

Facilitators and Inhibitors of Fear of Crime Among Thai People

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Abstract

Fear of crime is one of the most popular topics to which criminal justice scholars, police officers, and government workers have long paid attention. This study focuses on factors affecting fear of crime that have not often been examined in previous research, namely, police performance in crime suppression and crime prevention, and adds interaction terms in the same fear-of-crime model.

Data from a country-wide survey on fear of crime in Thailand in 2010 were analyzed at two levels: individual and aggregate. At the individual level, the data were derived from 6,080 questionnaires, while aggregate level data were based on a sample of 76. A Hierarchical Linear Model (HLM) was used to identify and statistically analyze the factors related to the fear of crime among Thai people.

The findings reveal that not only do facilitators of fear of crime show significant relationships with fear, but inhibitors of fear of crime and the interaction terms are also significantly related to fear. Implications derived from the findings as well as further research are also suggested.

Keywords: Facilitators and inhibitors of fear of crime, Thailand, hierarchical linear model (HLM), crime prevention, crime suppression

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ปัจจัยสนับสนุนและปัจจัยยับยั้งความหวาดกลัวอาชญากรรมของ คนไทย

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บทคัดย่อ

ความหวาดกลัวอาชญากรรมเป็นหนึ่งในหัวข้อที่มีการศึกษากันอย่างกว้างขวางมาเป็นเวลานานในหมู่นักวิชาการที่ศึกษากระบวนการยุติธรรมทางอาญา เจ้าหน้าที่ตำรวจ และผู้ปฏิบัติงานในภาครัฐ การศึกษาวิจัยชิ้นนี้ได้ศึกษาปัจจัยที่งานวิจัยอื่นที่ผ่านมาในหัวข้อนี้ไม่ค่อยให้ความสำคัญเท่าที่ควร อันได้แก่ การปฏิบัติงานด้านป้องกันและปราบปรามอาชญากรรมของเจ้าหน้าที่ตำรวจซึ่งมีผลต่อความหวาดกลัวอาชญากรรม โดยเฉพาะอย่างยิ่ง งานวิจัยชิ้นนี้ได้เพิ่มตัวแปรโต้ตอบเข้าไปในตัวแบบสำหรับวิเคราะห์ความหวาดกลัวอาชญากรรม ข้อมูลในการศึกษาวิจัยครั้งนี้ได้มาจากการสำรวจความหวาดกลัวอาชญากรรมจากประชาชนทั่วประเทศของไทยในปี พ.ศ.2554 การวิเคราะห์ข้อมูลทำใน 2 ระดับ คือระดับบุคคล และระดับข้อมูลรวม ในระดับบุคคลนั้น ข้อมูลถูกรวบรวมจากแบบสอบถามจำนวน 6,080 ตัวอย่าง ส่วนในระดับข้อมูลรวมมีจำนวน 76 หน่วย สถิติที่ใช้ในการวิเคราะห์เป็นเทคนิคการวิเคราะห์แบบพหุระดับที่เรียกว่าตัวแบบเส้นตรงแบบระดับชั้น (hierarchical linear model หรือ HLM) เพื่อระบุและวิเคราะห์ปัจจัยที่มีความสัมพันธ์กับความหวาดกลัวอาชญากรรมในหมู่ประชาชนชาวไทย ผลการศึกษาพบว่า ไม่เพียงแต่ปัจจัยที่สนับสนุนความหวาดกลัวอาชญากรรมเท่านั้นที่มีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติกับตัวแปรตาม แต่ปัจจัยยับยั้งและปัจจัยโต้ตอบแสดงความสัมพันธ์อย่างมีนัยสำคัญทางสถิติเช่นเดียวกัน งานวิจัยชิ้นนี้ได้นำเสนอข้อเสนอแนะจากการศึกษาและข้อเสนอแนะสำหรับการวิจัยครั้งต่อไป

คำสำคัญ: ปัจจัยสนับสนุนและยับยั้งความหวาดกลัวอาชญากรรม ประเทศไทย เทคนิคการวิเคราะห์แบบพหุระดับ การป้องกันอาชญากรรม การปราบปรามอาชญากรรม

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Introduction

Crime scholars and practitioners in the western hemisphere have long established that fear of crime is a multi-faceted and hard-to-solve aspect of social problems that could have a deep impact on people's quality of life and well-being (Box et al., 1988; Conklin 1975; Hale, 1996; Skogan, 1986). To be specific, in the academic world fear of crime has been one of the most widely studied topics in psychology and criminology for many decades. This study aims to build on past international research and add to the body of literature in three dimensions.

First of all, most studies on fear of crime have focused more heavily on what contributes to fear of crime, such as vulnerability or disorder/ incivilities issues (See Hale, 1996 for a comprehensive review; Franklin et al., 2008; Liu et al., 2009; McGarrell et al., 1997; Russo et al., 2011) than what could actually inhibit such fear. This study is particularly inspired by the idea suggested by McGarrell et al. (Franklin et al., 2008; McGarrell et al., 1997) that factors related to fear of crime could be categorized as "facilitators and inhibitors of fear." The study's first objective therefore is to investigate fear of crime in Thailand's context by using firmly established theoretical models from international literature to build a model that could better explain "what is causing people to be fearful of crime" as well as "what could be done to inhibit that fear."

Second, this study argues that using an individual-level data set may not be powerful enough to uncover the intricate relationships between the aggregate-level independent variables that characterize the ecology in which people live (e.g. provincial crime rates, clearance rates and poverty level, etc.) and fear of crime. Therefore, guided by recent research (Liu et al., 2009; Russo et al., 2011), this study also seeks to use a data analytical technique that is slightly different than most of the previous studies on the topic, choosing to use a multi-level analysis, Hierarchical Linear Model or HLM technique for its technical merits to deal with the data analytical problem at both individual and aggregate levels. Moreover, this study utilizes interaction effects, yielding quite interesting results. Initially, several individual factors alone show no relationship with fear of

crime but when its effect is combined with that of another factor, the interaction factor then reveals a significant relationship with fear of crime. This empirical finding suggests that the individual-level variables alone cannot reveal the subtle relationships with the fear. Rather, the contextual variables must be included in the equation to fulfill the goal.

