



## Fear of crime among citizens of Turkey

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### ABSTRACT

Most fear of crime research has occurred in Western countries. The following analysis presents an integrated model of fear of crime for a randomly selected sample of 6,713 individuals from urban and rural parts of Turkey. Consistent with previous research, the victimization model, disorder model, and community concern/social control model predicted fear of crime among Turkish citizens. The integrated model of fear of crime, however, functioned differently in the Turkish context based on gender and residential locale. Increased age lowered the level of fear for women but not for men, and the positive impact of previous victimization on fear of crime was significantly more pronounced among females. Increased education reduced fear for urban dwellers, but not for rural residents. While age did not have a significant impact on fear for rural residents, in contrast to the vulnerability hypothesis, it reduced the level of fear for urban residents.

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### Introduction

Fear of crime has received significant attention from researchers and policymakers over the past four decades (Schafer, Huebner, & Bynum, 2006). This subject gained much attention in the West, and research on fear of crime had almost exclusively been concentrated in the United States and other English-speaking nations. Moreover, in line with growing interest in cross-cultural research in the field of criminology, recent studies had also examined fear of crime in European countries such as Belgium (De Donder, Verte, & Messelis, 2005; Pauwels & Pleysier, 2005), Finland (Salmi, Gronroos, & Keskinen, 2004), and Italy (Miceli, Roccato, & Rosato, 2004). Even though the cultural context in which crime is defined and people act is vital to understanding crime, criminal behavior, and its impact (Robertson, 2006), only a limited number of studies investigated fear of crime in non-Western countries (Adu-Mireku, 2002; Dammert & Malone, 2006; Hwang, 2006; Johnson, 2006). Consequently, the validity of existing fear of crime models and related findings becomes questionable, as current knowledge may be limited or even biased because of the near exclusive focus on the United States, Canada, and other developed European nations (Adu-Mireku, 2002).

In this respect, the analysis of fear of crime in Turkey provided an opportunity to test fear of crime models to explain the variation of fear among individuals in a different social and cultural context. Like other

Middle Eastern countries in the region, Turkey has a tradition of strong family and community ties; thus, individual behavior is subject to relatively higher social control exercised by family, friends, and religion. Furthermore, individualism is not promoted in Turkish society as much as it is in Western societies. Leaving home before marriage is not a common practice, and children live with their families until they become breadwinners themselves, which generally coincides with university graduation or completing obligatory military service for those who quit school earlier. Contextually, Turkey lies in the middle of Islamic and Western societies, both geographically and culturally (Ozbay & Ozcan, 2006). In a society with a blend of Islam and secularism, it thus becomes interesting to explore how individual and community characteristics as well as public level control shape of fear of crime among Turkish citizens.

Researchers have developed several distinct yet related analytical models to identify factors that facilitated and inhibited fear of crime (McGarrell, Giacomazzi, & Thurman, 1997; Taylor & Hale, 1986). Generally conceptualized as an individual reaction to perceived likelihood of victimization, fear of crime is driven by both individual and contextual factors (Bursik & Grasmick, 1993). Drawing upon various theoretical insights, victimization, disorder, and community concern/control models have emerged as the most prominent explanations of fear of crime (Taylor & Hale, 1986).<sup>1</sup> Of the three models, the victimization model mainly focused on social demographic characteristics of individuals (or the position of an individual in social space; Garofalo, 1981), whereas the disorder model identified (cognitive and/or objective) physical and social characteristics of communities as significant determinants of fear of crime. The community concern model, on the other hand, prioritized the relationships among

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community residents and local police and other public service providers as significant predictors of fear of crime (Bursik & Grasmick, 1993; McGarrell et al., 1997; Skogan & Maxfield, 1981; Taylor & Hale, 1986).

Given growing evidence regarding the relevance of the latter two models to the variation of fear of crime across individuals, neighborhoods, and communities (McGarrell et al., 1997; Renauer, 2007; Skogan, 2006), research on fear of crime also lends support to the importance of the community policing movement and its potential impact on fear as a policy implication. In addition to crime control, community policing attempts to increase police and government responsiveness and involves the formation of police and community partnerships to address the issues of disorder and fear of crime (McGarrell et al., 1997). Increased interaction among police and community members and institutions is thus expected to reduce fear of crime mainly through increased police presence, responsiveness, and citizen satisfaction with police services (McGarrell et al., 1997; Thurman, Zhao, & Giacomazzi, 2001; Trojanowicz, 1986; Zhao, Scheider, & Thurman, 2002). In this regard, given the ongoing process of the European Union membership of Turkey and the corresponding emphasis on democratic and community policing, the results of the current study might also offer significant policy implications for law enforcement in Turkey. To the extent that the results concur with the findings produced in the larger fear of crime research literature in the West, the law enforcement authorities in Turkey might consider fear reduction and prevention programs that have been implemented in the West.

