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An Examination of the Shadow of Sexual Assault Hypothesis Among Men and Women in South Korea

Choi, Jaeyong

Angelo State University

Yim, Haneul

University of Texas at Dallas

Daniel R. Lee

Indiana University of Pennsylvania

Author Note

Jaeyong Choi, Ph.D. is an Assistant Professor in the Department of Security Studies and Criminal Justice at Angelo State University. His research interests include criminological theory, police legitimacy, media and criminal justice, and fear of crime.

Haneul Yim is a doctoral student in the Department of Criminology and Criminal Justice at the University of Texas at Dallas. His research interests include perceptions of police and life course theories.

Daniel R. Lee received his Ph.D. from the University of Maryland College Park. He is currently is a professor of criminology at the Indiana University of Pennsylvania.

Correspondence concerning this article should be addressed to Jaeyong Choi, Department of Security Studies and Criminal Justice, Angelo State University, 2601 W. Avenue N San Angelo, Texas 76909. Phone: 325-486-2544, Fax: 325-942-2544, Email: jaeyong.choi@angelo.edu

Abstract

Using a South Korean sample from 2010 National Crime Victim Survey (NCVS), the current research examined the gender differences of fear of four different types of crime testing the shadow of sexual assault thesis, which asserts that sexual assault operates as a master offense for females. The current study provides insight into the robustness of the shadow hypothesis by controlling for various covariates (e.g., perceptions of the neighborhood and crime-related media consumption) that have been often omitted in this line of literature. Results show that the largest difference in fear between males and females was the fear of sexual assault, and based on coefficient comparison tests, fear of sexual assault was a stronger predictor of fear of other crimes among males than among females. The current study calls for future research to disentangle the shadow of sexual hypothesis in different settings and to conduct more studies specifically on men's fear of crime.

Keywords: shadow of sexual assault, fear of sexual assault, South Korea

An Examination of the Shadow of Sexual Assault Hypothesis Among Men and Women in South Korea

Fear of crime has been extensively studied in criminology and many related disciplines because of its broad implications ranging from individuals' well-being to weakening social relationships (Ferraro, 1995; Lane, Rader, Henson, Fisher, & May, 2014; Lee, 2018; Warr, 2000). Some researchers argue that fear of crime has served as a key component in corroding race relations (Skogan, 1995) and weakening social ties by leading individuals to withdraw from community life (Lane et al., 2014). While surveys have shown that the public has a high level of fear of crime in general (Kappeler & Potter, 2017), the level of fear of crime varies depending on demographic characteristics of individuals (Logan & Walker, 2017; Özaşçılar & Ziyalar, 2017). One of the most consistent findings regarding fear of crime is the difference in fear of crime between males and females (e.g., Cook & Fox, 2012; Ferraro, 1996; Fox, Nobles, & Piquero, 2009; Lane & Fisher, 2009). Previous studies have shown that while fear of crime is significantly related to the risk of being victimized, an individual's actual risk of victimization is not enough to explain a variation of fear of crime (Hinkle, 2015; Rader & Cossman, 2011; Rader & Haynes, 2011; Warr, 2000). Although females tend to express higher levels of fear of crimes than males, not all statistics support that females are more likely to experience direct victimization than their male counterparts for many crimes (Ferraro, 1996; Schafer, Huebner, & Bynum, 2006; Sutton, Robinson, & Farrall, 2011). This phenomenon is known as the victimization–fear paradox (Sacco, 1990).

Many models have been developed and tested to explain the different levels of fear of crime between males and females (Lane et al., 2014). Some researchers argued that females tend to underreport their victimization and that the hidden victimization rate of women can explain

higher levels of fear among women (Junger, 1987; Scott, 2003; Stanko, 1995). In contrast, the vulnerability perspective explains that females are less capable of protecting themselves from potential victimization than males (Hale, 1996; Skogan & Maxfield, 1981). Some researchers advanced the argument that females are socialized to be more fearful of crime by various learning agents such as parents and the media (Rader & Haynes, 2011; Scott, 2003). Despite numerous models to account for gender differences in fear of crime, the shadow of sexual assault hypothesis has prevailed in the fear of crime literature (Ferraro, 1996; Fisher & Sloan, 2003; Lane, Gover, & Dahod, 2009; Lane et al., 2014). This model hypothesizes that females tend to express high fear of crime in general due to their overshadowed fear of sexual assault (Ferraro, 1995, 1996).

While there exists a large body of empirical literature documenting the validity of the shadow hypothesis (Fisher & Sloan, 2003; Lane & Meeker, 2003; Lane et al., 2014), assessing the generalizability of the shadow hypothesis among Asians is still scarce (But see also, Chui, Cheng, & Wong, 2013). South Korea is considered as one of the safest countries in the world, and the recent report from the UN Crime Trends Survey on the prevalence rates on traditional crimes confirms the overall low crime rate of South Korea (e.g., the median rate of 34.3 assault per 100,000) (Heiskanen, 2010). Nonetheless, South Korea recorded the rape rate above the third quartile among 116 countries. Considering that the sex-fear paradox was presented based on the assumption that female victimization rates are lower than male victimization rates, it should be examined if this assumption is tenable in the South Korean context. A government report regarding victimization rates in South Korea indicates that while males are more likely to experience violent crimes relative to females from age 13 to 30, but this pattern is reversed among South Koreans aged 31 years to 50 years (Supreme Public Prosecutors' Office, 2015).

Against this backdrop, the shadow hypothesis may serve as a critical theoretical framework to understand the overall high fear of crime among South Koreans (NationMaster, 2014).

We aim to examine if the shadow hypothesis is adequate to account for gender gaps in fear of crime in different ways. First, using a sample of South Koreans, the external validity of the shadow hypothesis will be examined by testing if fear of sexual assault is a strong determinant of fear of other crimes among females. Next, the proposed relationship will be estimated with a split sample to compare the results across genders; the effect sizes of fear of sexual assault from the two models will be assessed with coefficient comparison tests.

