WHAT EXPLAINS VARIATION IN PROPERTY CRIME RATES ACROSS THAILAND'S PROVINCES?

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Abstract

Studies conducted in the past have suggested that economic and social conditions are factors that may or may not contribute to crimes. Crime rates across Thai provinces which are reported by the authorities indicate that a large proportion of crime is property crime. Hence, this study aimed to investigate the interaction effect between social and economic conditions on property crime rates in Thailand. This quantitative research utilized existing statistics and assigned each province to be a unit of analysis. The data analysis was performed by the PLS-SEM technique using SmartPLS 2.0. The results of the study show that economic conditions have a major impact on crime rates with a path coefficient value of .491, a T-statistic value of 3.904, and a level of significance of p < .01. The result of the study rejects the hypothesis that the interaction effect between social and economic conditions has a significant impact on property crime rates. The outcome of this research will be beneficial to government agencies responsible for supporting and promoting employment and appropriate income per capita. Furthermore, it will benefit public and private agencies as well as communities in crime prevention which requires extra vigilance in poor economic conditions.

Introduction

Crime can take place anywhere in the world, in both developed and developing countries. In Thailand, crime is a social phenomenon that is connected to other issues in society. The Office of the National Economic and Social Development Board of Thailand (2015) has estimated that the phenomenon of population aging in Thailand will lead to an increase in the dependency ratio of the working-age population and the aging population. In 2010, there were approximately five working-age people for every dependent person. However, it is estimated that by 2040, there will only be 1.7 working-age people for every dependent person. The decline in the labor force in Thailand is creating a higher demand for low-skilled migrant workers from neighboring countries, which affects the Thai labor market by retarding the rate of increase in the level of income, workforce improvement, and skill enhancement. Moreover, this is an ongoing problem that has negatively affected the quality of life of Thai people, and has led to other issues such as corruption, lack of access to healthcare and education among the poor, conflicts over resources, limited access to news and information, crime, and the widespread use of illegal drugs.

According to Mahakita (2015), the type of crime most prevalent in Thai society is property crime, followed by violent personal crime, and identity crime. However, the data from the Royal Thai Police shown in Table 1 demonstrates that property crime is in fact only the second most prevalent type of crime behind crime against the state. The ratio of the crime rate to the total population is presented in Table 2. The data shown in both Table 1 and Table 2 represent the number of crimes based on crime reports but not the number of arrests. Previous studies have shown that economic conditions are a factor that contributes to crime (Rosenfeld and Fornango, 2007; Becker, 1968) and both economic and social factors have been implicated in crime, especially property crime (Engelena et al., 2016; Khan et al., 2015; Nivette, 2011; Pridemore, 2011). In a survey conducted by Suan Dusit Poll (2016) 81.12 percent of the Thai population agreed that the causes of crime in Thailand included economic hardship, drugs and other vices, with weak

enforcement of the law, and lastly, social circumstances being other factors mentioned. However, the majority of academic research regarding crime in Thailand has been conducted through surveys in small geographic areas in which the researchers have an interest. Hence, this study represents the first academic research which aimed to identify the factors that affect property-crime rates through the analysis of official data on crime covering every province in Thailand.

The criminal justice system in Thailand adheres to the Criminal Procedure Code which has been utilized as the means of ensuring justice for people when crimes have been committed. The fundamental principle of the Thai criminal justice system is maintaining order and peace, as well as morality and the protection of the rights of the individual. The investigation of crimes is conducted by the police, an agency that directly interacts with the people, and this is thus the first important step in the criminal justice system (Kruesang and Huan-arom, 2016). Therefore, this research analyzed the most accurate and credibly source of data relating to crime being gathered by the Royal Thai Police from the year 2014, which was the first year that the National Council for Peace and Order (NCPO) governed Thailand.