It is also important to note that the Turkish National Police (TNP) and Turkish Gendarmerie undertake law enforcement in Turkey. The TNP organization is comprised of 200,000 employees and serves through regional centers across all eighty-one provinces under the command of the General Directorate in the capital, Ankara. While the TNP have jurisdiction in urban centers in each province, the gendarmerie is responsible for the countryside (Bahar & Fert, 2008). Although official crime rates in Turkey rank lowest among several European countries (i.e., France, Germany, Belgium, and the United Kingdom), there has been a significant increase in recorded crime rates especially since 2004 (Atasoy, Baskan, & Ziyalar, 2006). Although recent increases in crime rates have placed the criminal justice system firmly on the political agenda (Bahar & Fert, 2008), there was a dearth of systematic analyses of the correlates and the extent of fear of crime in Turkey. The following analysis was intended to identify the facilitators and inhibitors of fear of crime among the citizens of Turkey based on a random sample of 6,713 urban and rural residents. Drawing upon victimization, disorder, and community concern models of fear of crime, an integrated model was estimated to explain fear of crime in Turkey. The analysis also sought to extend previous research on fear of crime by examining whether the cluster of variables representing these three different models function differently according to gender and residential locale by estimating separate models for males and females and for urban and rural residents. Research limitations and the implications for policy and future research are discussed.

## Models of fear and crime

### *The victimization model*

Proponents of the victimization model theorize that fear of crime is the result of direct and indirect experience of criminal victimization (Skogan & Maxfield, 1981). Although early work on fear of crime posited a positive relationship between being a victim of crime and fear (Skogan & Maxfield, 1981), recent studies revealed mixed findings about the relationship between direct victimization and fear of crime (Gibson et al., 2002; McGarrell et al., 1997). While some researchers indicated previous victimization as a significant predictor of fear of crime (Bursik & Grasmick, 1993; Skogan, 1986; Skogan & Maxfield, 1981), others reported that criminal victimization was either unrelated or marginally related to fear of crime (Liska, Sanchirico, & Reed, 1988; McGarrell et al.,

1997). Moreover, research also documented that those least likely to be victimized reported higher levels of fear, whereas those most likely to be victimized expressed lower levels of fear (Bursik & Grasmick, 1993; Garofalo & Laub, 1978). Thus, the indirect victimization model was developed to account for these inconsistent and paradoxical findings.

According to the indirect victimization model, those who perceive themselves as physically and socially vulnerable to crime will have higher levels of fear. The high levels of fear found among women and the elderly, hence, was suggested to be a result of these groups' perceptions of greater physical vulnerability to victimization, although both groups were generally found to be least likely to be victimized (Taylor & Hale, 1986; Will & McGrath, 1995). Higher levels of fear among people with less income and a positive relationship between race and fear of crime, on the other hand, was attributed to the fact that these groups were at heightened social vulnerability (Covington & Taylor, 1991; Skogan & Maxfield, 1981). Finally, the indirect victimization model suggested that those who are well entrenched in social networks expressed higher level of fear of crime as they were more likely to learn about others' victimizations in their vicinity (but see Bursik & Grasmick, 1993).<sup>2</sup>

### *The disorder model*

The disorder or incivility model posits that the perception of high levels of physical and social disorder is related to higher levels of fear of crime (Bursik & Grasmick, 1993; Covington & Taylor, 1991; Greenberg, 1986; Lewis & Salem, 1986; Markowitz, Bellair, Liska, & Liu, 2001; McGarrell et al., 1997; Skogan, 1990; Taylor & Hale, 1986). Physical disorder mainly refers to the appearance of a community such as trash, graffiti, vandalism, abandoned buildings, and broken streetlights, whereas social disorder is related to situations such as public drinking, panhandling, prostitution, loud parties, and drug dealing in a community (LaGrange, Ferraro, & Supancic, 1992; Ross & Jang, 2000; Skogan, 1990). Physical and social disorder marks a breakdown in both norms of behavior and social control in the community (McGarrell et al., 1997; Perkins & Taylor, 1996; Skogan & Maxfield, 1981). Prevailing disorder in the neighborhood leads law-abiding residents to think that nobody in the neighborhood cares about what is going on in their environment, and this makes them withdraw from public life as they assume that the neighborhood is disorganized and not safe (Lewis & Salem, 1986).