Last but not least, the study of fear of crime in Thailand has so far been investigated by a few scholars, such as poll researchers limiting their scope mostly to the Bangkok metropolitan areas, and other academic researchers commissioned by the Royal Thai Police for specific purposes, to survey the citizens' satisfaction with police performance, for instance. These prior research studies consequently have focused on surveying/measuring the level of fear of crime among the target subjects (i.e., the Thai citizens) at a descriptive level and do not intend to find a causal relationship between fear of crime and other related factors/ variables. This study is more ambitious, providing theoretical underpinnings to the body of local crime literature as well as expanding the scope of existing literature to cover all provinces in the country. In the final process, the study also aims to utilize the results of this academic investigation to suggest policy implications regarding fear of crime in Thailand.

Research Background

Decades of literature on fear of crime reveal that there is no universally-agreed-upon definition of the concept. On the one hand fear of crime in its simplest form could be described as the feeling of property or personal insecurity in a community. On the other hand, the most cited meaning of this concept could be summed up as "an emotional response of dread or anxiety to crime or symbols that a person associates with crime" (Ferraro, 1995: 4). Scholars have also viewed fear of crime as a concept with many dimensions, most of which include cognitive and affective attributes usually used to capture one's worry (affective) about becoming victimized and one's judgment (cognitive) toward the safety of his or her environment (Hale, 1996). The different definitions of fear of

crime can also be found in other studies (e.g., Cordner, 1986; Garofalo, 1981). One construct related to fear of crime is perceived risk. Even though these two variables were often considered interchangeable, some studies argue that perceived risk actually leads to fear of crime (Addington, 2009). More specifically, Ferraro (1995) contends that risk perception can lead to two types of reaction: affectual and behavioral. The affectual reaction can become fear of crime while the latter reaction manifests as a variety of behavioral responses. Consequently, people who perceive high risk of crime would find some of measure to prevent crime from happening, e.g., adding a lock, carrying a weapon for self protection, keeping a watchdog, etc., or show some forms of “constrained behavior.” The distinction between crime risk perception and fear of crime can also be found in later studies (i.e., Ferguson & Mindel, 2007; Lee & Ulmer, 2000; National Crime Council, 2009; Wilcox et al., 2003; Wyant, 2008).

Despite the lack of consensus on the definition, crime researchers seem to move in the same direction regarding the dominant theses on fear of crime, based on the concepts of victimization/vulnerability, disorder/incivilities, and social integration/social control/responsiveness of governmental institutions (Franklin et al., 2008; Hale, 1996; McGarrell et al., 1997; Russo et al., 2011). Specifically following McGarrell et al.’s idea, these established models can be re-evaluated and re-grouped into two categories, namely facilitators and inhibitors of fear (McGarrell et al., 1997). The facilitator- and-inhibitors of fear approach is also found in some later studies (e.g., Schafer et al., 2006).

Facilitators of Fear

To date, studies on facilitators of fear are abundant. The explanations regarding the concept of facilitators of fear in the literature can be categorized into two groups: socio-demographic characteristics and a social environment in which an individual lives. The first group of literature or the so-called victimization/vulnerability model (Clemente & Kleiman, 1997; Donder et al., 2005; McConnell, 1997; Taylor & Hale, 1986) links vulnerability characteristics of a person with the

higher level of fear of crime. In essence, people who are physically or socially more vulnerable, particularly the elderly, female, less educated, and/or economically disadvantaged, tend to report higher level of fear of crime/perceive higher risk of crime (Clemente & Kleiman, 1997; Donder et al, 2005; Ferraro & LaGrange, 1992; Fisher & Sloan, 2003; Kennedy & Silverman, 1985; Killias & Clerici, 2000). For conflicting findings, however, some studies do report a reverse direction of certain relationships. For example, some research studies find that older people have sometimes reported less fear than younger people (Ziegler & Mitchell, 2003) or find no difference in level of fear of crime between elderly and young people at all (Dammert & Malone, 2003). Social vulnerability is also linked to the higher level of fear of crime. People with a socio-economic disadvantage, as related to education, income, race, etc., are more likely to report higher levels of the fear (Hipp, 2010; Pantazis, 2000; Taylor & Hale, 1986; Will & McGrath, 1995).

Another group of fear facilitators is generally called the disorder/ incivilities model, which explains fear of crime using the community context. This group basically bases their theses on the social disorder of the neighborhood. Early influence of this group of research includes the Broken Window theory (Wilson & Kelling, 1982) and the Social Disorganization theory (Shaw & McKay, 1969). The Broken Window theory is widely cited, emphasizing that when rule breakings in a neighborhood are neglected, more incivilities as well as a greater number of the rule breaking activities will follow. In short, broken control by society at large can be clearly seen via lack of care by owners as well as lack of law enforcement from relevant authority (Russo et al., 2011). Disorder/incivilities can be in the form of physical and social aspects (LaGrange et al., 1992; Skogan, 1990). The physical incivilities can be observed from litter in public space, garbage in private abandoned land, graffiti, etc. The social incivilities include such publicly undesirable behaviors as teens gathering on streets, drug use and sales, soliciting/prostituting, and public drinking. The literature also suggests that incivilities will increase the opportunity for crime as the deteriorating condition of the neighborhood serves as a public signal that nobody cares about rule-breaking in that area. This broken

window theory has the same application to the Social Disorganization theory (Shaw & McKay, 1969). The common theme of the two theses is that a decrease in social control occurs when a community has fallen into a state of disorder. This is in line with Burgess (1925) who claimed that the processes of social disorganization are a general condition caused by the changing of a city during a normal development process. During the process of urbanization, the city will enter a mode of social disorganization and lose its social equilibrium. At this stage, both the Broken Window and Social Disorganization approaches agree in the consequences of disorganized neighborhood, which range from minor rule breakings to serious crimes. Citizens in these neighborhoods are naturally affected by such disorder and chaos, therefore increasing the level of fear of crime among them. The disorder/incivility factors in this group include actual crime rate which can be thought of as “objective risk of being victimized” (Russo et al., 2011), economic disadvantage (Franklin et al., 2008), social and physical disorder/incivilities (LaGrange et al., 1992; Perkins & Taylor, 1996).