The objective of this research was to explain the variation in property crime rates across Thailand's provinces as a result of the interaction effect between economic and social conditions, in order to check the findings of studies conducted in the past. The result of this research will be beneficial for the government in terms of policy formulation and building an environment conducive to the prevention and control of crime in order to achieve the ultimate goal, which is good quality of life for all.

Table 1: The Number of Criminal Cases Reported by the Royal Thai Police by Category: 2006-2014

Type of Criminal Case	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Violent Crime	8,738	7,997	6,637	5,927	5,530	4,557	4,760	4,744	4,148	53,038
Physical Assaults and Homicide	43,531	39,461	33,483	32,671	29,253	23,993	25,040	23,944	23,613	274,989
Property Crime	76,879	73,068	67,188	59,497	56,798	47,285	49,895	50,245	46,264	527,119
Other Criminal Cases	44,037	44,158	43,054	43,266	39,947	29,346	31,656	30,433	29,022	334,919
Crimes Against the State	256,595	284,134	337,201	369,804	385,032	406,585	464,364	558,242	509,599	3,571,556

Source: *National Statistical Office, Ministry of Information and Communication Technology (2015)*

Table 2: Population and Crime Rates in Thailand: 2006-2014

Year	Population *	No. of Crimes Reported**	Crimes Growth Rate***
2014	65,124,716	612,646	- 89.76
2013	64,785,909	667,608	137.30
2012	64,456,695	575,715	94.50
2011	64,076,033	511,766	- 9.98
2010	63,878,267	516,560	4.00
2009	63,525,062	511,165	35.52
2008	63,389,730	487,563	57.17
2007	63,038,247	448,818	27.93
2006	62,828,695	429,780	-

Source: * *Department of Provincial Administration, Ministry of Interior*
(2015)

** *National Statistical Office, Ministry of Information and*
Communication Technology (2015)

*** *Self-calculation*

Conceptual and Theoretical Framework

The Geography of Crime

The objective of studying crime in each geographical area is to acquire knowledge in order to provide answers to the following questions: Which areas are crime hotspots and in which areas do criminals and victims coexist? In which areas are people at risk of having their rights and freedom violated? And, how feasible is crime prevention through environmental design? (Carrabine et al., 2009). In order to answer these questions, areas of interest are analyzed at both micro- and macro-levels, namely, nation, region, province, district, sub-district, village, neighborhood, road, and alley (Weisburd et al., 2009). The focus of crime study in each area is to identify which areas have a history of crime rather than to discover the identity of the criminals and their reasons for committing crimes. Furthermore, crime study

emphasizes the reduction of crime rates through environmental design, a process which requires cooperation from many stakeholders such as planners, developers, and politicians.

Social Structure Theory and Crime Rates

Crime has been noted to be significantly influenced by economic and social conditions that have an impact on individuals, from the young to the elderly (Siegel, 2012). Social structure theory states that if economic and social conditions did not influence individuals' actions, then crime rates in each area and each social structure would be the same, whereas in reality, that is neither true nor possible. The theory posits that areas with social disorganization will be subject to higher crime rates because of the following factors:

1. Economic Conditions and Crime Rates

Criminologists believe that economic conditions can influence crime rates in four ways. First, poor economic conditions cause crime rates to rise due to a drastic increase in unemployment. Secondly, good economic conditions can lead to an increase in crime rates because those who are unemployed can be led to hold unconventional social activities that cause them to commit offences and break the law. Thirdly and conversely, poor economic conditions can decrease crime rates because unemployed parents are able to spend more time at home or may become self-employed, which allows them to spend more time with their children and thereby prevent them from committing crimes. Furthermore, in times of poor economic conditions, people tend to spend less on luxury goods such as jewelry, thus, reducing the risk of crime being committed. Lastly, there is no correlation between economic conditions and crime rates. Although an economy is not prospering, the real cost of goods is increasing and unemployment rates are rising, such conditions do not necessarily lead to a rise in the number of crimes. For each geographical area, there are various economic indicators that have to be taken into consideration including unemployment, particularly unemployment of men aged 15-29, the poverty level, the level of income inequality, the gross domestic product, the proportion of high school graduates to higher education graduates, the consumer price index, the average per capita income and

inflation, (Hooghe et al., 2011; Yearwood and Koinis, 2011; Buonanno and Montolio, 2008).