Skogan (1990) provided a strong argument about physical and psychological withdrawal from neighborhood life in times of ongoing disorder and crime. Residents' actual movements from the community, triggered by disorder and fear, negatively influence the housing market, and prevent investments in the neighborhood. Psychological isolation, on the other hand, undermines mutual responsibility among the residents, weakens informal social control, reduces participation in neighborhood affairs, and thus foreshadows a general decline in the community's organizational and political capacity (Skogan, 1990, p. 13). Using data collected from 2,482 randomly selected residents in Illinois, Ross and Jang (2000) reported that prevailing disorder in the neighborhood increased individuals' levels of mistrust and fear of victimization. Examining three waves of panel data from the British Crime Survey, Markowitz et al. (2001) pointed to a feedback loop in which decreases in cohesion increased disorder, and in turn, disorder increased fear, further decreasing cohesion across 151 neighborhoods (see also McGarrell et al., 1997). Most recent studies on the disorder-crime nexus also demonstrated that disorder elicits more fear than crime (Kelling & Coles, 1996) and that disorder has strong direct, indirect, and total effects on crime, even with collective efficacy being controlled (Xu, Fiedler, & Flaming, 2005).

### *The community concern model*

Closely related to the disorder model, the community concern model argues that increased concern about neighborhood decline contributes

to fear of crime (McGarrell et al., 1997). Specifically, citizens who were concerned about neighborhood deterioration and who found the neighborhood less satisfying exhibited more fear (Taylor & Hale, 1986). According to Lewis and Salem (1981, p. 418), concern about the community emerged due to a breakdown in commonly accepted values and social control in the community. Lewis and Salem (1981), however, also argued that erosion in common values and social control (or “social disorganization”) did not heighten fear in the communities where the individuals were satisfied and attached to their neighborhood, because they knew the area and could anticipate possible risks. As empirical research also evinced (i.e., Hunter & Baumer, 1982; Taylor, Gottfredson, & Brower, 1984), social integration had a negative impact on fear of crime. In this regard, home ownership was found to be negatively related to fear of crime because it represented integration and investment in the neighborhood (Taylor & Hale, 1986).

The second factor capable of dampening fear of crime is what Lewis and Salem (1981, p. 418) called “provincialism.”<sup>3</sup> Similar to the notion of public level control suggested by Bursik and Grasmick (1993), provincialism basically referred to the ability of the local community and organizations to influence public service providers (i.e., municipalities and public-private decision making agencies) in order to allocate resources to control neighborhood crime and disorganization. This also included the relationship between the neighborhood residents and the local police department. Recent research reported direct and indirect negative impacts of the perception of police satisfaction (Box, Hale, & Andrews, 1988; Scheider, Rowell, & Bezdikian, 2003); police effectiveness (Box et al., 1988; Hawdon, Ryan, & Griffin, 2003; McGarrell et al., 1997; Renauer, 2007); police presence (Marvell & Moody, 1996; Zhao et al., 2002); and police visibility (Salmi et al., 2004)<sup>4</sup> on the fear of crime. Although an overall model of fear of crime demands incorporating both informal and formal social control perceptions into a single model with other indicators (victimization and disorder) of fear of crime, only a few studies estimated such integrated models.

Taylor and Hale (1986) examined the effects of subjective beliefs about indirect victimization, disorder, and community concern on fear of crime and found that each model independently explained about 10 percent of variance in fear. Covington and Taylor (1991) also reported that each of the indirect victimization, subcultural diversity, disorder, and community concern models predicted fear of crime. McGarrell et al. (1997) found that home ownership, social integration, and perceptions of government responsiveness (conceptualized as a combined measure of government, police, and neighborhood responsiveness) were negatively related to fear of crime after controlling for individual demographics, perceptions of disorder, and informal social control. In a recent study, Renauer (2007) reported that while local government responsiveness did not have a significant impact on fear of crime, social cohesion, fear of police encounters, and police effectiveness explained the variation of fear of crime when the impact of disorder and individual demographics were controlled. Clearly, while certain individual characteristics, prior victimization, and neighborhood disorder facilitate fear of crime, investing in the neighborhood (home ownership), neighborhood integration, and satisfaction with law enforcement services can inhibit fear of crime as potential measures of social integration and informal and formal social control in the community.