The current study can contribute to the literature in three ways: (a) It provides some insights into the external validity of the shadow of sexual assault in a different cultural setting; (b) it controls for the key variables (e.g., perceptions of neighborhood and confidence in the police), omitted in prior research to reduce specification errors when examining the hypothesis; and (c) the addition of correlates of fear of crime can test the robustness of the shadow hypothesis.

Literature Review

Fear of Crime and Women

Since the Commission on Law Enforcement and Administration of Justice issued the report discussing the importance and consequences of fear of crime in the late 1960s (Katzenbach et al., 1967), researchers started paying attention to fear of crime as a topic worthy of study (Lane et al., 2014). The lack of clear definition of fear of crime was one of the biggest challenges in fear of crime research, and the dispute over the best measure of fear of crime is still ongoing (Farrall, Bannister, Ditton, & Gilchrist, 1997; Garofalo, 1981; Warr, 1984). While there is no universally accepted definition of what fear of crime means, the review of fear of crime

research shows that there is a shared component of each definition of fear of crime proposed by different researchers (Lane et al., 2014). For example, Garofalo (1981) suggested that fear of crime is an "emotional reaction characterized by a sense of danger and anxiety" (p. 840).

Similarly, Ferraro and LaGrange's (1987) definition illuminates the importance of an emotional dimension of fear of crime; fear of crime is "the negative emotional reaction generated by crime or symbols associated with crime" (p. 73). In other words, much of the conceptualization characterizes fear of crime as an emotional response to crime. Simultaneously, many researchers have agreed on the importance of distinguishing fear of crime from similar but different concepts such as the perceived risk since a cognitive response to crime should be distinguished from an emotional dimension of fear (Ferraro, 1995; Ferraro & Grange, 1987; Rountree & Land, 1996).

Aside from the definitional issue involving fear of crime, researchers have devoted considerable time and attention to understanding the gender differences in fear of crime (e.g., Callanan & Rosenberger, 2015; Haynie, 1998; May, 2001; Rader & Haynes, 2011). One of the most popular hypotheses to explain gender differences in fear is the shadow of sexual assault hypothesis (e.g., Cook & Fox, 2012; Ferraro, 1996; Lane & Meeker, 2003; Riggs & Cook, 2015). Warr (1984) argued that fear of sexual assault can explain high levels of fear of crime among women because any offense can lead to a sexual assault and that females often associate certain crimes with a sexual assault. This idea is known as the shadow of sexual assault hypothesis (see Ferraro, 1996). In the next section, we will provide a more detailed overview of the shadow of sexual assault hypothesis.

Shadow of Sexual Assault Hypothesis

Warr (1984) was among the first who directly mentioned the possibility of the overwhelming influence of sexual assault. He contended that sexual assault functions as a *master offense* for young females and becomes their primary concern. He concisely summed up this idea by arguing that the "fear of crime is fear of rape" (Warr, 1984, p. 700). Since any offense can result in a sexual assault, females may be fearful of other crimes. Warr referred to the crimes that are likely to be associated with other crimes in people's mind as perceptually contemporaneous offenses (see also, Ferraro, 1996; Lane & Meeker, 2003; Riggs & Cook, 2015). Considering that violent crimes are more likely to be involved in sexual assault as contemporaneous offenses than nonviolent crimes, fear of sexual assault should be a more significant predictor of fear of violent crimes relative to fear of nonviolent crimes. Previous studies found some support for this argument (e.g., Ferraro, 1996; Fisher & Sloan, 2003)

Drawing on Warr's (1984) previous work, Ferraro (1995) empirically tested the shadow hypothesis using national survey data. His findings lend credence to the argument that sexual offense functions as a master offense that guides fear of other crime. Starting with Ferraro (1995), this hypothesis has received substantial empirical supports (Britto, Stoddart, & Ugwu, 2017; Ferraro, 1995, 1996; Fisher & Sloan, 2003; May, 2001; Özaşçılar & Ziyalar, 2017; Wilcox, Jordan, & Pritchard, 2006). Some studies seek to clarify the link between fear of sexual assault and fear of other crimes. In their study with college students, Fisher, Sloan, Cullen, and Lu (1998) found that while the likelihood of females experiencing sexual assault by strangers is lower than by acquaintances, females indicate a higher fear for sexual assault committed by strangers. When comparing the impact of fear of sexual assault on fear of other crimes by strangers and acquaintances, researchers observed that although both types of sexual assault influenced the fear of crime significantly, the fear of stranger sexual assault was more critical in

heightening fear of other crimes (Jennings, Gover, & Pudrzynska, 2007; Wilcox et al., 2006; Wilcox, Jordan, & Pritchard, 2007).

Interestingly, some researchers have found that fear of sexual assault shadows fears of other crimes for not just females but males (Cook & Fox, 2012; Lane & Meeker, 2003; Riggs & Cook, 2015). These studies revealed that fear of sexual assault can be a significant factor predicting the level of fear of physical assault not only for females but also for males (Cook & Fox, 2012; Lane & Meeker, 2003; Riggs & Cook, 2015).

Several limitations of the literature on the shadow of sexual assault hypothesis are noteworthy in relation to the current study. First, the examination of the hypothesis remains very limited within the context of East Asia (cf. Chui et al., 2013). It is necessary to establish the validity of the shadow of sexual assault hypothesis in different cultural settings especially considering that a gender gap in fear of crime is observed across different cultures and societies (Choi, Yim, & Lee, 2015; Fetchenhauer & Buunk, 2005; Özaşçılar & Ziyalar, 2017). Second, many studies have not included variables found to be associated with fear of crime when examining the shadow of sexual assault hypothesis, which can raise the issue of spuriousness. In the following section, we leverage information from previous empirical research to identify potential correlates of fear of crime.

Other Covariates

Previous studies have related physical and social disorders, social cohesion, and collective efficacy to fear of crime (Brunton-Smith, Jackson, & Sutherland, 2014; Brunton-Smith & Sturgis, 2011; Ferraro, 1995; Jackson, 2004; McNeeley & Yuan, 2017; Skogan, 1986; Skogan & Maxfield, 1981; Yuan & McNeeley, 2017). Two models are particularly worth noting. First, the incivility model links visual signs and cues to fear of crime (Lewis & Salem, 1986). Incivility

refers to the perceived presence of physical and social disorders (LaGrange, Ferraro, & Supancic, 1992). This model proposes that if people are more afraid of crime when physical incivilities such as trash, wrecked cars, and broken windows are prevalent, or when people perceive social disorders such as juvenile delinquents, drunkards, and drifters (Lane et al., 2014).