Inhibitors of Fear

Unlike the facilitators of fear, research on inhibitors of fear has emerged relatively late and received less attention, hence producing inconsistent operationalization and results (McGarrell et al., 1997). This group of research has also been labeled the “Community Concern” perspective (McGarrell et al., 1997; Taylor & Hale, 1986) or the “Social Integration” model (Franklin et al., 2008). In essence, this loosely formed thesis is rooted in the idea that fear of crime can be inhibited by the right social conditions, intervention or innovation, be they social integration, social control, community responsiveness, or community policing. Prior research has shown that fear of crime is negatively linked to well-tied neighborhoods (Hunter & Baumer, 1982; Lewis & Salem, 1986), home ownership/sense of belonging (Taylor & Hale, 1986), community-based programs (Allatt, 1984), police presence and increased foot patrol (Bennett, 1991; Hale, 1996; Winkel, 1986), and confidence in police (Bennett, 1991), for example.

An interesting question regarding this issue is whether police intervention influences fear of crime. Early research (Kelling et al., 1974; Kelling, 1981) reveals undetectable effects of police patrol on crime. However, some later research (Ratcliffe et al., 2011) shows that foot patrol has an inhibiting effect on violent crimes. Regarding the effect of police intervention on fear of crime, even though in practicality many police departments in the United States and around the world use foot patrol in order to inhibit fear of crime in neighborhoods, no substantial research has established significant effect of police patrol on fear of crime (Kelling et al., 1974). Moreover, the relationship between citizen perception of police work, especially community policing, and fear of crime is still inconclusive. Some studies (Jim et al., 2006; Moore & Trojanowicz, 1988) reveal the negative relationship between the citizens' perception on community policing and fear of crime while a study of twelve cities in the United States (Scheider et al., 2003) yields an opposite result.

In addition, inhibitors of fear are worth further investigation. Unlike facilitators of fear of crime, most of which are factors outside the control of law enforcement, the inhibitors of fear of crime are those that can be manipulated, thus yielding more practical policy implications. Police can focus on their operations, especially the parts that will increase the positive perception of citizens. Thus, if the relationship between the citizens' perception of police work and fear of crime is negative, there is still room for the police to control fear of crime among their citizens. Also, since prior research on models covering facilitators and inhibitors of fear has been done heavily in the western context, especially in the United States, this study will fill a cultural gap in crime literature by finding out the extent to which the results of research conducted in an eastern context are comparable to those found in the existing international literature.

Interaction Effects and Fear

Early research findings in criminology confirm the conditional influence of such variables as poverty, mobility, and heterogeneity (of people) on crime rates (Lander, 1954; Smith & Jarjoura, 1988; Sullenger, 1950). These independent variables, however, have varying effects on the dependent variable, depending on another variable in the same model. For instance, with different levels of residential mobility, the influence of poverty on crime rates will differ. This is true when replacing “crime rates” with another dependent variable such as “juvenile delinquency” as well (Willie & Gershenovitz, 1964). Nevertheless, the interaction effects on fear of crime have not been extensively explored in prior research study, thus meriting further examination. Using the same types of independent variables, this study seeks to examine whether the conditional effects will be found in a situation where fear of crime is used as a dependent variable. Two examples indicate that the interaction effects between crime rate/clearance rate and other factors should be investigated. First, previous studies indicate that fear of crime is independent of actual crime occurrences (May et al., 2009; Scarborough et al., 2010; Schafer, et al., 2006). Second, prior research findings show that the effect of crime occurrences, especially violent crime, itself on an individual’s fear of crime may decrease if the individual has some types of cohesion with other people in the neighborhood. Thus, the further interaction effects should be explored to better understand fear of crime. In this study, the interaction effect of clearance rate/crime rate and the conditions of the social disorganization, e.g., unemployment rate, poverty level, debt level, and divorce rate will be examined.

Research Framework

Deriving from research on fear of crime, this study hypothesizes that variables from each model will predict fear of crime in Thailand. The study has four hypotheses as follows:

1. The first model deals with vulnerability variables. Age, income, home location, divorce rate, and level of debt predict fear of crime.

2. The second model introduces social disorder variables. Actual crime rate, clearance rate, unemployment rate, and poverty rate predict fear of crime. Physical disorder and incivilities cannot be integrated into the model due to data limitations. These independent variables introduced in the second model are in the contextual level and would enable the analysis of the effects of variables at different levels. Porter contends that both levels of data should be merged into the same study to better understand and explain fear of crime.

3. For the third model, inhibitors of fear are added. Police performance on crime prevention and police performance on crime suppression predict fear of crime.

4. This study hypothesizes that interaction effects also predict fear of crime. These interaction effects are the products of multiplications, including clearance rate multiplied by unemployment rate, clearance rate multiplied by poverty level, clearance rate multiplied by debt level, clearance rate multiplied by divorce rate, crime rate multiplied by unemployment rate, crime rate multiplied by poverty level, crime rate multiplied by debt level, and crime rate multiplied by divorce rate.

Methodology

For data collection and analysis, this study used a multi-level method. The data set consisted of 6,080 cases at the individual level and 76 cases at the aggregate level. To analyze the data, an HLM technique (Raudenbush & Bryk, 2002; Russo et al, 2011) was chosen for its technical merits. First, much of the data used for this study were secondary, as collected annually by the Royal Thai Police, thus making it impossible for any researchers outside the Royal Thai Police to dictate the scope and range of the original data. This HLM technique utilizes data at the aggregate level to help supplement the individual-level data in order to explain the dependent variable, offsetting the drawback of not having sufficient individual level data from a secondary source. Second, as fear of crime is usually linked to a geographic area, the HLM technique is particularly advantageous in that it takes environmental/ecological factors into account (Russo et al., 2011).

Measures

The dependent variable for this study is self-reported fear of crime, with the questions capturing fear of crime as a cognitive aspect¹. This study follows a long line of research on how to measure fear of crime. Fear of crime here is measured by items derived from the National Crime Victimization Survey (NCVS) which has been used in many previous studies (e.g., Baumer, 1985; Convington, & Taylor, 1991; Lewis, & Salem, 1986; McGarrel et al., 1997; Skogan, & Maxfield, 1981). Even though some studies (e.g., Ferraro & Lagrange, 1987; Hough, 2004) suggest that fear of crime is multi-dimensional, the approach used in this study makes it possible to compare the results of this study with those of much existing research that uses the same measurement. This approach also allows answers on the practical policy implications as set forth in the research questions (McGarrell et al., 1997).