Much prior research and theorizing on fear of crime, however, focused on urban places, and relatively little is known about patterns in rural areas (Nofziger & Williams, 2005). Yet, the dynamics of fear, as Baumer (1985) suggested, might be contingent on social context. Using data from a national sample, Baumer (1985) found that age did not have a significant impact on fear in small towns and rural areas, while it had a significant positive impact on fear in suburbs and cities in the U.S. Similarly, Lebowitz (1975) also found that while older people reported higher levels of fear in urban areas, there was not a significant difference by age in rural places (see Yin, 1980 for a related

discussion). According to Baumer (1985), this might indicate that age differentiates fear under conditions of high crime such as those that exist in most urban environments (see Maxfield, 1984).

Additionally, recent studies that tested integrated fear of crime models also highlighted gender differences in the influence that explanatory variables had on fear (C. A. Franklin & Franklin, 2009; Schafer et al., 2006). Specifically, Schafer et al. (2006) found that age and race had a significantly different impact on perceived safety reported by males and females. C.A. Franklin and Franklin (2009) also showed that the impact of age, race, and income on reported worry of victimization significantly differed depending on respondent's gender. Differences in gender role socialization, social control, societal oppression of women, and related feminine notions of female physical and social vulnerability (i.e., fear of rape and sexual assault; see Ferraro, 1996; Fisher & Sloan, 2003; Pain, 2001) were proposed as potential reasons why certain explanatory variables (e.g., age and race) might have gender dependent effects on fear (see C. A. Franklin & Franklin, 2009 for a related discussion).

The purpose of the analysis presented subsequently was three-fold:

1. To identify facilitators and inhibitors of fear of crime in Turkey. The analysis attempted to test the generalizability of an integrated model of fear of crime with Turkish citizens, although the model was able to incorporate only a limited number of constructs from the disorder and community concern models. Given the almost culture-specific conceptualization of fear of crime literature in the West, investigating the extent of and the predictors of fear of crime in Turkey offered the opportunity to test the models in a comparative cultural context.
2. Two additional models were estimated to see whether the same facilitators and inhibitors of fear of crime held separately for urban and rural residents and for males and females. This represented an attempt to extend previous research by examining whether integrated models of fear functioned differently according to both gender and residential locale.
3. The analysis also sought to extend previous research by considering the impact of previous contact with police in each model.

## Method

### Data and sample

This study utilized data gathered from respondents to the Life Satisfaction Survey (LSS), conducted in Turkey December 4–14, 2004 by the Turkish Statistical Institute. A total of 6,714 individuals aged eighteen years and over nested in 2,867 countrywide households were selected for in-person interviews using a two-stage stratified cluster sampling method. Of these 2,867 households, 886 (31 percent) were substituted because of rejection and other reasons (i.e., failure to contact at two attempts, sickness, immigration). Overall, interviewers were unable to contact only 624 (8.5 percent) individuals in these randomly selected main and substitute households. Missing values on fear of crime and law enforcement responsiveness variables for one of the respondents reduced the sample size to 6,713. All of the following analyses were conducted on this final number of respondents.

Even though it was difficult to determine whether the respondents significantly differed from the country population, the sample characteristics could be compared to the 2000 census data. The sample approximated the country population in Turkey across several key indicators, but slightly underrepresented education level and overrepresented females and urban population (Turkish Statistical Institute/TUIK, 2007). Considering the adequate response rate, however, the following analysis and related findings can be regarded as generalizable to the full Turkish population.

## Measures<sup>5</sup>

### Demographic characteristics

In accordance with the vulnerability (physical and social) thesis suggested by the victimization model, women and older citizens were expected to report higher levels of fear because of their greater physical vulnerability to crime. Similarly, a significant relationship between social class and fear of crime was predicted because of the heightened social vulnerability of the lower class. Thus, gender (1 = male, 2 = female) and age (respondent's age in years) were included as indicators of physical vulnerability. For social vulnerability, both education (from 1 = no school to 6 = graduate) and monthly household income (from 1 = 0 to 319 Turkish liras/TL to 6 = 1,166 TL and more) were included to indicate social class. Living in an urban area was also found to be a significant facilitator of fear of crime (Dammert & Malone, 2006; Kristjansson, 2007). In line with social disorganization theory and its recent interpretations (Bursik & Grasmick, 1993; Markowitz et al., 2001; Sampson & Groves, 1989), several characteristics of urban places, such as population density; residential mobility; poor social integration; and ethnic and income heterogeneity were suggested as potential sources of fear among urban dwellers (Adams & Serpe, 2000; Garofalo & Laub, 1978; Miceli, et al., 2004; Taylor & Hale, 1986). In this regard, living in an urban area (1 = rural, 2 = urban) was predicted to positively relate to fear of crime.

