $x_j$  is the determinants set and  $\beta_j$ ,  $j=1,2, 3,...,k$  are referring to the predictor variables' number. The “sum contrasts” will be used to construct a confidence interval instead of conventional treatment contrasts. This method allows us to compare the proportion of recidivism for each level of variables to the overall proportion (Tongkumchum and McNeil, 2009). To evaluate the model, the area under the receiver operating characteristic curve (AUC curve) was measured. A model with an AUC close to 1 indicates a good model, as it means that the model can correctly classify instances across classes. A model with an AUC close to 0.5 suggests no discrimination capability (similar to random guessing), while an AUC less than 0.5 would indicate a worse-than-random model. In this study, data will be explored, managed, and analyzed by using the R program.

### Ethics

The study was approved by the Research Ethics Committee for Science, Technology, and Health Science at Prince of Songkla University, Pattani Campus. No. PSU.PN.1-001/66, August 31, 2021.

### Results

In this study, the first step of the result presents adjusted coefficients, standard errors and  $p$ -value for the level of each determinant and the chi-squared test was utilized to examine the association between all of the determinant variables and the outcome variables and fifteen of the variables were found to be significant in the offender factors including year, gender, educational level, drinking alcohol, substance abuse, using weapons, harming others, thief and ran away from home as shown in Table1.

**Table1** Association test between Recidivism and Offender factor using chi-squared test

Determinant	Recidivism (n (%))		$\chi^2$ (df)	P-value
	No	Yes		
<b>Year</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	16.48(4)	<b>0.002</b>
2017	178 (24.5)	30 (25.9)		
2018	207 (28.5)	25 (21.6)		
2019	130 (17.9)	13 (11.2)		
2020	111 (15.3)	16 (13.8)		
2021	101 (13.9)	32 (27.6)		
<b>Gender</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	<b>2.17(3)</b>	<b>0.052</b>
Male	682 (93.8)	114 (98.3)		
Female	45 (6.2)	2 (1.7)		
<b>Age</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	1.39(1)	0.238
10–15 years old	201 (27.6)	26 (22.4)		
16–18 years old	526 (72.4)	90 (77.6)		
<b>Educational Level</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	4.96(1)	<b>0.026</b>
Elementary school and below	560 (77)	100 (86.2)		
High school and higher	167 (23)	16 (13.8)		
<b>Personality</b>	722 (100.0)	116 (100.0)	Fisher's exact test	0.108
Personality badly	692 (95.8)	115 (99.1)		
Good personality	30 (4.2)	1 (0.9)		
<b>Marital status</b>	<b>704 (100.0)</b>	<b>110 (100.0)</b>	0.58(1)	0.445
Single	660 (93.8)	101 (91.8)		
Married	44 (6.2)	9 (8.2)		
<b>Breaking school rules</b>	<b>725 (100.0)</b>	<b>116 (100.0)</b>	1.36(1)	0.243
Yes	525 (72.4)	90 (77.6)		
No	200 (27.6)	26 (22.4)		
<b>Grade repetitions</b>	<b>724 (100.0)</b>	<b>115 (100.0)</b>	0.09(1)	0.761
Yes	130 (18)	22 (19.1)		
No	594 (82)	93 (80.9)		
<b>Drinking alcohol</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	<b>7.42(1)</b>	<b>0.006</b>
Yes	204 (28.1)	47 (40.5)		
No	523 (71.9)	69 (59.5)		
<b>Substance abuse</b>	<b>727 (100.0)</b>	<b>116 (100.0)</b>	<b>16.49(1)</b>	<b>&lt; 0.001</b>
Yes	531 (73)	105 (90.5)		
No	196 (27)	11 (9.5)		
<b>Using weapons</b>	<b>723 (100.0)</b>	<b>115 (100.0)</b>	<b>10.27(1)</b>	<b>0.001</b>
Yes	94 (13)	28 (24.3)		
No	629 (87)	87 (75.7)		
<b>Harming others</b>	<b>726 (100.0)</b>	<b>115 (100.0)</b>	<b>8.49(1)</b>	<b>0.004</b>
Yes	263 (36.2)	58 (50.4)		
No	463 (63.8)	57 (49.6)		
<b>Thief</b>	<b>726(100.0)</b>	<b>116(100.0)</b>	<b>21.83(1)</b>	<b>&lt; 0.001</b>
Yes	227 (31.3)	62 (53.4)		
No	499 (68.7)	54 (46.6)		
<b>Skip class</b>	<b>727(100.0)</b>	<b>116(100.0)</b>	2.75(1)	0.097
Yes	456 (62.7)	82 (70.7)		
No	271 (37.3)	34 (29.3)		
<b>Ran away from home.</b>	<b>723(100.0)</b>	<b>115(100.0)</b>	<b>9.85(1)</b>	<b>0.002</b>
Yes	150 (20.7)	39 (33.9)		
No	573 (79.3)	76 (66.1)		