In this study, the respondents were asked to rate their perception of the questionnaire items as follows:

1. "You and your properties are safe while you are staying in your house during the day time."
2. "You and your properties are safe while you are staying in your house during the night time."
3. "You and your properties are safe while you are spending time outside the house during the day time."
4. "You and your properties are safe while you are spending time outside the house during the night time."
5. "You and your properties are safe while you are on a business trip outside the house for many days."

The responses to the above questions are categorized as: strongly agree (5); somewhat agree (4); neutral (3); somewhat disagree (2); and strongly disagree (1). It must be noted that the higher the score for this variable, the safer the respondent felt. Then the scores were reversed in order for the higher score to represent the higher level of fear. The alpha for the scale is .91.

The independent variables for this study include: age categorized as 1 (45 years old and older) and 0 (below 45 years old); home location categorized as 1 (in urban areas) and 0 (outside urban areas); occupation categorized as 1 (with regular income) and 0 (with no regular income). Other independent variables, namely debt level, clearance rate, crime rate, unemployment rate, poverty rate, and divorce rate were measured in ratio while suppression and prevention were measured in intervals. Also, due to the limitations of data, originally collected for the Royal Thai Police as stated earlier, the gender variable was not included in this study. Also, the age variable was dichotomous.

It should be noted here that crime rate and clearance rate for this study include only serious crimes (such as homicide, robbery, ransom, and arson) reported to the police. This is to avoid the effect of the “dark figure of crime” (i.e., the number of crimes unreported or underreported to police). Debt was calculated per household in each province. It is worth noting here the difference between the characteristics of debt owners in Thailand and in other countries (such as the United States). For some developed countries, a majority of debt has been generated by middle-income people with good credit rating; debt owners in Thailand are generally of lower income brackets and may be classified as a disadvantaged group. Divorce case per population was obtained from the number of divorce cases divided by the number of population in each province. The most updated data were then selected and used as the study’s independent variables. All of them were collected in 2010, except for poverty and unemployment which were collected in 2009. Crime suppression and prevention variables were collected from the same questionnaire that includes the fear of crime variable. The respondents were asked to rate their perception of police performance on crime suppression and crime prevention as follows:

Performance on crime suppression

1. The police are able to arrest suspects in criminal cases, especially in major cases, serious cases, and cases attracting public interest.
2. The police seek cooperation from citizens when investigating cases.

3. The police give an opportunity for citizens to contribute to their investigation, such as citizens having a channel to report information about suspects and police giving rewards to citizens who assist them in cases.

4. The police apply appropriate technology, such as use of CCTV and use of mobile emergency calls, in their investigative work.

5. The police quickly arrive at a crime scene.

Performance on crime prevention

1. There are regular community-policing activities in the neighborhood.

2. The police regularly set up check points in the neighborhood.

3. The police patrol regularly in the neighborhood.

4. The police help educate local residents on crime prevention.

5. The police circulate crime information in the neighborhood.

6. The police put effort to control use and sales of drugs in such venues as nightclubs, gambling parlors, and places with teen gathering.

The responses for police performance on crime suppression and crime prevention are in the same format as that of fear of crime, ranging from (5) strongly agree to (1) disagree. This study includes the use of interaction variables. These variables are the products (multiplication) of two variables from six variables: Clearance rate and Crime rate, and Unemployment, Poverty, Debt, and Divorce.

Data Collection

The data used in this study can be divided into two groups: individual-level data and aggregate-level data. At the individual level, the data were collected by a research team from Chulalongkorn University in 2010 for the Research and Development Department of the Royal Thai Police, using accidental sampling with a specified quota for each geographic area. Using a face-to-face approach, the survey data from 6,080 respondents were collected from every province in Thailand with an 80-case quota for each province, from which the data were collected from its central district and two randomly drawn districts. Then, approximately 25 to 30 cases were drawn from each district using

accidental sampling. It must be noted here that the data used for this study are not representative of the population of Thailand but still encompass a wide range of lives, with samples from every single province in the country. The number of provinces in the Kingdom of Thailand was 76. According to the Department of Provincial Administration of Thailand, the number of population in Bangkok in 2010 was 5,701,394. The population in other provinces ranges from the biggest number of 2,582,089 in Nakhon Ratchasima to the smallest number of 183,079 in Ranong.

At the aggregate level, data were drawn from two sources, namely the Royal Thai Police (for provincial crime rate and clearance rate reported to the Royal Thai Police) and the National Statistical Office (for poverty level, debt level, divorce rate, and unemployment rate also updated annually). They were then grouped at the provincial level with N equal to 76.

Data Analysis

As mentioned earlier, some independent variables in this study were measured at the aggregate level while other independent variables as well as the dependent variable were measured at the individual level. At a first glance, such statistical techniques as multiple regression and ordinary OLS may seem appropriate for this study but problems may arise from the analysis of data of hierarchical nature. One of the problems is ecological fallacy. Aggregated independent variables in this case were collected at a provincial level may not fit to predict the dependent variable collected at the individual level. Another problem is that the analysis could suffer from the “over-optimistic estimates of significance” due to the repeated use of the same values of aggregated variables at the individual level.