### Victimization

Several studies found that previous victimization was positively related to fear of crime (Garofalo, 1979; Skogan & Maxfield, 1981), whereas others argued that the relationship was either minimal or not significant (McGarrell et al., 1997). On the other hand, some other researchers revealed a conditional impact of previous victimization depending on race (Chiricos, Eschholz, & Gertz, 1997) or type of crime (Rountree, 1998). Although inconsistent, given some evidence of the impact of previous victimization on fear of crime, it was included in the analysis. The measure of previous victimization was based on whether the respondent reported that he or she had been a victim of the following offenses in the year 2004: robbery, purse snatching, threats, assault, harassment by phone, or of any other unspecified offense (0 = no, 1 = yes). Overall, 21 percent of the respondents reported they had been victimized in 2004.

### Perceived characteristics of the neighborhood<sup>6</sup>

#### Disorder

Previous research generally measured neighborhood disorder based on several survey items that could account for both physical and social dimensions of disorder. Unfortunately, most of these measures were not available in the LSS survey. Respondents were asked, however, whether they had the problem of noise coming from their neighbors and their neighborhood. These two items were used to measure perceived disorder. The disorder scale had a modest alpha of .48. Exploratory factor analysis with varimax rotation method indicated that these items were associated with a single latent construct (factor loadings > .79). Although noise represented a limited component of disorder, a number of previous studies (i.e., Lee & Ulmer, 2000; McGarrell et al., 1997; Ross & Jang, 2000) used "noise" as an indicator of disorder (among other indicators). In fact, "...the number of urban respondents who report that they are 'bothered' by crime in their neighborhood is actually less than the number who note problems with traffic or noise" (Bureau of the Census as cited in Bursik & Grasmick, 1993, p. 90). Consequently, the noise scale was included and was predicted to positively relate to fear of crime.

### Neighborhood integration

Citizens' attachment and integration with their neighborhood was based on two survey items that asked respondents whether they were satisfied with their neighborhood and their relationship with their neighbors. The scale had an alpha of .56. Exploratory factor analysis with varimax rotation method showed that these two items were associated with a single latent construct (factor loadings > .80). Home ownership (owner = 2, not owner = 1) was also included as an indicator of residential rootedness (Lewis & Salem, 1986; McGarrell et al., 1997). Previous research identified neighborhood integration (Adams & Serpe, 2000; Hunter & Baumer, 1982; Taylor et al., 1984); neighborhood satisfaction (Ferguson & Mindel, 2007; McCoy, Wooldredge, Cullen, Dubeck, & Browning, 1996); and home ownership (McGarrell et al., 1997; Schafer et al., 2006; Taylor & Hale, 1986) as factors influencing fear. Consequently, neighborhood integration and home ownership were predicted to negatively relate to fear of crime.

### Satisfaction with law enforcement

Satisfaction with law enforcement was operationalized based on three survey items that asked respondents whether law enforcement responded to incidents on time; whether they were satisfied with law enforcement's attitude toward citizens; and whether they were satisfied with traffic enforcement. The scale had an alpha level of .76. Factor analysis showed that these three survey items were associated with a single latent construct (factor loadings > .78). Given that empirical research also revealed the negative impact of previous encounters with law enforcement on satisfaction and performance (Carter, 1985), a dichotomous measure of previous encounter (0 = no, 1 = yes) with police was also included in the analysis. Thus, in accordance with previous research (Baumer, 1985; Scheider et al., 2003) a negative relationship between satisfaction with law enforcement and fear of crime was predicted to control for the impact of previous encounters with police.

### Fear of crime

Measuring fear of crime was based on two items that asked respondents how safe they felt when they were walking alone at night in their neighborhood and when they were alone at home. The alpha for the scale was .70. Exploratory factor analysis with varimax rotation method also showed that these two items were associated with a single latent construct (factor loadings > .85). A common problem with such global measures of crime is that both items are likely to reflect the compounding impact of the risk of criminal victimization (Ferraro & LaGrange, 1987). Indeed, more recent research on fear of crime revealed a multidimensional nature of the construct. In this regard, conceptualizing fear of crime should reflect three related dimensions: cognitive, affective, and behavioral (see Fattah & Sacco, 1989; T. W. Franklin, Franklin, & Fearn, 2008). More importantly, recent research that tested integrated fear of crime models demonstrated that the vulnerability/indirect victimization model lacked directional consistency across the cognitive (global/omnibus) and affective/emotional (e.g., crime specific) measures of fear of crime (T. W. Franklin et al., 2008). Similarly, Kanan and Pruitt (2002) found that sociodemographic characteristics did not consistently predict fear across fear of crime and victimization risk dimensions. Constrained by the availability of the secondary data, the measure of fear of crime adopted in this study was thus prey to the same concerns.