\* $p < 0.05$  considered statistically significance

**Table 2** Association test between Recidivism and Family factors using chi-squared test

Determinant	Recidivism (n (%))		$\chi^2$ (df)	P Value
	No	Yes		
<b>Parental status</b>	<b>725(100.0)</b>	<b>116(100.0)</b>	<b>10.97(1)</b>	<b>&lt; 0.001*</b>
Separated	355 (49)	76 (65.5)		
Together	370 (51)	40 (34.5)		
<b>Living</b>	<b>725(100.0)</b>	<b>116(100.0)</b>	<b>29.56(5)</b>	<b>&lt; 0.001*</b>
Alone	10 (1.4)	9 (7.8)		
Father	52 (7.2)	9 (7.8)		
Mother	185 (25.5)	36 (31)		
Parents	357 (49.2)	36 (31)		
Relatives	102 (14.1)	24 (20.7)		
Friends	19 (2.6)	2 (1.7)		
<b>Father's education level</b>	<b>242(100.0)</b>	<b>42(100.0)</b>	<b>0.01(1)</b>	<b>0.938</b>
Primary school / Lower	180 (74.4)	31 (73.8)		
High school and Higher	62 (25.6)	11 (26.2)		
<b>Mother's education level</b>	<b>262(100.0)</b>	<b>50(100.0)</b>	<b>1.73(1)</b>	<b>0.188</b>
Lower/Primary school	180 (68.7)	39 (78)		
High school and Higher	82 (31.3)	11 (22)		
<b>Father's occupation</b>	<b>558(100.0)</b>	<b>75(100.0)</b>	<b>7.8(5)</b>	<b>0.168</b>
Employee	326 (58.4)	41 (54.7)		
Seller, Business	63 (11.3)	14 (18.7)		
Agriculture	51 (9.1)	3 (4.0)		
Government office	25 (4.5)	1 (1.3)		
Unemployed	19 (3.4)	4 (5.3)		
Other	74 (13.3)	12 (16.0)		
<b>Mother's occupation</b>	<b>575(100.0)</b>	<b>84 (100.0)</b>	<b>2.41(5)</b>	<b>0.79</b>
Employee	316 (55)	42 (50.0)		
Seller, Business	100 (17.4)	20 (23.8)		
Agriculture	59 (10.3)	8 (9.5)		
Government office	12 (2.1)	2 (2.4)		
Unemployed	72 (12.5)	9 (10.7)		
Other	16 (2.8)	3 (3.6)		
<b>Family member's substance</b>	<b>710(100.0)</b>	<b>114(100.0)</b>	<b>2.58(1)</b>	<b>0.109</b>
Yes	223 (31.9)	45 (39.5)		
No	477 (68.1)	69 (60.5)		
<b>Bad influence</b>	<b>724(100.0)</b>	<b>116(100.0)</b>	<b>4.02(1)</b>	<b>0.045*</b>
Yes	237 (32.7)	49 (42.2)		
No	487 (67.3)	67 (57.8)		
<b>Family member's offenses</b>	<b>721(100.0)</b>	<b>116(100.0)</b>	<b>0.56(1)</b>	<b>0.452</b>
Yes	272 (37.7)	48 (41.4)		
No	449 (62.3)	68 (58.6)		

\*p < 0.05 considered statistically significance

Table 2 shows that the family factors associated with recidivism include parental status, living with whom, and bad influence from family; all of these are significant and will be assessed for analysis using a logistic regression model.