Therefore, a statistical technique for a multi-level model, called Hierarchical Linear Models or HLM, was chosen to analyze the data in this study. This technique can simultaneously handle measurements consisting of lower-level observations, individual level in this case, nested within a higher level, provincial level in this study. Examples of equations are displayed as follows:

Level-1 Model

$$\text{Fear}_{ij} = \beta_{0j} + \beta_{1j} * \text{Age}_{ij} + \beta_{2j} * \text{Home location}_{ij} + \beta_{3j} * \text{Occupation}_{ij} + r_{ij}$$

Level-2 Model

$$\beta_{0j} = \gamma_{00} + \gamma_{01} * \text{Clearance}_j + \gamma_{02} * \text{Debt}_j + \gamma_{03} * \text{Unemployed}_j + \gamma_{04} * \text{Divorce}_j + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

Mixed Model

$$\text{Fear}_{ij} = \gamma_{00} + \gamma_{01} * \text{Clearance}_j + \gamma_{02} * \text{Debt}_j + \gamma_{03} * \text{Unemployed}_j + \gamma_{04} * \text{Divorce}_j + \beta_{1j} * \text{Age}_{ij} + \beta_{2j} * \text{Home}_{ij} + \beta_{3j} * \text{Occupation}_{ij} + \gamma_{10} + \gamma_{20} + \gamma_{30} + u_{0j} + r_{ij}$$

Where

β_{0j} is the constant or intercept,

β_{ij} are the regression coefficients of the explanatory variables,

r_{ij} is a level-1 random effect,

$i = 1, \dots, n_j$ denotes individuals within provinces, and

$j = 1, \dots, n_j$ denotes provinces.

Results

Demographic data from the samples are shown in Table 1 and the results for hypothesis testing are shown in Table 2. First, the analysis began with an intercept-only model (Model 1) using HLM. The variance component (provincial level) of the intercept was statistically significant ($\mu_0 = 2.85, p < 0.01$). This indicates that fear of crime from the samples varies across provinces in Thailand. Thus the variables at the provincial level were fit to be in this model and were included in later steps. Then, as the vulnerability variables were entered into Model 2, the variance component of the intercept decreased ($\mu_0 = 2.63, p < 0.01$), meaning Model 2 has improved from Model 1. Two out of three demographic variables here, i.e., Home location and Debt level, showed significant relationships with

the fear of crime variable. Age and Occupation failed to show an effect on the dependent variable.

After the disorder variables were put into Model 3, the variance component again decreased ($\mu_0 = 2.16, p < 0.01$). Home location and Debt still showed significant relationships with fear of crime in the same direction. Also, one other variable in the social disorder variable group, Unemployment, showed a significant relationship with the dependent variable. Age, Occupation, Clearance rate, Crime rate, Poverty, and Divorce rate did not show significant relationship with the dependent variable.

In Model 4, the police performance variables were added into the equation. The variance component of the intercept in Model 4 decreased ($\mu_0 = 0.91, p < 0.01$). While the significant relationships between the variables found in Model 2 and Model 3, i.e., Home location and Debt, and the dependent variable disappeared, the variance component of the intercept decreased dramatically in this model, i.e., from 2.16 to 0.91 or 57.87 percent. This significant decrease came from the inclusion of the inhibitor factors into the model. Unemployment retained its significant relationship with the dependent variable. One variable in the vulnerability group, Occupation, and both two variables in the police performance group, i.e., Suppression and Prevention, showed significant relationships with the dependent variable.

Table 1. Descriptive Statistics (N = 6,080 for level 1 and 76 for level 2)

Variables	Mean	s.d.	Min	Max
<i>Level 1</i>				
Fear of crime	13.99	4.36	5.00	25.00
Age	.93	.25	0.00	1.00
Home	.63	.48	0.00	1.00
Occupation	.59	.49	0.00	1.00
<i>Level 2</i>				
Clearance rate	6.51	1.75	.81	9.66
Crime rate	9.41	7.66	2.10	43.49
Unemployment	14.55	7.62	3.00	38.00
Poverty	15.53	1.07	14.36	21.35
Debt	12.42	5.06	1.89	30.95
Divorce	16.02	6.13	3.26	37.55
Suppression	15.94	4.80	0.00	25.00
Prevention	18.94	5.78	0.00	30.00
<i>Interaction</i>				
Clearance x unemployment	92.35	56.18	17.75	337.50
Clearance x poverty	100.65	26.13	11.74	143.52
Clearance x debt	80.23	33.13	3.84	160.94
Clearance x divorce	103.34	46.25	13.55	294.42
Crime x unemployment	143.65	176.72	6.41	1056.76
Crime x poverty	148.03	119.19	30.81	632.92
Crime x debt	113.37	95.89	9.39	421.37
Crime x divorce	146.82	120.17	21.97	730.27

Table 2. Hierarchical regression of fear of crime

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Fixed effects</i>					
Intercept	13.97** (.21)	12.49** (.65)	10.12** (2.18)	20.46** (2.21)	16.18 (15.16)
<i>Facilitators of fear: Vulnerability</i>					
Age		.42 (.27)	.43 (.27)	-.03 (.96)	-.04 (.17)
Home		-.43* (.20)	-.43* (.20)	.16 (.14)	.15 (.14)
Occupation		.34 (.21)	.34 (.21)	-.27* (.12)	-.27* (.12)
Debt		.093** (.03)	.08* (.04)	.04 (.02)	-.09 (.13)
<i>Facilitators of fear: Disorder</i>					
Clearance rate			-.01 (.16)	.12 (.01)	-1.30 (2.20)
Crime rate			.03 (.04)	.02 (.02)	1.41* (.55)
Poverty			.09 (.13)	.16 (.11)	.51 (.93)
Unemployment			.09** (.02)	.02* (.01)	-.26* (.12)
Divorce			-.02 (.03)	-.01 (.02)	.30** (.11)
<i>Inhibitors of fear: Police performance</i>					
Suppression				-.22** (.03)	-.22** (.03)
Prevention				-.36** (.02)	-.36** (.02)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Interaction effects</i>					
Clearance x unemployment					.03* (.01)
Clearance x poverty					.07 (.14)
Clearance x debt					.02 (.02)
Clearance x divorce					-.03* (.01)
Crime x unemployment					.01* (.00)
Crime x poverty					-.09** (.03)
Crime x debt					.00 (.00)
Crime x divorce					-.03* (.00)
Random effects	2.85	2.63	2.16	.91	.83
Intercept, γ_{00}					
Province-level variance					
χ^2	906.65**	821.33**	664.58**	525.74**	429.90**

* $p < 0.05$, ** $p < 0.01$

Standard errors in parentheses

The interaction variables were added into Model 5. The variance component of the intercept in Model 5 again decreased ($\mu_0 = 0.83$, $p < 0.01$). Occupation, Unemployment, Suppression, and Prevention, which showed the significant relationships with fear of crime in Model 4, still remained significant. Meanwhile, Crime rate and Divorce, which never showed their relationship with the dependent variable in Model 3 and 4, turned out to reveal their influence. Regarding the interaction variables, five out of eight variables showed the relationships with fear of crime. These variables include the following interaction products, Clearance rate x Unemployment, Clearance rate x Divorce, Crime rate x Unemployment, Crime rate x Poverty, and Crime rate x Divorce. The significant effect of the interaction terms indicates that the effects of the involved independent variables on the dependent variable are not separate but rather are condition on the other involved variable in the interaction term. The significant effect of the interaction term Clearance rate x Unemployment, for example, means the effect of clearance rate on fear of crime cannot be considered separately without taking the effect of unemployment level into the explanation.