Despite these qualifications, this global measure of fear of crime based on fear on the street and at home has the advantage of offering comparability and opportunity for replication because they have been used in numerous studies (Covington & Taylor, 1991; Gibson, Zhao, Lovrich, & Gaffney, 2002; Kennedy & Silverman, 1985; Liska, Lawrence, & Sanichirico, 1982; McGarrell et al., 1997; Skogan & Maxfield, 1981). Further, given the purpose of the present study to extend fear of crime

research to non-Western contexts, using this global measure of fear of crime was employed. As discussed in the conclusion, extending the use of more refined fear of crime measures was a logical extension of the present analysis.

## Analysis

As an initial step, bivariate correlations between fear and individual and perceived neighborhood characteristics were examined. All of the variables except for education significantly correlated with the fear scale in the theorized direction. Given previous findings that indicated a negative relationship between education and fear (Adams & Serpe, 2000; Carcach, Frampton, Thomas, & Cranich, 1995), education was retained in the multivariate analysis. Next, fear of crime was regressed on all of the independent variables simply by entering all variables into a multivariate regression (OLS) equation. In this initial model, all of the independent variables except previous encounter with law enforcement significantly predicted fear of crime. Consequently, stepwise regression, forward, and backward model selection procedures were used to decide whether to eliminate this variable from the model. All three procedures suggested that none of the independent variables except for previous encounter with law enforcement could be dropped from the model. Based on the trimmed model, several regression diagnostic procedures were employed to test for the presence of outliers, influential cases, and multicollinearity. The results indicated that there was not a concern with multicollinearity and the assumption of normality was met. Finally, potential correlation among the members of the same household was controlled for by using the cluster<sup>7</sup> command in Stata (version 9.2). Corrected standard errors were reported and statistical inference was based on these robust standard errors in all of the following models.

## Findings

Table 1 presents the OLS multiple regression analysis results for the full sample. Overall, the model was significant and explained 17 percent of the variance in fear. All of the indicators except for age were statistically significant and related to fear in the expected direction. Although previous research, specifically the vulnerability thesis, suggested a positive relationship between age and fear of crime, the full model indicated an inverse relationship between age and fear. Simply put, older Turkish citizens were less fearful of crime. The impact of the remaining demographic characteristics, however, was consistent with the assumptions of the physical and social vulnerability thesis in that people with higher education and income reported less fear, while women reported higher levels of fear.

**Table 1**  
Multiple regression analysis of fear, full sample

Variables	B	Robust SE	t-value	Significance
<i>Demographics</i>				
Age	-0.003	0.002	-2.10	0.035
Gender	0.738	0.041	17.76	0.000
Income	-0.042	0.019	-2.21	0.027
Education	-0.078	0.021	-3.66	0.000
<i>Facilitators</i>				
Victimization	0.438	0.061	7.12	0.000
Disorder	0.186	0.046	4.00	0.000
Urban	0.710	0.062	11.52	0.000
<i>Inhibitors</i>				
Integration	-0.194	0.022	-8.61	0.000
Home ownership	-0.163	0.062	-2.64	0.008
Satisfaction w/law enforcement	-0.300	0.024	-12.26	0.000

Notes: N = 6,713; R<sup>2</sup> = .169; F = 129.67; significance = p < .001.

As expected, respondents living in urban areas expressed higher levels of fear of crime than respondents living in rural parts of Turkey. Again, in line with the victimization perspective, previous victimization also had a significant positive impact on fear. Finally, in keeping with prior research, perceived neighborhood disorder also seemed to be a significant facilitator of fear of crime.

As for the inhibitors of fear of crime, citizens who perceived their neighborhood as more integrated; those who were more satisfied with their neighborhood; and those satisfied with their relationships with their neighbors were less fearful. Home ownership, indicating residential rootedness and investment in the neighborhood, had a negative impact on the level of individual fear of crime. Finally, public level control, based on the level of satisfaction with law enforcement services also had an inhibiting impact on reported fear. Individuals who were more satisfied with law enforcement services expressed lower levels of fear.

Overall, the results concurred with the findings revealed by prior research; furthermore, both being a female and living in an urban location emerged as the two most powerful predictors of the level of fear in the full model. Considering previous studies that reported gender (see C. A. Franklin & Franklin, 2009; Schafer et al., 2006) and residential locale (see Baumer, 1985; Yin, 1980) may depend on certain individual characteristics (i.e., age, race, and income), additional models were estimated on subsamples based on gender and residential location. Examining the residential locale subsample was also based on the Turkish context, in that urban areas are policed by the Turkish National Police and rural areas by the Turkish Gendarmerie.