Second, the social control model posits that perceptions of collective efficacy matters in predicting fear of crime (Gibson, Zhao, Lovrich, & Gaffney, 2002; Sampson, Raudenbush, & Earls, 1997; Wyant, 2008). Emphasizing residents' joint capacity to work together to address local problems, collective efficacy is defined as "the shared expectations and mutual civic engagement" that community members in local neighborhoods have (Ferguson & Mindel, 2007, p. 327). Some researchers suggest that collective efficacy should inhibit fear of crime because it promotes cooperative relationships between individuals within socially integrated contexts; while findings on whether collective efficacy lowers fear of crime are mixed, some studies reported supportive results (Covington & Taylor, 1991; Gibson et al., 2002; Yuan & McNeeley, 2017).

Given that failing to control for important covariates can confound the findings, it is critical to note that much of previous research on the shadow hypothesis failed to control for neighborhood perceptions (e.g., perceived disorder and collective efficacy) when examining the independent influence of fear of sexual assault on fear of other crimes (Dobbs, Waid, & Shelley, 2009; Lane & Meeker, 2003; Logan & Walker, 2017; Özaşçılar & Ziyalar, 2017; Riggs & Cook, 2015). The current study seeks to determine if fear of sexual assault can adequately account for a gender gap in fear of crime even after controlling for important covariates.

Current Study

Reflecting theoretical developments in research on fear of crime, the current study aims to contribute to previous research in three ways. First, since Ferraro's (1995) empirical test on the shadow hypothesis, research has discovered various factors that influence fear of crime but were not considered in Ferraro's study. This study seeks to control for various factors that have emerged as significant covariates to fear of crime. This includes perceived incivilities (Lewis & Salem, 1986), social cohesion and informal social control (Gibson et al., 2002), avoidance behavior (Lee & Hilinski-Rosick, 2012; Rader, Cossman, & Allison, 2009), confidence in the police (e.g., Skogan, 2009), and media consumption (Chiricos, McEntire, & Gertz, 2001; Eschholz, Chiricos, & Gertz, 2003).

Second, the current study tests the applicability of the shadow hypothesis with female and male samples respectively. Much research investigating the shadow hypothesis directed attention to female samples (Dobbs et al., 2009; Wilcox et al., 2006). Even when considering both genders, gender was merely used as a control variable (Ferraro, 1995, 1996; Fisher & Sloan, 2003). Recent studies began to separate male and female subsamples and examine the shadow hypothesis independently (Cook & Fox, 2012; Özaşçılar & Ziyalar, 2017; Riggs & Cook, 2015). Their findings indicate a high correlation between fear of sexual assault and fear of other crimes among male samples, which is in line with the shadow hypothesis. Given that the premise of the shadow hypothesis is that fear of sexual assault effectively accounts for gender gaps in fear of crime, a high correlation between fear of sexual assault and fear of other crimes found from a male sample should not be expected.

Third, the current study offers a unique opportunity to test the generalizability of the shadow hypothesis. Previous research has relied largely on specific samples such as college females and people living in specific locations (Fisher & Sloan, 2003; Fisher & Smith, 2009;

Jennings et al., 2007; Lane & Fox, 2013; Lane & Meeker, 2003). Also, very little is known about the applicability of the shadow hypothesis among Asians (Chui et al., 2013). Data used in this study are collected from a nationally representative sample among South Koreans, which enables an extended test of the shadow hypothesis and its applicability to cultures outside of the United States.

Methods

Data

Participants in the 2010 Korean National Crime Victim Survey (KNCVS) were household members who were sampled based on a three-stage sampling strategy so that findings from the survey can be generalizable to the South Korean population. The 2010 KNCVS was designed to overcome the limitations of official crime statistics. The survey questionnaire contains information to estimate the incidence of hidden crime, discover the factors that affect victimization, and better understand the citizens' perceptions of crime and criminal justice. Specifically, the Korea Institute of Criminology obtained the sampling frame of the 2010 KNCVS from Korean Census data. Considering the population sizes of the regions, 755 clusters were randomly selected among the 302,832 district clusters. Then, a large sample of 7,550 households was randomly drawn from these clusters. From these selected households, a total of 16,895 participants aged 14 and over were contacted by trained interviewers to conduct the face-to-face surveys. Details regarding recruitment and overall design of the 2010 KNCVS can be found in Kim and Hong (2011).

Measurement

Table 1 presents the variables used by Ferraro (1995, 1996) to examine the shadow hypothesis. He categorized the three groups of independent variables: (1) ecological

characteristics, (2) neighborhood perceptions, and (3) personal characteristics in his statistical models. Building on Ferraro's (1996) models, we included some key variables omitted in his model (e.g., collective efficacy and consumption of crime-related media) to minimize confounding and the potential introduction of bias. In Table 1, these variables are more fully elaborated and discussed.

Neighborhood characteristics. To refine Ferraro's (1996) neighborhood characteristics to reflect recent findings in fear of crime research, three variables involving neighborhood characteristics were added as follows; (1) incivility, (2) social cohesion, and (3) informal control (Gibson et al., 2002; Sampson et al., 1997). Specifically, residents' perceptions toward their communities are taken into account. Perceived incivilities can be defined as an individual's evaluation of physical and social disorders (LaGrange et al., 1992). High perceived incivilities can lead to worry about crime by making residents overestimate the likelihood of victimization (Brunton-Smith, 2011). The incivility scale ($\alpha = .83$) is measured with six items such as "There are a lot of dark alleys in my neighborhood" and "There are many delinquent juveniles in my neighborhood." The mean of the items was computed to tap incivility with a higher value representing higher levels of perceived incivilities. The measure of social cohesion ($\alpha = .93$) is represented by four items such as "community members know each other well." The mean of the four items was calculated to measure social cohesion with higher values indicating that respondents strongly perceive social cohesion. Informal control ($\alpha = .69$) is a three-item scale measured with items such as "community members in my neighborhood are helping each other well" and "community members in my neighborhood would like to participate in community policing if it is needed." The composite measure of informal control is created by averaging the items mentioned above with higher values representing greater perceptions of informal control.