2. Social Conditions and Crime Rates

Criminologists believe that highly politicized societies with low collective efficacy will result in an increase in crime rates. Such an environment has a diverse population, thus, lacks unity, a sense of community and informal social control, making it easier for perpetrators to commit criminal offences. Social indicators for each area include population density, the ratio of foreigners to locals, the proportion of young people, the percentage of the population living in urban areas, the proportion of men aged 15-29 and the ratio of males to females (Hooghe et al., 2011; Buonanno and Montolio, 2008; Antonaccio and Tittle, 2007). However, the final model studied by authors found that only two indicators had a significant effect on crime rates, namely urbanization and population density.

This literature review therefore leads to the development of the following hypotheses: The Economic conditions in Thailand have an impact on property crime rates in Thailand.

1. The Social conditions in Thailand have an impact on property crime rates in Thailand.

2. The interaction between economic and social conditions has an impact on property crime rates in Thailand.

Research Methodology

This study used a quantitative methodology utilizing statistics from each province for the year 2014. The data from the provinces were used as the unit of analysis. Thailand has a total of 77 provinces with a population of 65,124,716 (Department of Provincial Administration, Ministry of Interior, 2015). The data utilized was obtained from the National Statistical Office, the Office of the National Economic and Social Development Board, and the Royal Thai Police. The researcher defined the indicators taking into consideration the method of obtaining the data, their completeness, and how up-to-date they were. Crimes were classified as property crimes if they were of

the following reported categories: theft, snatching, extortion, robbery, gang-robbery, and vandalism. The economic data considered consisted of the number of people unemployed and the average monthly expenditure per household and the social data consisted of the degree of urbanization and the population density. The researcher converted the data on reported arrests by province and crime rates by category in order to control the interaction effect due to the size of the population, using the following formula (Frank, 2011).

Crime rate = (the number of reported arrests/population)×100,000

Data analysis was conducted through the partial least squares (PLS) path modeling for causal analysis technique, using the computer program, SmartPLS 2.0 (Ringle et al., 2005). The advantage of this causal analysis technique is that it focuses on exploring the model rather than confirming it. Hence, a strong emphasis on theory or prior literature is not required and it is not necessary for the data to be normally distributed. In addition, the data can be analyzed when the minimum sample size is 10 multiplied by the maximum number of indicators of a latent variable (Hair et al., 2014). For this research, the latent variable of crime rate had six indicators; therefore, the sample size should be at least 60. This study had a sample of 77 and therefore met this criterion.

Research Findings

General Information

Table 3 shows an overview of the indicators and property crime rates in Thailand. The average number of people unemployed was 4,191 people, the average monthly expenditure per household was 18,664.818 Baht, the degree of urbanization was 27.858 percent, the population density was 237 people per square kilometer, the average theft rate was 27.029 cases per 100,000 people, the average snatching rate was 1.786 cases per 100,000 people, the average extortion rate was 0.175 cases per 100,000 people, the average robbery rate was .909 cases per 100,000 people, the average gang-robbery rate was 0.359 cases per 100,000 people, and the average vandalism rate was 4.323 cases per 100,000 people.