Discussion and Conclusions

Most of the existing studies on fear of crime have based their explanations on two theoretical frameworks. The first explanation points to the vulnerability of people. Those who have physical vulnerability -- such as the elderly and female -- and social vulnerability -- such as low education, high debt, or low income -- will perceive the crime context in their environment to be more serious than other people. Thus, they tend to feel and report higher levels of fear of crime. The second explanation relies on the concept of social disorganized community. The structural factors indicating disorder and chaos in community include poverty, residential mobility, racial heterogeneity, and family disruption. People living in a community with high level of these stress-induced factors tend to report higher fear of crime. Broken Window approach is also included in this category.

This study utilizing an HLM analysis yields several interesting findings. Inconsistent with existing research (Russo et al., 2011), such facilitators of fear as age and type of home location (urbanism) in the vulnerability model failed to significantly influence fear of crime in Thailand and may need to be investigated in further research. However, occupation, which was used as a proxy for citizen's educational level did predict fear of crime. In Thailand, people with low education find it difficult to a secure job and receive regular income. They tend to work in an informal work setting and therefore earn lower income. The significant relationship between occupation and fear of crime in this study is in line with existing research (Scarborough et al, 2010) and confirms that the higher education level, the lower level of fear of crime they report in Thailand. Divorce rate, which indicates certain family conditions, such as living by oneself, being a single parent, and maybe raising child (ren) on their own, also predicted fear of crime. The higher the rate of single parents in the neighborhood, the higher level of fear of crime the residents possess. Thus, this study partly confirms the findings in victimization/vulnerability model from prior research. Moreover, the effect of divorce rate on fear of crime also depends on the condition of the crime rate and clearance rate in the area as indicated by the significant effects of the two interaction terms, Crime rate x Divorce and Clearance rate x Divorce. This finding explains why previous studies found that crime rate was not significantly related with fear of crime. In fact, in this study, crime rate can explain fear of crime if the divorce rate is high. This is also true with the crime rate and unemployment rate as well as crime rate and poverty rate. In the same vein, the clearance rate also can explain fear of crime under the condition of unemployment and divorce rate. This finding partly supports the study by Porter that the relationship between crime occurrences and fear of crime is conditional on other factors, i.e., unemployment rate, poverty level, and divorce rate in this study.

This study suggests that fear of crime among Thai citizens is not equally high in the high crime area, but depends on the rate of unemployment and the rate of divorce in the area as well. The findings related to the interaction effects

will enable policy makers as well as the practitioner to identify the more precise target groups of people with high level of fear of crime and then tailor suitable programs for them. For the disorder/incivilities model, this study is in accordance with previous research (Franklin et al., 2008; LaGrange, 1992; Russo et al., 2011). Crime rate and unemployment rate at the ecological level did predict higher levels of fear of crime. It is worth noting that crime rate itself, without the interaction effect in the same model, did not show the relationship with fear of crime, as reported in much past research (May et al., 2009; Scarborough et al., 2010; Schafer, et al., 2006). As for the crime control model, this study found that perceived police performance on both crime prevention and crime suppression are great inhibitors of fear as they predicted (lower level of) fear of crime. These findings are quite useful and can be translated into policy implications.

While prior research shows that a number of factors can and will induce the fear of crime among citizens, be they vulnerability factors (age, education, low income, etc.) or disorder/incivilities factors (poverty, unemployment, etc.), these factors are physical or social ills that can hardly be controlled by law enforcement and other relevant governmental units. These factors were long found to be related to fear of crime but they are not easy or practical to manipulate. Therefore, from the law enforcement's point of view, the vulnerability and disorder/incivilities factors cannot be improved much by way of police performance. This study's findings add to the current body of literature on fear of crime at a practical level in that while models on facilitators of fear could help identify those people with a tendency to be fearful of crime, the inhibiting factors could lead to the more practical measures which could hinder fear among these people. In essence, the use of public resources could be maximized by increasing police performance on crime prevention and suppression among the vulnerable groups. Police can focus on communicating with their citizens about crime prevention and suppression through the community policing strategies. This directed task could lead to an actual decrease in fear of crime among the target citizens. The findings regarding the effect of inhibiting factors, i.e. police performance on crime suppression and

on crime prevention, on fear of crime were not clear in the existing literature. This study reveals that inhibiting factors are significantly related to fear of crime, when controlling for the facilitator factors in the same model. As in the Model 4, both perception on police performance in crime suppression and prevention are significantly related to fear of crime when the variables in vulnerability and social disorder group are in the same model.

Contribution and Limitations

While this study has been built on top of prior research, it must be noted here that most previous research findings have drawn their conclusions in the western context. Very few findings have tested and explained such assumptions using data from the eastern counterpart (Liu et al., 2009 for example). This study aims to fill this gap by providing an analysis specific to Thailand, using data collected from every province in the country. The results generally support the explanations and bring about a conclusion that such findings from the western context can be applied to the Thai society to a certain level. Two policy implications can be drawn here. First, all these findings mean that the fear of crime generally affects the quality of life of the Thai citizens in pretty much the same way that has occurred in other cultures. The government should pay more attention to those who are physically and socially vulnerable and those who live in a highly disordered area. The interaction effects of the factors are also needed to be put into consideration. People who live in a crime-infested area do not have the same level of fear. In fact, their level of fear depends on the level of poverty, divorce rate, and unemployment as well. As these people perceive higher danger from crimes than others, a practical way to decrease the level of fear is to utilize the community police, who are close to the local residents in their day-to-day operations and have them focus on specific groups of people. Routine operations for these local police officers can be added, to visit and listen more closely to the more vulnerable people as well as the people in highly disorganized areas. Second, the police should respond to as well as communicate with the citizens

more promptly and actively. Such media as pamphlets, flyers, posters, and TV and radio could be used to boost the confidence and trust in public safety. New communications channels can link citizens to the police, especially social media on the Internet (already reaching the rural area). GIS maps can play a role here to help the police to identify the areas with high level of fear of crime as well as high level of specific variables related to fear of crime.