All of these scales are measured on a five-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), and each scale conformed well to a one-factor solution.

Demographic characteristics. Five demographic variables are included in the models: sex, age, income, marital status, and education. Age is measured as a continuous variable. In terms of education, 'uneducated' was left out while the other values were included from elementary school to graduate school. Marital status was dummy coded. The reference category was 'not married,' whereas the status of 'divorced' and separation by death were grouped as one category separate from those who identified as being married. Monthly income is measured from no income = 1 to more than ten million won (approximately $8,400). The difference between each response option is a million won (approximately $840).

Direct victimization measures. Following Ferraro's (1996) model, the measure of direct victimization is included. Respondents were asked if they had experienced any of eight categories of crimes such as larceny, robbery, sexual assault, fraud, damage of property, housebreaking, and bullying in the previous year. Respondents who experienced victimization were coded as 1, whereas those who did not were coded as 0; this strategy replicates the operationalization from previous research (Özaşçılar & Ziyalar, 2017).

Indirect–victimization measure. Research has shown that indirect victimization can be more important than actual personal experiences with crime (Lane et al., 2014). For instance, Ferraro (1996) used a survey question asking respondents whether they have close friends or relatives who had been a victim of crime. Indirect victimization was measured by asking if they know any close person who had experienced any of eight categories of crime in the previous year. Respondents who had any close person who had experienced victimization were coded as 1, whereas those who did not were coded as 0.

Avoidance behavior. Avoidance behavior is included in statistical analyses (Lee & Hilinski-Rosick, 2012). To measure avoidance behavior, the following four items were used such as "I avoided places that seemed dangerous," "I don't take a taxi alone at night," "I tend to avoid working in the night time because it can be dangerous going outside," and "I accompany someone else because I am afraid of going outside by myself." The items were measured by a five-point Likert scale with response categories ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The avoidance scale conformed well to a one-factor solution. The mean of the four items was computed so that higher values indicate higher levels of avoidance behavior ($\alpha = .87$).

Confidence in the police. To overcome the omission of key variables in Ferraro's (1996) study, some variables are added in statistical analyses as control variables. One of them is confidence in the police. Confidence in policing has been shown to influence the fear of crime (Bennett, 1994; Skogan, 2009). The measure of confidence in the police ($\alpha = .77$) is created with responses to three items such as "Our local police are good at patrol activity," "When they receive the crime report, the local police will be immediately dispatched," and "If I report a crime, the local police will apprehend the criminal," all of which loaded on one overall factor. The mean of the three items was used.

Consumption of crime-related media. Another control variable is the consumption of crime-related media. Gerbner, Gross, Morgan, Signorielli, and Shanahan (2002) summarize and present numerous findings that showed that long–term exposure to crime-related media cultivates an unrealistic level of fear of crime and heightens mistrust of others from their Cultural Indicators Project. Similarly, Chiricos, Eschholz, and Gertz (1997) empirically tested whether exposure to media increases the fear of crime, and media effects differ depending on audience characteristics (see Choi, Han, & Lee, 2014). In this study, media consumption is measured with a single item

asking how often respondents watch the news or programs about crime. The response options ranged from 1 to 5 with a higher score indicating a greater level of consumption of crime-related media.

Fear of sexual assault. Fear of sexual assault was measured using a single item asking the extent to which they agree or disagree with the following statement: "I am afraid that I will be sexually assaulted by someone." Response options ranged from 1 = *not afraid at all* to 5 = *very afraid*.

Dependent variables. We use four dependent variables in our fear of victimization models. These variables are (1) fear of larceny/theft and (2) fear of three nonsexual violent crimes: robbery, assault, and harassment. Respondents were asked to rate their fear on a five-point Likert scale. Response options ranged from 1 = *not afraid at all* to 5 = *very afraid*. It is still controversial whether ordinal measure such as Likert scale measure can be treated as a continuous variable that allows for Ordinary Least Squares (OLS) regression to be performed. Given that much of existing research has been conducted using Likert-type scales as dependent variables (e.g., Ferraro, 1996; Lee & Hilinski-Rosick, 2012; Özaşçılar & Ziyalar, 2017) and that the current study aims to replicate the findings on the shadow hypothesis, we used the conventional fear of crime scales as dependent variables.

[Table 1 here]

Analytic Plan

We proceed in four steps. First, we examine the descriptive statistics to see if there are emerging patterns between men and women concerning fear of crime. Second, we perform hierarchical multiple regression to test the shadow hypothesis while controlling for demographic variables and other theoretically derived variables. Finally, the coefficient comparison tests

across sex for fear of sexual assault to determine if fear of sexual assault is more pronounced among women compared with men as hypothesized in the shadow hypothesis (Paternoster, Brame, Mazerolle, & Piquero, 1998).

Results

Sample Descriptive Statistics

Table 2 presents descriptive information for this sample. The number of female respondents was slightly greater than the number of male counterparts. The average age of men and women is 44 and 46 years respectively. The majority of respondents (i.e., approximately 60 percent) were married. While males earned approximately $1,660 – $2,500 dollars per month, females made about $840 – $1,660per month. The average education level of participants was high school graduation. Males (M = 3.49, SD = 1.33) tended to perceive more social and physical disorders in their neighborhoods compared to females (M = 3.14, SD = 1.30). Males also showed a higher perception of collective efficacy (M = 3.61, SD = .80) than females (M = 3.47, SD = .79). Conversely, females (M = 2.74, SD = 1.06) exhibited a higher social cohesion than males (M = 2.61. SD = 1.04). While most of the respondents did not experience victimization directly, one out of ten respondents experienced victimization indirectly. Females adopted more avoidance behaviors (M = 2.74, SD = .93) than males (M = 1.91, SD = .77).