**Table 3:** Overview of Indicators and Property Crime Rates in Thailand

Indicators	Mean
Unemployment (person)	4,191
Average monthly expenditure per household (Thai Baht)	18,664.818
Urbanization (percentage)	27.858
Population Density (people/ square kilometer)	237
Theft (number of cases/ 100,000 people)	27.029
Snatching (number of cases/ 100,000 people)	1.786
Extortion (number of cases/ 100,000 people)	.157
Robbery (number of cases/ 100,000 people)	.909
Gang-Robbery (number of cases/ 100,000 people)	.359
Vandalism (number of cases/ 100,000 people)	4.323

Results of Hypothesis-Testing

Figure 1 demonstrates a structural equation model of economic and social conditions that have an impact on property crime rates without analyzing the interaction effect, showing that economic conditions have an impact on crime rates with a path coefficient value of .491, a T-statistic value of 3.904, and a significance level of $p < .01$. On the contrary, social conditions do not have an impact on crime rates which have a path coefficient value of .226, a T-statistic value of 1.442, which is not significant ($p > .01$). The model has a predictive coefficient value (R^2) of .460
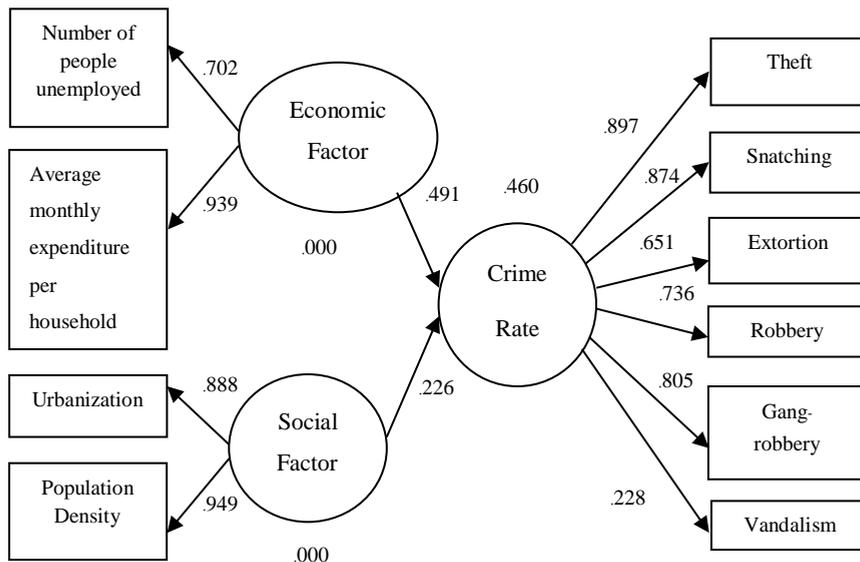
Figure 1: A Structural Equation Model without Analyzing the Interaction Effect
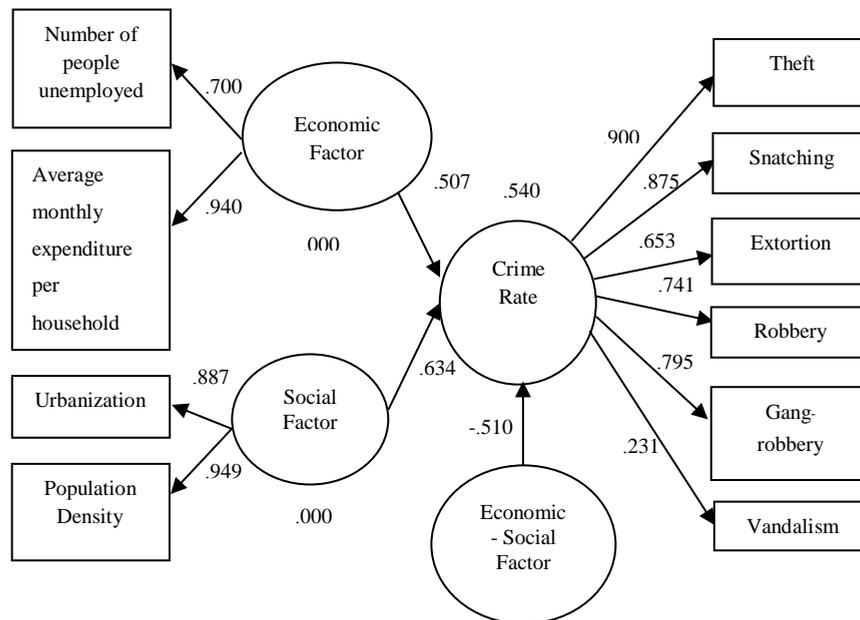
Figure 2: A Structural Equation Model Analyzing the Interaction Effect