As for limitations, significant relationships between other variables (i.e. Age, Home location, clearance rate, and poverty) and fear of crime cannot be established even though the interaction terms were added in the same model. This may be due to many reasons. First, the data used in this study were not purposefully collected for a study on fear of crime. They were originally collected to measure the level of citizens' satisfaction towards the police. Hence, the measure of fear of crime may not fully capture the multi-facets of this concept. Second, the clearance rate in this study takes into account only the serious crimes, as mentioned earlier, to avoid the problem of "dark figure of crime." A drawback here is that this kind of crime may not be known by or made aware to the public in general; and thus the perception of information regarding the cleared cases in each province may not fully reflect the real situation. It is suggested here that for future criminology research in Thailand fear of crime should be measured in a way that can capture both cognitive and affective aspects of the concept as many scholars (e.g., Ferraro & LaGrange, 1987; LaGrange et al., 1992; Warr, 1984) have suggested. Also, research should bring more variables into the model to explain fear of crime at both individual and aggregate levels to compare the results with the existing findings from the western countries.

Endnote

¹ Respondents were asked a number of questions, many of which were related to citizens' satisfaction toward police services and performances. "Fear of crime" questions, which made up the dependent variable in this study, were also included.

References

- Addington, L. (2009). *Fear of Crime and Perceived Risk*. Oxford Bibliographies Online: Criminology. doi: 10.1093/obo/9780195396607-0051.
- Allatt, P. (1984). Fear of crime: The effect of improved residential security on a difficult to let estate. *The Howard Journal of Criminal Justice*, 23(3), 170-182.
- Baumer, T. L. (1985). Testing a general model of fear of crime: Data from a national sample. *Journal of Research in Crime and Delinquency*, 22(3), 239-255.
- Bennett, T. (1991). The effectiveness of a police initiated fear reducing strategy. *The British Journal of Criminology*, 31(1), 1-14.
- Box, S., Hale, C., & Andrews, G. (1988). Explaining fear of crime. *British Journal of Criminology*, 28(3), 340-356.
- Burgess, E. W. (1925). The growth of the city. In Park, R. E., Burgess, E. W., & McKenzie, R. D. (Eds.). *The City*. Chicago: University of Chicago Press.
- Clemente, F., & Kleiman, M. B. (1997). Fear of crime in the United States: A multivariate analysis. *Social Forces*, 56(2), 519-531.
- Conklin, J. (1975). *The Impact of Crime*. New York: MacMillan.
- Convington, J., & Taylor, R. B. (1991). Fear of crime in urban residential neighborhoods: Implication of between-and within-neighborhood sources for current models. *Sociological Quarterly*, 32(2), 231-249.
- Cordner, G. W. (1986). Fear of crime and the police: An evaluation of a fear-reduction strategy. *Journal of Police Science and Administration*, 14: 223-233.
- Dammert, L., & Malone, M. F. T. (2003). Fear of crime or fear of life? Public insecurities in Chile. *Bulletin of Latin American Research*, 22(1), 79-101.
- Donder, L. D., Verte, D., & Messelis, E. (2005). Fear of crime and elderly people: Key factors that determine fear of crime among elderly people in West Flanders. *Ageing International*, 30(4), 363-376.
- Ferguson, K. M., & Mindel, C. H. (2007). Modeling fear of crime in Dallas neighborhoods: A test of social capital theory. *Crime & Delinquency*, 53(2), 322-349.

- Ferraro, K. (1995). *Fear of Crime: Interpreting Victimization Risk*. New York: SUNY Press.
- Ferraro, K. F., & LeGrange, R. L. (1987). The measurement of fear of crime. *Sociological Inquiry*, 57(1), 70-101.
- _____. (1992). Are older people most afraid of crime? Reconsidering age differences in fear of victimization. *The Journal of Gerontology*, 47(5), 233-244.
- Fisher, B. S., & Sloan, J. J. (2003). Unraveling the fear of victimization among college women: Is the 'shadow of sexual assault hypothesis' supported? *Justice Quarterly*, 20(3), 633-659.
- Franklin, T. W., Franklin, C., & Fearn, N. E. (2008). A multilevel analysis of the vulnerability, disorder, and social integration models of fear of crime. *Social Justice Research*, 21(2), 204-227.
- Garafalo, J. (1981). The fear of crime: Causes and consequences. *Journal of Criminal Law and Criminology*, 72(2), 839-853.
- Hale, C. (1996). Fear of crime: A review of the literature. *International Review of Victimology*, 4(2), 79-150.
- Hipp, J. R. (2010). Residents perception of crime and disorder: how much is bias and how much is social environment differences? *Criminology*, 48(2), 475-508.
- Hough, M. (2004). Worry about crime: Mental states or mental events. *International Journal of Social Research Methodology*, 7(2), 173-176.
- Hunter, A., & Baumer, T. L. (1982). Street traffic, social integration, and fear of crime. *Sociological Inquiry*, 52(2), 122-131.
- Jim, J., Mitchell, F. N., & Kent, D. R. (2006). Community-oriented policing in a retail shopping center. *Policing: An International Journal of Police Strategies & Management*, 29(1), 146-157.
- Kelling, G. L. (1981). *The Newark Foot Patrol Experiment*. Washington D.C.: Police Foundation.
- Kelling, G. L., Anthony M. P., Duane, D., & Charles E. B. (1974). *The Kansas City Preventative Patrol Experiment: A Summary Report*. Washington D.C.: Police Foundation.