[Table 2 here]

Bivariate Sex Differences

Table 3 presents the means and paired t-test results for fear for males and females. Consistent with prior fear research among the general population, females were significantly more afraid than males of being victims of theft, robbery, assault, and sexual assault. The greatest difference between male and female fear was for sexual assault.

[Table 3 here]

Multivariate Findings – Fear of Victimization.

Table 4 shows the results of our regression models predicting different types of fear of nonsexual violent crimes. First, our dependent variables were regressed on sex and other independent variables, but fear of sexual assault was not entered as an independent variable. The results for all Model 1 equations present that even after other variables were controlled, there were still statistically significant differences between women's and men's fear of larceny/theft, robbery, assault, and harassment. However, the results from all Model 2 equations indicate that women were less fearful of all four types of victimization than were men when fear of sexual assault was included in the models; the impact of fear of rape was positive and significant. The addition of fear of sexual assault substantially increased the explanatory power of all equations. Therefore, support for the shadow hypothesis was observed after fear of sexual assault was considered in the models.

[Table 4 here]

Table 5 provides the results of the regression models predicting fear of larceny/theft, robbery, assault and harassment for males. Demographic and control factors alone accounted for 17.5%, 18.8%, 20.8% and 18.5% of variation in each model (Model 1). Those who perceived high incivilities, had prior victimization experience, talked more about crime-related issues, took more precautionary measures, recognized lower confidence in the police, and who were more exposed to media demonstrated higher levels of fear (consumption of crime-related media is non–significant for fear of harassment).

When the fear of sexual assault was added to the statistical models, the model increases the explained variance nearly by a factor of 2 (Model 2). Incivility, indirect victimization, avoidance behavior, confidence in the police and consumption of media remained statistically

significant. Participants' perceived incivilities, indirect victimization, and consumption of media were positively and significantly associated with fear whereas individuals' avoidance behaviors, confidence in the police held influence in a negative direction. In the models for fear of property crime (larceny/theft, robbery), direct victimization exerted positive effects.

Table 6 shows the results of the regression models examining factors that influence fear of four types of crime (larceny/theft, robbery, assault, and harassment) for females. The fear of sexual assault significantly impacted all types of fear. Demographic and control factors alone explained 20.7%, 23.3%, 23.8%, 25.4% of the variance in fear of larceny/theft, robbery, assault and harassment (model 1). Those who perceived higher incivility took more precautionary measures and recognized lower confidence in the police were more likely to be afraid of crimes. Unlike the male sample model, direct and indirect victimization and consumption of media were not significant factors for females. Also, those who were old showed more fear of larceny/theft, robbery, and assault. Moreover, those who experienced direct victimization and had higher income were more afraid of larceny/theft and robbery.

In Model 2, fear of sexual assault explained an additional 17.6%, 20.8%, 28.4% and 27.6% of the variance in fear of larceny/theft, robbery, assault, and harassment. Additionally, incivility, avoidance behavior and confidence in the police remained statistically significant (confidence in the police became insignificant with harassment). Incivility held a positive influence on fear, and the other two variables showed a negative impact on fear. In the property crime, the influence of income maintained a statistically significant influence in a positive direction. This means that income was an influential factor for fear of property crime among females.

Coefficient comparison tests were conducted to examine the sex differences of the

effect of fear of sexual assault among males and females based on z scores (Paternoster et al., 1998). In comparing the coefficients for fear of sexual assault, the fear of sexual assault had stronger effects on male's fear of larceny/theft ($z = 3.13$), robbery ($z = 4.02$), and harassment ($z = 7.91$). Only for fear of assault, there was no significant difference between men and women in the impact of fear of sexual assault ($z = –0.89$).

In sum, comparing results for fear of larceny/theft, robbery, assault and harassment across Tables 5 and 6, the examination of the changes in variance and the standardized betas shows similar patterns across models. That is, fear of sexual assault predicts fear of larceny/theft, robbery, and harassment for men better than for women. The coefficient comparison tests also upheld the statistical sex differences except for fear of assault.

[Table 5 here]

[Table 6 here]

Discussion

Building on the existing research investigating the factors to account for the gender gaps in fear of crime, the aim of the current study was to examine the shadow hypothesis using a large sample of South Koreans. More specifically, this study assessed the extent to which fear of sexual assault was related to larceny/theft, robbery, assault, and harassment differently among males and females. Overall, women were more afraid of violent crime than men, and the largest difference between males and females in fear was a fear of sexual assault (Fisher & Nasar, 1992; Fisher & Sloan, 2003). Our findings indicate that demographic and control variables have little impact on fear of larceny/theft, robbery, assault and harassment. When the impact of fear of sexual assault was entered, the amount of explanatory power of the model increased, which presents strong evidence in favor of the shadow hypothesis (Ferraro, 1996; Warr, 1984). The

findings, however, showed that fear of sexual assault mattered more for males. Fear of sexual assault was a more important predictor of other types of fear among males than among females. The finding that fear of sexual assault is important not only for females but males is not new (Lane & Fisher, 2009; Lane & Meeker, 2003; Özaşçılar & Ziyalar, 2017). This could be due to a lower generalized fear of crime among men. While men have a low fear of crime in general, when fear of sexual assault exists among men, it has a large and significant influence on the fear of other crimes.

The findings of the current study also complement previous research examining the gender differences in the predictors of fear of crime. Notably, perceived incivilities and avoidance behavior were the only control variables that consistently and significantly affected fear of crime for both males and females (Brunton-Smith, 2011; Brunton-Smith & Sturgis, 2011; Lee & Hilinski-Rosick, 2012). Another noteworthy finding is that the confidence in the police also had a statistically significant influence on the other three fears, except fear of harassment. For both males and females, those who engaged in more prevention measures perceived higher incivilities and had lower confidence in the police were more likely to be afraid of crimes. While indirect victimization and, consumption of media were statistically significant factors for fear of four types of crime, age had a positive effect on fear of larceny/theft, robbery, and assault for females. That is, older females were more likely to fear these criminal offenses than younger females. For fear of property crime (larceny/theft, robbery), some males who had experienced victimization directly tended to be more afraid of crimes, and females who had higher incomes tend to be fearful of property crime. The consistency of these findings suggests a great similarity in fear of crime within this sample and samples from previous research.