Figure 2 presents a structural equation model of economic and social conditions that have an impact on property crime rates analyzing the interaction effect. The result reveals that the interaction between economic and social conditions does not have an impact on property crime rates with a path coefficient value of -.510 and a T-statistic value of 1.595, which is not significant (p > .01). The model has a predictive coefficient value (R_{int}^2) of .540. The effect size of the interaction was calculated using the following formula, $f^2 = (R_{int}^2 - R^2)/(1 - R_{int}^2)$, the result being .174, which is in the medium range (Vinzi et al., 2010).

1. Model for Measuring the Quality of the Latent Variables

1.1 Internal Reliability

A measurement model is acceptable when the composite reliability and Cronbach's alpha coefficient of each latent variable have values of exceeding .7 (Hair et al., 2014). It was found that the value of the composite reliability of the latent variable was between .811 and .984 and the value of Cronbach's alpha coefficient was between .802 and .980, which are all higher than the criterion, indicating that each indicator can substitute for the latent variables in its category.

1.2 Indicator Reliability

A measurement model is acceptable when the loading value is more than .708, the indicator reliability value was above .5 and the statistical significance was at least .05. It was found that almost all of the these values exceeded their respective criteria except for the number of people unemployed and vandalism, for which loading value of the former was .7 with that of the latter being .231, while the reliability indicator value for the former was .49 and for the latter, .053. However, the statistical significance of the former was at the .01 level and at the .05 level for the latter. Therefore, it can be concluded that the reliability of the indicators utilized in this study were at an acceptable level.

1.3 Convergent Validity

A measurement model has satisfactory convergent validity when the average variance extracted has a value of at least .5. It was found that the value of the average variance extracted was between 0.539 and 0.941, which is

higher than the criterion. Thus, the measurement model had satisfactory convergent validity.

1.4 Discriminant Validity

A measurement model has satisfactory discriminant validity when the square root of the average variance extracted has a value higher than the value of the correlation between the variables. It was found that the square root of the average variance extracted from every latent variable with diagonal elements had a value higher than the value of the correlation between the variables in both the columns and rows. Therefore, the measurement model had satisfactory discriminant validity.

Table 4: Analysis of Discriminant Validity

Latent	Economic Factors	Social Factors	Economic-social Factors	Property Crime Rates
Economic factors	**0.828**			
Social factors	0.760	**0.918**		
Economic-social factors	0.643	0.826	**0.970**	
Property crime rates	0.660	0.597	0.339	**0.734**

Conclusion and Discussion

In conclusion, economic conditions have an impact on property crime rates while neither social conditions, nor the interaction between economic and social conditions have such an impact. Therefore, while research hypothesis 1 is supported, hypotheses 2 and 3 are both rejected. This result is consistent with social structure theory and its applicability to crime rates, which posits that economic conditions have an impact on crime rates (Siegel, 2012) and furthermore, that poor economic conditions cause crime rates to rise due to an increase in the number of people unemployed, which serves as a catalyst for people to commit crimes for financial purposes. The result is also consistent with the study conducted by Antonaccio and Tittle (2007) which concluded that capitalism constitutes a major force behind the rise in crime rates in society. According to Yearwood and Koinis (2011), economic recessions cause crime to increase, especially, property crime. Additionally,

Punyasavatsut (2013) found that economic factors have an impact on crime rates since when an economy grows, crimes such as murder, robbery, and gang-robbery, will decrease, while crime related to gambling, drugs, and prostitution, will increase. Moreover, the previous study of Hooghe et al. (2011), analyzed the relationship between social conditions and crime and discovered that social structures, especially population density, did not bear any correlation to crime rates in any of the geographical areas studied. Nevertheless, the findings of this research contradict the study conducted by Buonanno and Montolio (2008) which found that high levels of urbanization lead to high crime rates and Boivin (2013) also found that population density has an impact on crime rates, especially in the category of property crime.