**Table 3** Association test between Recidivism and Environment factors using chi-squared test

Determinant	Recidivism (n (%))		$\chi^2$ (df)	P value
	No	Yes		
<b>Accommodation</b>	<b>702(100.0)</b>	<b>112(100.0)</b>	<b>0.76(1)</b>	
Poor environment	663 (94.4)	108 (96.4)		0.383
Good environment	39 (5.6)	4 (3.6)		
<b>Characteristics of friends</b>	<b>722(100.0)</b>	<b>116(100.0)</b>	<b>1.01(1)</b>	0.314
Same age/Older	489 (67.7)	84 (72.4)		
Younger than	233 (32.3)	32 (27.6)		

\* $p < 0.05$  considered statistically significance

**Table 4** Association between Recidivism and Offense Factors

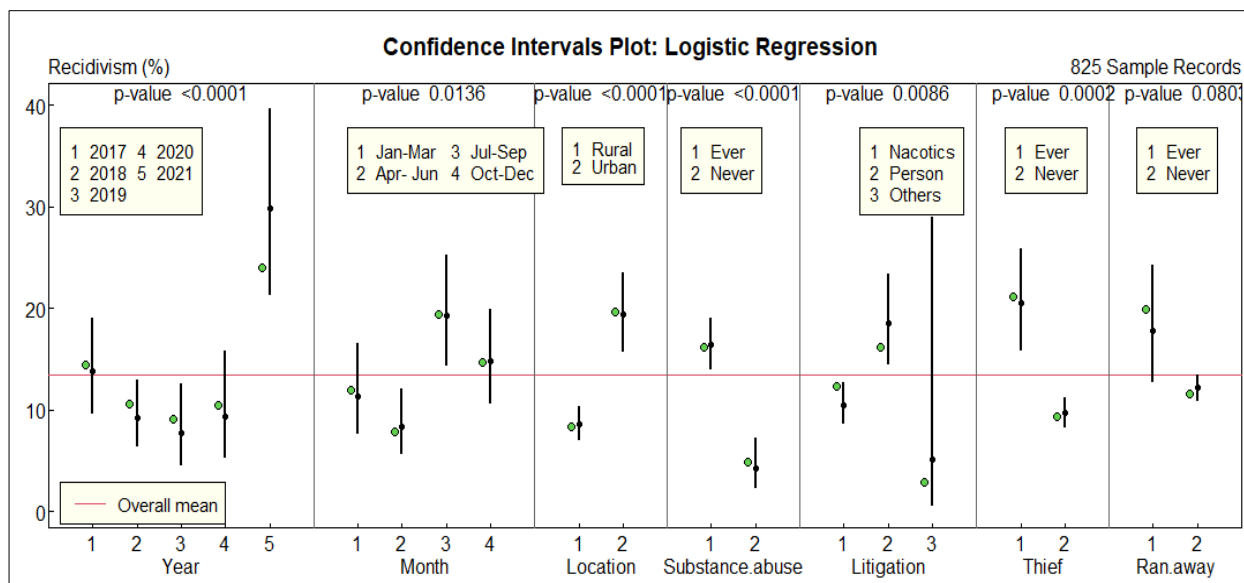
Determinant	Recidivism(n (%))		$\chi^2$ (df)	P value
	No	Yes		
<b>The time of the offence</b>	<b>725(100.0)</b>	<b>115(100.0)</b>	<b>2.17(3)</b>	<b>0.538</b>
0.00–6.00 o'clock	85 (11.7)	17 (14.8)		
6.00–12.00 o'clock	145 (20.0)	27 (23.5)		
12.00–18.00 o'clock	307 (42.3)	46 (40.0)		
18.00–0.00 o'clock	188 (25.9)	25 (21.7)		
<b>Month of litigation</b>	<b>727(100.0)</b>	<b>116(100.0)</b>	<b>12.49(3)</b>	<b>0.006*</b>
January–March	157 (21.6)	21 (18.1)		
April– June	213 (29.3)	20 (17.2)		
July–September	176 (24.2)	43 (37.1)		
October–December	181 (24.9)	32 (27.6)		
<b>Litigation of offence</b>	<b>727(100.0)</b>	<b>116(100.0)</b>	<b>7.06(2)</b>	<b>0.029*</b>
Narcotics Litigation	420 (57.8)	59 (50.9)		
Litigation involving other person	274 (37.7)	56 (48.3)		
Others	33 (4.5)	1 (0.9)		
<b>Location</b>	<b>727(100.0)</b>	<b>114(100.0)</b>	<b>22.04(1)</b>	<b>&lt; 0.001*</b>
Rural area	426 (58.6)	40 (35.1)		
Urban area	301 (41.4)	74 (64.9)		