Considering that fear of sexual assault is an important factor that accounts for fear of

other types of victimization not just among females and males, there should be educational efforts to help individuals to be more aware of the prevalence of sexual violence and to learn how to reduce offending behaviors. For instance, women and men can be taught to intervene in activities and situations to prevent sexual assault. Specifically, the implementation of bystander education programs can be effective to help individuals to identify high-risk situations (e.g., alcohol consumption at a college party). Research has shown that bystander intervention policies have helped individuals to become more engaged in dangerous scenarios (Katz & Moore, 2013; McMahon, Palmer, Banyard, Murphy, & Gidycz, 2017). If such programs and training are more readily available, we can reduce the number of incidence of sexual assault and subsequently, lower levels of fear of sexual assault.

This study is not exempt from limitations. First, this study could not include all variables that Ferraro (1995, 1996) used partially due to the secondary nature of the data set. Especially, the current paper could not include a measure for the perceived risk of crime because the KNCVS did not collect this information. Considering the important connection between perceived risk and fear of crime (Fisher et al., 1998; Hilinski, 2009), the absence of this measure in the model can be critical. Unfortunately, data used for this study were not specifically developed for examination of the shadow of sexual assault hypothesis, so future research could include more reliable scales to unpack the relationship between fear of sexual assault and fear of other crimes. Second, the current study could not consider the sexuality of the individuals who participated in the survey. Some researchers have paid attention to the fear of crime among men who are homosexual and found that there is a notable gap in fear depending on one's sexuality (e.g., Meyer & Grollman, 2014). Additional studies need to investigate the role of sexuality in men's fear of crime. Third, the way that people acquire the fear of crime can be more dynamic

and more interactive than the current measures can capture. There have been noticeable efforts to develop better measures of fear of crime by considering the victim-offender relationship, perpetrator characteristics, the frequency of the fear of crime, and fear in specific locations (Farrall & Gadd, 2004; Higgins, Ricketts, & Vegh, 2008; Wilcox et al., 2006). Some researchers urged future researchers to find new ways to measure men's fear of crime as men may respond survey questions in dishonest ways and do not express their fear due to expected gender roles in society (Lane, 2013; Sutton & Farrall, 2005). The refinement of the measurement of fear of crime could provide an opportunity to test the shadow hypothesis more adequately. We call for future research to examine the shadow hypothesis with more diverse and refined measures.

Despite some limitations, this study adds to the study of fear of crime in three ways. First, the findings of this research replicate and qualify previous findings on the shadow thesis and highlight the mechanisms of falisification proposed by Popper (1970) to advance science. Second, given there is little research with Asian samples (Chui et al., 2013; Zhang, Messner, Liu, & Zhuo, 2009), the current study can fill knowledge gaps by using data from a nationally representative South Korean sample. Third, the empirical literature has documented many variables to be significant in driving the fear of crime since Ferraro's (1996) study, and examples of previous studies on the shadow hypothesis failed to consider these variables in their analyses (Hale, 1996; Lane et al., 2014). For example, many researchers have reported that crime-related media consumption and the trust in police can be important factor that shapes fear of crime (Eschholz et al., 2003; Kohm, Waid-Lindberg, Weinrath, Shelley, & Dobbs, 2012; Skogan, 2009), and the current study included these variables to better estimate the independent impact of fear of sexual assault on fear of different crimes. Studies like ours and future ones can help researchers and policymakers to have a better understanding of fear of crime.

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Table 1

Variables Used in Ferraro's Models and in the Current Study: Fear of Specific Crimes and Fear of Rape

Types of Variables	Fear of Specific Crimes	
	Ferraro's Models	Current Study
Ecological Characteristics		
Official crime	County-level UCR rates of murder, robbery, assault, burglary, and auto theft	Not included in models
Region of country	Region of country where respondent lived	Not included in models
Type of community	Metropolitan/non-metropolitan community where respondent lived	Not included in models
Neighborhood Characteristics		
Incivility	Perceptions of the degree of seriousness of physical and social disorders in respondent's neighborhood	Perceptions of the degree of seriousness of physical and social disorders in respondent's neighborhood
Presence of crime watch	Crime watch in respondent's neighborhood	Not included in models
Social Bond	Not included in models	The sense of belonging together
Collective Efficacy	Not included in models	The sense of willingness to participate in solutions for community problem
Official sexual assault rate	Country-level UCR sexual assault rate	Not included in the models
Personal Characteristics		
Age	Respondent's years since birth	Respondent's years since birth
Sex	Sex of respondent	Sex of respondent

Table 1

Variables Used in Ferraro's Models and the Current Study: Fear of Specific Crimes and Fear of Rape (Continued)

Types of Variables	Fear of Specific Crimes	
	Ferraro's Models	Current Study
Income	Not included in models	Monthly Income level of respondent
Marital Status	Not included in models	Married, Divorced or Bereaved
Education	Schooling completed	Schooling completed
Direct Victimization	Been the victim of any crime in the past year	Been the victim of any crime in the past year
Indirect Victimization	Close friend or relative had been the victim of any crime in the past year	Knew any close individual who had been victimized in the past year
Perceived Risk	Likelihood of being a victim of crime	Not included in models
Avoidance Behavior	Engaged in avoidance and defensive behaviors	Engaged in avoidance behaviors
Confidence in the Police	Not included in the models	Confidence toward the police
Consumption of Media	Not included in the models	Frequency of being exposed to the crime-related media program
Fear of sexual assault	Fear of being sexually assaulted	Fear of being sexually assaulted

Table 1

Variables Used in Ferraro's Models and the Current Study: Fear of Specific Crimes and Fear of Rape (Continued)