The researcher therefore concludes that Thai government agencies related to the economy including the Office of the National Economics and Social Development Board, the Ministry of Finance, the Ministry of Commerce, the Ministry of Industry, and the Ministry of Agriculture and Cooperatives should set appropriate long-term economic policies and closely and continuously monitor their progress in order the ensure that the unemployment rate is maintained at the lowest possible level and that people have an income which is appropriate in relation to the overall economic conditions of the country. Moreover, the outcome of this study is of interest to public and private agencies, as well as those in communities involved in crime prevention, especially in times of poor economic conditions. The study's recommendations are summarized as follows:

1. The public agency most concerned with the criminal justice system is the police force, which is responsible for peacekeeping, criminal investigation and arresting offenders. The role of the police must include continual and strict community patrolling for effective crime prevention, the installation of devices monitoring the behavior of suspects, and the organization of activities which promulgate knowledge about crime prevention to the people.

2. Private agencies and business owners should organize people in each area who are responsible for monitoring and preventing crime, which will minimize the risk of crime affecting businesses, stores, companies, factories

etc. When a crime is committed in the area, the police must be informed directly and immediately.

3. The community can participate in crime prevention activities through various formal and informal forms such as crime prevention groups, neighborhood groups, religious congregations, youth organizations, and groups of women, elderly people and housewives. The community can organize campaigns to promote desirable activities to ensure the safety of households by, for instance, turning on lights in front of houses or installing theft alarm systems, as well as organizing a neighborhood-watch system in order to have patrols in shifts during the night to help crime prevention.

4. Police and community crime prevention patrols should particularly be organized in low-income areas which are at high risk of crime.

5. The government should formulate long-term policies concerning the improvement of economic conditions and to prevent periodic economic crises.

The main limitation of this research was the limited number of variables which were selected to reflect the elements of economic conditions which were the number of people unemployed and the average monthly expenditure per household, while the variables reflecting elements of social conditions were limited to the level of urbanization and the population density. In reality, there are other related variables which may also affect crime rates falling under the headings of economic and social factors. Therefore, it is recommended that future research should take into consideration additional variables to reflect economic and social conditions including personal traits, education, social class and group sub-culture factors, which have been explored in previous research. Finally, the data analysis should include all types of criminal acts not simply property crime.

References

Antonaccio, O. and Tittle, C. (2007) A cross-national test of Bonger's theory of criminology and economic conditions. *Criminology* 45(4): 925-957.

Becker, G. S. (1968) Crime and punishment: An economic approach. *Journal of Political Economy* 76: 169-217.

Boivin, R. (2013) On the use of crime rates. *Canadian Journal of Criminology and Criminal Justice* 55(2): 263-277.

Buonanno, P. and Montolio, D. (2008) Identifying the socio-economic and demographic determinants of crime across Spanish provinces. *International Review of Law and Economics* 28(1): 89-97.

Carrabine, E., Cox, P., Lee, M. and South, N. (2009) *Criminology: A sociological introduction* (2nd ed.). New York: NY. Routledge.

Department of Provincial Administration, Ministry of Interior. (2015) *Population from registration record 2006 - 2015.* [Online URL: http://service.nso.go.th/nso/web/statseries/statseries01.html] accessed on June 15, 2016.

Engelena, P., Lander, M. W. and van Essenc, M. (2016) What determines crime rates? An empirical test of integrated economic and sociological theories of criminal behavior. *The Social Science Journal* 53(2): 247-262.