\* $p < 0.05$  considered statistically significance

Table 3 shows that the variables in the environmental factors have no association with recidivism, However, Table 4 mentions the association of Offense Factors; Month of litigation, Litigation of offense, and location, with recidivism.

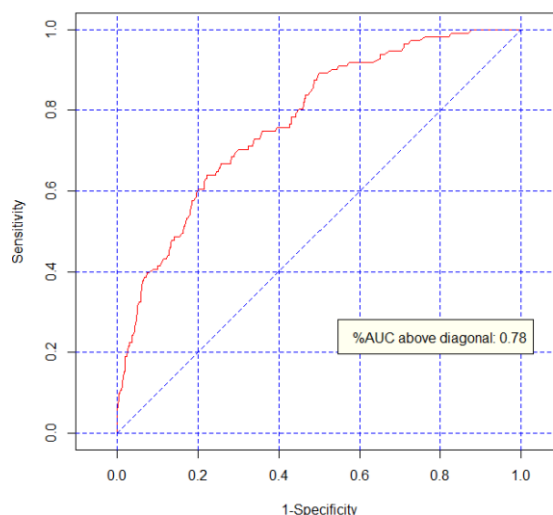
The 95% confidence interval plots show that the overall proportion of juvenile recidivism is approximately 13.45% represented by the red horizontal line. The green dots represent the crude proportion of juvenile recidivism at each level of the independent variable. The black dots represent the adjusted proportions from the model. This can be interpreted that the year 2021 had the highest percentage of recidivism compared to other years and is statistically higher than the overall proportion. Recidivism appeared to be highest between July and

September, and primarily in urban areas. Most juvenile recidivism is caused by substance abuse, litigation involving another person, being a thief, and running away (or quitting) from home, and it is higher than the overall proportion as shown in Fig. 1.



**Figure 1** Confidence intervals plot for logistic regression (final model)

Fig. 2. shows the receiver operating characteristic (ROC) curve for the model of factors associated with recidivism. The model gave an area under the curve (AUC) of 78% indicating that the model has a good ability to distinguish between juvenile recidivism and non-recidivism.



**Figure 2** ROC curve for the logistic regression model

## Discussion

The purpose of this study was to investigate factors associated with juvenile recidivism in the Observation and Protection Centre in Narathiwat Province. There were seven determinants identified associated with the recidivism including the year of offenses, history of substance abuse, ever being a thief, running away from home, the month, location and nature of the litigation of offence.