Types of Variables	Fear of Specific Crimes	
	Ferraro's Models	Current Study
Dependent variables		
Fear of non-personal Crimes	Fear of (1) having a car stolen and (2) being burglarized while away, (3) being cheated/conned, (4), vandalized, and (5) panhandled	Fear of having property stolen
Fear of nonsexual crimes/ Fear of personal crimes	Fear of being (1) murdered, (2) robbed, (3) assaulted, and (4) burglarized while at home	Fear of being (1) robbed, (2) assaulted, and (3) harassed
Fear of sexual crime	Does not apply	

Table 2
Descriptive Statistics for Variables (*N* = 16,703)

	Minimum	Maximum	Women (*N* = 8,715) *M* (*SD*)	Men (*N* = 7,988) *M* (*SD*)
Age (male)	14	95		43.95
Age (female)	14	109	45.89	
Income	1	10	3.3 (1.80)	4.5(1.96)
Married (%)	0	1	59.4	64.0
Divorced or Bereaved (%)	0	1	18.5	6.0
Education	1	6	3.14 (1.37)	3.49 (1.33)
Incivility	1	5	2.39 (.73)	2.40 (.71)
Social Cohesion	1	5	2.74 (1.06)	2.61 (1.04)
Informal Control	1	5	3.47 (.79)	3.61 (.80)
Direct Victimization (%)	0	1	5.6	5.8
Indirect Victimization (%)	0	1	14.5	14
Avoidance Behavior	1	5	2.74 (.93)	1.91 (.77)
Confidence in the Police	1	5	3.27 (.74)	3.27 (75)
Crime-related Media Consumption	1	5	3.06(1.07)	3.22 (1.09)

Table 3
Means and Standard Deviations for Fear of Victimization by Sex

	Women (N = 8,715)	Men (N = 7,988)	t-test
	M (SD)	M (SD)	
Type of Fear			
Larceny/theft	2.42 (.99)	2.11 (.92)	.31***
Robbery	2.40 (.98)	2.05 (.89)	.35***
Assault	2.45 (1.01)	2.06 (.90)	39***
Harassment	2.23 (.98)	1.84 (.84)	.39***
Sexual Assault	2.36 (1.06)	1.74 (.81)	.62***

***p < .001.

Table 4

Predicting the Fear of Victimization for Combined Sample: Nonsexual Violent Crimes

Independent Variable	Larceny/theft		Robbery		Assault		Harassment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	b (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
Age	.001 (.001)	.004 (.001)***	.001 (.001)	.004 (.001)***	.001 (.001)	.004 (.001)***	–.001 (.001)***	.003 (.001)***
Income	.04 (.01)***	.03 (.01)***	.04 (.01)***	.02 (.01)***	.03 (.01)**	.01 (.01)	.04 (.01)***	.02 (.01)***
Married	–.09 (.04)*	–.07* (.03)	–.10 (.04)**	–.07 (.03)*	–.06 (.04)	–.03 (.03)	–.13 (.04)**	–.10 (.03)***
Divorced or Bereaved	–.05 (.05)	–.03 (.04)	–.05 (.05)	–.02 (.04)	–.02 (.05)	.01 (.04)	–.08 (.05)	–.05 (.04)
Education	–.03 (.01)**	–.03 (.01)***	–.02 (.01)*	–.03 (.01)***	–.02 (.01)	–.02 (.01)*	–.01 (.01)	.001 (.01)
Incivility	.25 (.02)***	.14 (.01)***	.24 (.02)***	.12 (.01)***	.23 (.02)***	.10 (.01)***	.22 (.01)***	.002 (.01)***
Social Cohesion	.01 (.01)	–.01 (.01)	.002 (.01)	.002 (.01)	–.02 (.01)***	–.02 (.01)*	–.001 (.01)	–.001 (.01)
Collective Efficacy	–.001 (.02)	.01 (.01)	–.02 (.02)	–.01 (.01)	–.01 (.02)	.002 (.01)	–.01 (.01)	.002 (.01)
Direct Victimization	.24 (.05)***	.20 (.04)***	.18 (.04)***	.13 (.04)***	.15 (.03)**	.09 (.04)*	.17 (.04)	.11 (.03)**
Personal Indirect Victimization	.21 (.03)***	.19 (.03)***	.18 (.03)***	.15 (.03)***	.15 (.03)***	.12 (.02)***	.03 (.03)	.11 (.01)***
Avoidance Behavior	.33 (.01)***	.15 (.02)**	.35 (.01)***	.16 (.01)***	.37 (.01)***	.15 (.01)***	.34 (.01)***	.11 (.01)***
Confidence in the Police	–.08 (.02)***	–.03 (.01)***	–.09 (.02)***	–.04 (.01)**	–.09 (.02)***	–.03 (.01)**	–.08 (.01)***	–.03 (.01)*
Crime-related Media Consumption	.05 (.01)***	.04 (.01)***	.05 (.01)***	.03 (.01)***	.05 (.01)***	.03 (.01)***	.04 (.01)***	.02 (.01)**
Female	.08 (.02)**	–.11 (.02)***	09 (.02)***	–.12 (.02)***	.11 (.02)***	–.13 (.02)***	.12 (.02)***	–.08 (.02)***
Fear of Sexual Assault		.51 (.01)***		.55 (.01)***		.63 (.01)***		.64 (.01)***
Constant	.88 (.10)***	.43 (.09)***	.91 (.10)***	.42 (.09)***	.92 (.10)***	.40 (.09)***	.74 (.10)***	.17 (.08)*
Model F	134.60***	314.22***	150.65***	405.48***	158.91***	518.30***	156.26***	612.34***
Adjusted R^2	.206	.394	.225	.457	.234	.522	.231	.560

Note. *SE* = standard error.
*p < .05. **p < .01. ***p < .001.