Frank, H. E. (2011) *Introduction to criminology: Theories, methods, and criminal behavior* (7th ed.). California: CA. SAGE.

Hair, J. F., Hult, G. T. M., Ringle, C. M. and Sarstedt, M. (2014) *A Primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage.

Hooghe, M., Vanhoutte, B., Hardyns, W. and Bircan, T. (2011) Unemployment, inequality, poverty and crime: Spatial distribution patterns of criminal acts in Belgium, 2001-06. *The British Journal of Criminology* 51(1): 1-20.

Khan, N., Ahmed, J., Nawaz, M. and Zaman, K. (2015) The socio-economic determinants of crime in Pakistan: new evidence on an old debate. *Arab Economics and Business Journal* 10: 73-81.

Kruesang, P. and Huan-arom, R. (2016) Development of Thailand Criminal Investigation. *Local Administration Journal* 9(1): 133-143.

Mahakita, C. (2015) Criminal statistic analysis and report in Thai society. *Suan Dusit Graduate School Academic Journal* 11(2): 231-241.

Meenakanit, T. (2012) *The criminal code for reference* (29th ed.). Bangkok: Winyuchon.

National Statistical Office, Ministry of Information and Communication Technology. (2015) *The criminal case in Thailand.* [Online URL: http://service.nso.go.th/nso/web/statseries/statseries13.html]   accessed on June 16, 2016.

Nivette, A. E. (2011) Cross-national predictors of crime: A meta-analysis. *Homicide Studies* 15(2): 103–131.

Office of the National Economic and Social Development Board, Thailand. (2015) *The direction of the National Economic and Social Development Plan No.12 (B.E.2560-2564)*. [Online URL: http://www. nesdb.go.th/article_attach/Book_Plan12.pdf] accessed on June 16, 2016.

Pridemore, W. A. (2011) Poverty matters: A reassessment of the inequality homicide relationship in cross-national studies. *British Journal of Criminology* 51: 739-772.

Punyasavatsut, A. (2013) *Socio-economic Determinants of Crime*. Proceedings of 51st Kasetsart University Annual Conference: Education, Economics and Business Administratio Humanities and Social Sciences (pp.337-345). [Online URL: http://kucon.lib.ku. ac.th/cgibin/KUCON.exe?rec_id=013396&database=KUCON&sear ch_type=link&table=mona&back_path=/KUCON/mona&lang=tha i&format_name=TFMON#] accessed on June 20, 2015.

Ringle, C. M., Wende, S. and Will, S. (2005) SmartPLS 2.0 (M3) beta. [Online URL: http://www.smartpls.de] accessed on July 19,2015.

Rosenfeld, R. and Fornango, R. (2007) The impact of economic conditions on robbery and property crime: The role of consumer sentiment. *Criminology* 45(4): 735-769.

Royal Thai Police, Central Information Technology Center. (2015) *Statistics of five criminal groups*. [Online URL: http://pitc.police.go.th/dirlist/ dirlist.php?dir=/crimes] accessed on July 20, 2016.

Siegel, L. J. (2012) *Criminology* (11th ed.). Belmont: Wadsworth.

Suan Dusit Poll. (2016) *The crime in Thailand.* [Online URL: http://suandu sitpoll.dusit.ac.th/UPLOAD_FILES/POLL/2559/PS-2559-1462670 029.pdf] accessed on July 30, 2016.

Vinzi, V. E., Chin, W. W., Henseler, J. and Wang, H. (eds.). (2010) *Handbook of partial least squares: Concepts, methods and applications.* Heidelberg: Springer.

Weisburd, D., Bernasco, W. and Bruinsma, G. (2009) *Putting crime in its place: Unit of analysis in geographic criminology.* New York: Springer Science+Business Media, LLC.

Yearwood, D. and Koinis, G. (2011) Revisiting property crime and economic conditions: An exploratory study to identify predictive indicators beyond unemployment rates. *The Social Science Journal* 48(1): 145-158.