The offender factor is associated with juvenile recidivism and Van der Put et al (2012) mention the importance of almost all risk factors, both in the social environment domain and the individual domain including school, family, relationships, attitude, skills and aggressiveness but it decreased as juveniles grew older. Juvenile recidivism shows behaviors such as substance abuse, stealing and running away from home. Other risk factors for recidivism were found to be past criminal behavior such as the number of past offenses, young age at first offense, victim of past offenses unknown, disorderly conduct, family risk factors, poor parenting skills, criminal behavior in the family (Mulder et al., 2011). In addition, peer groups are the most common cause of recidivism with association with friends with risky behaviors leading to wrongdoing, such as theft cases from groups with similar behaviors, a habit of becoming bored while studying, attempting to avoid school, and wishing to join the group (Suksai et al., 2017).

In this study, juvenile recidivism was linked to offender litigation. Other studies have found that the type of offence has a significant impact on recidivism, with general and substance-involved offenders more likely to recidivate than sex offenders (Calley, 2012). Recidivism is high in 2021, which might be related to the ongoing COVID-19 outbreak, which reported that crimes such as robbery and drug smuggling decreased during the early stages of COVID-19 but increased after the lockdown in late 2020 to 2021 (Thailand Institute of Justices, 2021).

The results of this study showed that recidivism in urban areas was higher than in rural areas. This is consistent with another researcher, Vannan (2020), who found that the proportion of youths in urban settings is ranked as having a higher risk of recidivism from types of risks than youths in rural settings. Only past antisocial behavior and current substance abuse varied significantly across community types. In addition, the research of Grunwald et al. (2010) found that Neighborhood-level factors were found to influence drug offense recidivism. Mennis and Harris (2011) showed that recidivism among juvenile delinquents, particularly for drug offenders. The likelihood of recidivism is influenced by Spatial contagion, measured as the rate of recidivism for specific crime types among delinquents living near the juvenile's residence, which was found to strongly influence the likelihood of recidivism.

#### **Limitation**

Some significant limitations to this study should be mentioned. First, there was a lack of important data such as family information and a history of family delinquency, as well as incomplete data in some records that were excluded from the study. Secondly, the availability of records at the Observation and Protection Center does not cover all cases that occurred that year because investigators are unable to collect all offenses as some cases are being used in other offices such as courts or training centers.

#### **Conclusion and Suggestions**

In the past five years, the number of juvenile offenders in Thailand has steadily decreased. Data relevant to southern Thailand shows that Narathiwat Province has the lowest number of child offenders compared to Yala and Pattani Provinces. However, the number of recidivist incidents in Narathiwat Province increased in 2021, which is concerning. Several factors related to recidivism among children and youth in Narathiwat Province were identified and included in the analysis. These factors include a history of substance use, theft, and running away from home, which originate from the children and youth themselves. Additionally, cases involving people had a

higher likelihood of repeat offenders than other cases. It was also discovered that recidivism rates were higher from July to September and October to December than in other months. To reduce recidivism and prevent subsequent detention placements, all stakeholders must understand these factors. This understanding can help design effective remedial processes, enabling children and youth who have undergone rehabilitation training at the Observation and Protection Center to reintegrate into society without re-offending. This way, they can have a new start and a promising future in their communities. Future research could explore the effectiveness of rehabilitation programs, the impact of socioeconomic and psychological factors, and the role of community support in reducing juvenile recidivism in southern Thailand.

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#### **Author Contributions**

In this section authors have to identify the contribution by each author to the manuscript in the following types of contributions; Conceptualization, Development or design of methodology, Providing of materials subjects or patients, Investigation, Collection of data, Data analysis and interpretation, Manuscript writing, Manuscript review and editing, and others (specify the contributions)

Author 1: contribution in conceptualization, data collection and data management, data analysis and writing of the manuscript.

Author 2: contribution in conceptualization, design of methodology, data analysis and interpretation, manuscript writing, review and editing.

Author 3: contribution to conceptualization and providing the contact for the data source. Manuscript review and editing.

#### **Conflict of Interests**

No conflict of interest.

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