Table 5

Predicting the Fear of Victimization for South Korean Males: Nonsexual Violent Crimes

Independent Variables	Larceny/theft		Robbery		Assault		Harassment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	b (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
Age	–.002 (.00)*	.001 (.001)	–.002 (.001)*	.001 (.001)	–.003 (.001)**	.001 (.001)	.85 (.001)***	.001 (.001)
Income	.01 (.00)	.005 (.006	.01 (.006)	.003 (.005)	.01 (.006)	.003 (.005)	.02 (.006)**	.01 (.005)*
Married	.10 (.04)*	.015 (.03)	.07 (.04)	–.03 (.04)	.1 (.04)*	–.007 (.04)	.09 (.04)*	–.03 (.03)
Divorced or Bereaved	.34 (.06)	–.042 (.05)	.03 (.06)	–.06 (.05)	.08 (.06)	–.007 (.05)	.07 (.05)	–.03 (.04)
Education	–.003 (.01)	–.008 (.009)	–.001 (.01)	–.006 (.008)	–.008 (.01)	–.01 (.008)	.02 (.009)*	.02 (.007)*
Incivility	.24 (.01)***	.15 (.02)***	.23 (.02)***	.12 (.02)***	.22 (.02)***	.11 (.01)***	.18 (.02)***	.06 (.01)***
Social Cohesion	.005 (.01)	–.007 (.01)	.01 (.01)	–.004 (.01)	–.01 (.01)	–.02 (.01)*	.005 (.01)	–.01 (.009)
Informal Control	–.007 (.01)	.01 (.02)	–.02 (.02)	.00 (.01)	–.02 (.02)	.006 (.01)	–.03 (.02)	.00 (.01)
Direct Victimization	.25 (.04)***	.26 (.04)***	.11 (.05)*	.12 (.04)**	.09 (.05)	.1 (.04)**	.01 (.04)	.03 (.03)
Indirect Victimization	.24 (.04)***	.26 (.03)***	.18 (.03)***	.21 (.03)***	.2 (.03)***	.22 (.03)***	.07 (.03)*	.1 (.02)***
Avoidance Behavior	.36 (.02)***	.15 (.01)***	.39 (.02)***	.16 (.01)***	.42 (.02)***	.19 (.01)***	.38 (.01)***	.11 (.01)***
Confidence in the Police	–.07 (.02***	–.03 (.01)*	–.06 (.02)***	–.03 (.01)*	–.08 (.02)***	–.04 (.01)**	–.06 (.02)***	–.02 (.01)
Crime-related Media Consumption	.05 (.01)**	.05 (.009)***	.04 (.01)**	.04 (.008)***	.05 (.02)***	.05 (.008)***	.02 (.01)	.02 (.007)*
Fear of Sexual Assault		.54 (.01)***		.6 (.01)***		.62 (.01)***		.697 (.01)***
Constant	.87 (.12)***	.34 (.11)***	.90 (.11)***	.32 (.001)**	.92 (.11)***	.32 (.1)**	.85 (.1)***	.17 (.08)*
Model F	91.16***	221.34***	99.47***	299.57***	112.03***	334.75***	96.00***	479.24***
Adjusted R^2	.175	.359	.188	.431	.208	.459	.185	.550

Note. *SE* = standard error.
*p < .05. **p < .01. ***p < .001.

Table 6

Predicting the Fear of Victimization for South Korean Females: Nonsexual Violent Crimes

Independent Variable	Larceny/theft		Robbery		Assault		Harassment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	b (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)	*b* (*SE*)
Age	–.001 (.002)	.004 (.002)*	.000 (.002)	.006 (.002)**	–.003 (.002)	.005 (.002)**	–.008 (.002)***	–.001 (.002)
Income	.04 (.01)**	.04 (.01)**	.04 (.01)**	.04 (.01)**	.02 (.02)	.02 (.01)	.03 (.01)	.02 (.01)*
Married	–.11 (.08)	–.02 (.07)	–.15 (.08)	–.04 (.06)	–.15 (.08)	–.02 (.06)	–.3 (.08)***	–.18 (.06)**
Divorced or Bereaved	.003 (.08)	.06 (.07)	.005 (.08)	.07 (.07)	–.08 (.09)	.01 (.07)	–.17 (.08)*	–.09 (.06)
Education	–.03 (.02)	–.04 (.02)	–.007 (.02)	–.02 (.02)	–.01 (.02)	–.03 (.02)	–.03 (.02)	–.04 (.02)*
Incivility	.27 (.03)***	.14 (.03)***	.27 (.03)***	.13 (.03)***	.25 (.03)***	.08 (.03)**	.26 (.03)***	.1 (.03)***
Social Cohesion	–.03 (.03)	–.01 (.02)	–.06 (.03)*	–.04 (.02)	–.08 (.03)**	–.06 (.02)**	–.04 (.03)	–.01 (.02)
Collective Efficacy	.02 (.03)	–.004 (.03)	–.001 (.03)	–.02 (.03)	.02 (.03)	–.007 (.03)	.002 (.03)	–.03 (.02)
Direct Victimization	.22 (.08)**	.18 (.07)*	.16 (.08)*	.12 (.07)	.15 (.09)	.09 (.07)	.14 (.08)	.08 (.06)
Personal Indirect Victimization	.07 (.06)	.01 (.06)	.11 (.06)	.05 (.05)	.095 (.07)	.02 (.05)	.007 (.06)	–.07 (.05)
Avoidance Behavior	.3 (.03)***	.18 (.02)***	.32 (.03)***	.18 (.02)***	.34 (.02)***	.17 (.02)***	.3 (.03)***	.14 (.02)***
Confidence in the Police	–.15 (.03)***	–.08 (.03)**	–.16 (.03)***	–.07 (.03)**	–.17 (.03)***	–.07 (.03)**	–.11 (.03)***	–.01 (.02)
Crime-related Media Consumption	.03 (.02)	–.003 (.02)	.05 (.02)**	.02 (.02)	.05 (.02)*	.004 (.02)	.06 (.02)**	.01 (.01)
Fear of Sexual Assault		.47 (.02)***		.51 (.02)***		.64 (.02)***		.6 (.02)***
Constant	1.37 (.23)***	.52 (.20)*	1.29 (.23)***	.36 (.2)	1.66 (.24)***	.49 (.19)*	1.62 (.23)***	.52 (.18)**
Model F	27.35***	76.87***	40.94***	97.32***	42.09***	72.45***	44.35***	136.45***
Adjusted R^2	.207	.383	.233	.441	.238	.522	.254	.530

Note. *SE* = standard error.
*p < .05. **p < .01. ***p < .001.