- Kennedy, L. W., & Silverman, R. A. (1985). Significant others and fear of crime among the elderly. *International Journal of Aging and Human Development*, 20(4), 241-256.
- Killias, M., & Clerici, C. (2000). Different measures of vulnerability and their relation to different dimensions of fear of crime. *The British Journal of Criminology*, 40(3), 437-450.
- LaGrange, R. L., Ferraro, K. F., & Supancic, M. (1992). Perceived risk and fear of crime: Role of social and physical incivilities. *Journal of Research in Crime and Delinquency*, 29(3), 311-334.
- Lander, B. (1954). *Towards an Understanding of Juvenile Delinquency*. New York: Columbia University Press.
- Lee, M. S., & Ulmer, J. T. (2000). Fear of crime among Korean Americans in Chicago communities. *Criminology*, 38(4), 1173-1206.
- Lewis, D. A., & Salem, G. (1986). *Fear of Crime: Incivility and Production of a Social Problem*. New Brunswick: Transaction Books.
- Liu, J., Messner, S. F., Zhang, L., & Zhuo, Y. (2009). Socio-demographic correlates of fear of crime and the social context of contemporary urban China. *American Journal of Community Psychology*, 44(1-2), 93-108.
- May, D. C., Rader, N. E., & Goodrum, S. (2009). A gendered assessment of the "threat of victimization:" Examining gender differences in fear of crime, perceived risk, avoidance, and defensive behavior. *Criminal Justice Review*, 35(2), 159-182.
- McConnell, E. (1997). Fear of crime on campus: A study of a Southern University. *Journal of Security Administration*, 20(2), 22-46.
- McGarrell, E. F., Giacomazzi, A. L., & Thurman, Q. C. (1997). Neighborhood disorder, integration, and the fear of crime. *Justice Quarterly*, 14(3), 479-500.
- Moor, M. H., & Trojanowicz, R. C. (1988). Policing and the fear of crime. *Perspectives on Policing*, 3, 1-7.
- National Crime Council. (2009). *Fear of Crime in Ireland and Its Impact on Quality of Life*. Retrieved January 5, 2013 from <http://www.justice.ie/en/JELR/Fear%20of%20Crime%20in%20Ireland.pdf/Files/Fear%20of%20Crime%20in%20Ireland.pdf>.

- Pantazis, C. (2000). 'Fear of crime', vulnerability and poverty: evidence from the British Crime Survey. *British Journal of Criminology*, 40(3), 414-436.
- Perkins, D. D., & Taylor, R. B. (1996). Ecological assessments of community disorder: Their relationship to fear of crime and theoretical implications. *American Journal of Community Psychology*, 24(1), 63-107.
- Ratcliffe, J. H., Taniguchi, T. R., Groff, E., & Wood, J. D. (2011). The Philadelphia foot patrol experiment: a randomized controlled trial of police patrol effectiveness in violent crime hotspots. *Criminology*, 49(3), 795-831.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods (2nd ed.)*. Thousand Oaks, CA: Sage Publications.
- Russo, S., Roccato, M., & Vieno, A. (2011). Predicting perceived risk of a crime: A multilevel study. *American Journal of Community Psychology*, 48(3-4), 384-394.
- Scarborough, B. K., Like-Haislip, T. Z., Novak, K. J., Lucas, W. L., & Alarid, L. F. (2010). Assessing the relationship between individual characteristics, neighborhood context, and fear of crime. *Journal of Criminal Justice*, 38(4), 819-826.
- Schafer, J. A., Huebner, B. M., & Bynum, T. S. (2006). Fear of crime and criminal victimization: Gender-based contrasts. *Journal of Criminal Justice*, 34(3), 285-301.
- Scheider, M. C., Rowell, T., & Bezdikian, V. (2003). The impact of citizen perceptions of community policing on fear of crime: findings from twelve cities. *Police Quarterly*, 6(4), 363-386.
- Shaw, C. R., & McKay, H. D. (1969). *Juvenile Delinquency and Urban Areas; A Study of Rates of Delinquency in Relation to Differential Characteristics of Local Communities in American Cities (Rev. ed.)*. Chicago: University of Chicago Press.
- Skogan, W. G. (1986). The fear of crime and its behavioral implications. In Fattah, E. A. (Ed.). *From Crime Policy to Victim Policy: Reorienting the Justice System*. London: Macmillan.

- Skogan, W. G. (1990). *Disorder and Decline: Crime and the Spiral of Decay in American Neighborhoods*. New York: The Free Press.
- Skogan, W. G., & Maxfield, M. G. (1981). *Coping with Crime*. Beverly Hills: Sage.
- Smith, D. A., & Jarjoura, G. R. (1988). Social structure and criminal victimization. *Journal of Research in Crime and Delinquency*, 25(1), 27-52.
- Sullenger, T. E. (1950). The social significance of mobility: An Omaha study. *The American Journal of Sociology*, 55(6), 559-564.
- Taylor, R. B., & Hale, M. (1986). Testing alternative models of fear of crime. *Journal of Criminal Law and Criminology*, 77(1), 151-189.
- Warr, M. (1984). Fear of victimization: Why are woman and the elderly more afraid? *Social Science Quarterly*, 65(3), 681-702.
- Wilcox, P., Quisenberry, N., & Jones, S. (2003). The built environment and community crime risk interpretation. *Journal of Research in Crime and Delinquency*, 40(3), 322-345.
- Will, J. A., & McGrath, J. H. (1995). Crime, neighborhood perceptions, and the underclass: The relationship between fear of crime and class position. *Journal of Criminal Justice*, 23(2), 163-176.
- Willie, C. V., & Gershenovitz, A. (1964). Juvenile delinquency in racially mixed areas. *American Sociological Review*, 29(5), 740-744.
- Wilson, J. Q., & Kelling, G. L. (1982). Broken windows. *The Atlantic Monthly*, 2(March), 9-38.
- Winkel, F. W. (1986). Reducing fear of crime through police visibility: A field experiment. *Criminal Justice Policy review*, 1(4), 381-398.
- Wyant, B. R. (2008). Multilevel impacts of perceived incivilities and perceptions of crime risk on fear of crime: Isolating endogenous impacts. *Journal of Research in Crime and Delinquency*, 45(1), 39-64.
- Ziegler, R., & Mitchell, D. B. (2003). Aging and fear of crime: an experimental approach to an apparent paradox. *Experimental Aging Research*, 29(2), 173-187.