### Examining the models for subsamples

To examine whether the same indicators explained fear of crime for males and for individuals living in rural neighborhoods, four different models were estimated. This was accomplished by dividing the sample in four groups: females, males, urban dwellers, and rural dwellers.

In the gender-based subsample, females expressed significantly higher levels of fear of crime; were slightly younger; less educated; and earned less income compared to male respondents on average.<sup>8</sup> While female respondents were more satisfied with law enforcement services, the two groups of respondents did not significantly differ from each other in terms of perceived neighborhood disorder and neighborhood integration. Moreover, they did not significantly differ in terms of their previous victimization, home ownership status, and residential location. That is, among female respondents, 21.5 percent were previously victimized; 68.3 percent were urban dwellers; and 71.6 percent were home owners. Among male respondents, 20.7 percent were previously victimized; 67.7 percent were urban dwellers; and 72.4 percent were home owners.

Table 2 presents multiple regression analysis results for the subsamples of females and males. The discriminatory power of the subsamples differed slightly with the male model having more explained variance compared to the female model. As far as the individual effects of the variables were concerned, some of them produced different impacts on fear for each gender. Among the demographic characteristics, age had a significant negative impact on fear for females, but it did not significantly relate to fear in the male sample. Furthermore, age affected females differently than males, as the impact of age on fear of crime was significantly more pronounced among females ( $z = -3$ ). On the other hand, income did not have a significant impact on fear of crime across both subsamples. Education, however, did have a significant negative impact on the level of fear between both sexes.

Living in an urban area remained the strongest predictor of fear for both groups. The other facilitators of disorder and previous victimization also had a significant positive impact on the level of fear in both subsamples. Put differently, respondents who lived in an urban area; who had been victimized; and those who perceived higher disorder in their neighborhood expressed higher levels of fear regardless of their gender. The impact of victimization on fear, however, appeared to be

**Table 2**  
Multiple regression analysis of fear, females and males

Variables	Females (N = 3,640)				Males (N = 3,073)				z value of dif. in Bs
	B	Robust SE	t-value	Significance	B	Robust SE	t-value	Significance	
<i>Demographics</i>									
Age	-0.008	0.002	-3.54	0.000	0.001	0.002	.61	0.540	-3.00
Income	-0.032	0.023	-1.34	0.179	-0.045	0.023	-1.96	0.050	.41
Education	-0.059	0.028	-2.10	0.036	-0.127	0.028	-4.56	0.000	1.70
<i>Facilitators</i>									
Victimization	0.543	0.082	6.64	0.000	0.296	0.084	3.51	0.000	2.11
Disorder	0.167	0.059	2.83	0.005	0.198	0.058	3.39	0.001	-.37
Urban	0.783	0.080	9.82	0.000	0.639	0.069	9.18	0.000	1.34
<i>Inhibitors</i>									
Integration	-0.194	0.028	-6.86	0.000	-0.194	0.032	-6.14	0.000	.00
Home ownership	-0.131	0.078	-1.69	0.092	-0.201	0.074	-2.70	0.007	.65
Satisfaction w/law enforcement	-0.277	0.034	-8.20	0.000	-0.333	0.031	-10.87	0.000	1.22

Notes: Females: R<sup>2</sup> = .131, F = 56.81, significance = .000.; males: R<sup>2</sup> = .150, F = 49.31, significance = p < .001.

<sup>a</sup> See Paternoster, Brame, Mazerolle, and Piquero's (1998, p. 4) discussion about the z test for the difference between slopes across subsamples.

gender dependent. That is, even though victimization had a significant positive impact on both female and male fear of crime, the effect for females was significantly greater than for males (z = 2.11). Among the inhibitors of fear of crime, home ownership did not significantly relate to female fear of crime, but it had a significant negative impact on male fear of crime. Neighborhood integration and satisfaction with law enforcement services had significant negative impact on fear between both groups of participants.

In the second step, fear of crime was examined across urban and rural residents. As expected, urban residents, on average, expressed a higher level of fear of crime compared to rural residents. Females and males were represented almost equally across urban and rural subsamples, but more home owners existed among the rural residents. As would be expected, the victimization rate was higher for urban dwellers compared to rural residents (23.2 percent versus 16.6 percent). Moreover, on average, urban residents were significantly younger, better educated, and had higher household income compared to rural residents.<sup>9</sup> For the perceived characteristics of the neighborhood, on average, urban residents reported significantly higher levels of neighborhood disorder, whereas neighborhood integration and satisfaction with law enforcement services were significantly higher among the rural residents.

Multivariate analyses results for the variation of fear of crime across urban and rural residents are presented in Table 3. The most interesting finding was that demographic characteristics such as age and education have contrasting impact across urban and rural residents. Whereas older and better educated urban dwellers expressed lower levels of fear of

crime, neither age nor education had a significant impact on the level of fear of crime among the rural residents. As an indicator of social class, the impact of education for urban residents was also significantly greater than that for rural dwellers (z = 2.19). Gender, on the other hand, significantly related to fear of crime with females reporting higher levels of fear of crime in both subsamples. Income, however, did not have a significant impact on either group of participants.

Victimization had a consistent positive impact on the level of fear of crime across both subsamples. Individuals who had been previously victimized reported higher levels of fear in both subsamples. Perceived characteristics of the neighborhood and satisfaction with law enforcement services also had consistent impact across both subsamples. Simply put, whereas respondents that reported higher levels of neighborhood disorder expressed higher levels of fear of crime, individuals who perceived their neighborhood as more integrated and who were more satisfied with law enforcement services expressed lower levels of fear of crime regardless of their residential location.

**Discussion**

This analysis extended research on fear of crime to a relatively more homogeneous and traditional, yet rapidly industrializing country. Even though the estimated models had moderate explanatory power, the findings suggested that models of fear of crime developed in Western countries generalized to the Turkish context. Specifically, all three models of fear of crime, the victimization model, disorder model, and

**Table 3**  
Multiple regression analysis of fear, urban and rural residents

Variables	Urban (N = 4,566)				Rural (N = 2,147)				z value of dif. in Bs
	B	Robust SE	t-value	Significance	B	Robust SE	t-value	Significance	
<i>Demographics</i>									
Age	-0.004	0.002	-2.07	0.039	-0.002	0.003	-0.66	0.508	-.50
Gender	0.783	0.050	15.49	0.000	0.659	0.072	9.16	0.000	1.41
Income	-0.034	0.023	-1.47	0.141	-0.060	0.033	-1.83	0.068	.65
Education	-0.109	0.025	-4.30	0.000	-0.008	0.039	-0.20	0.841	2.19
<i>Facilitators</i>									
Victimization	0.369	0.072	5.15	0.000	0.587	0.119	4.92	0.000	-1.57
Disorder	0.160	0.050	3.18	0.001	0.347	0.109	3.18	0.002	-1.56
<i>Inhibitors</i>									
Integration	-0.177	0.026	-6.74	0.000	-0.231	0.044	-5.25	0.000	1.06
Home ownership	-0.146	0.070	-2.07	0.038	-0.251	0.131	-1.92	0.055	.71
Satisfaction w/law enforcement	-0.328	0.027	-12.19	0.000	-0.234	0.056	-4.16	0.000	1.52

Notes: Urban: R<sup>2</sup> = .137, F = 84.30, significance = .000.; rural: R<sup>2</sup> = .117, F = 23.37, significance = p < .001.

community concern/social control significantly contributed to understanding the sources of fear among Turkish citizens.

In the full model, with the exception of age, the relationships were in the predicted direction. Consistent with these models, being a female, living in an urban area, personal victimization, and perceived neighborhood disorder increased or facilitated individual fear of crime. Perceived neighborhood integration and satisfaction with law enforcement inhibited fear of crime among the Turkish citizens. Two important theoretical points follow. First, the congruence of these findings with prior research in the U.S., Canada, and other Western democracies, suggested the models were robust. Second, consistent with prior research that included the three models, all three appeared to be important in explaining fear of crime.

The findings on gender and age were interesting, though. As predicted from prior research and the vulnerability thesis, females expressed higher levels of fear than men. This was true for the studies that used global measures of fear of crime and studies that employed crime specific measures and the sum of each for overall fear (Ferraro, 1995, 1996; Ferraro & LaGrange 1992; Warr, 1985). Comparatively higher levels of female fear of crime is generally interpreted as indicative of the vulnerability thesis in that females report higher levels of fear of crime due to physical vulnerability, even though they were generally victimized less compared to males. In the current sample of Turkish citizens, however, the female victimization rate (21.5 percent) was slightly higher than the male victimization rate (20.6 percent). This may reflect patterns of a more traditional and patriarchal society. It suggested that women's fear included both a vulnerability and a victimization component. It also points to the need for future research on the nature and extent of victimization among women in Turkey.

In contrast, age had an effect opposite of that found in most prior research. Older residents expressed lower levels of fear and thus did not reflect the vulnerability thesis. This, too, may reflect a more traditional society in which respect of and care for elders is a strong cultural ethic. Interestingly, this was consistent with findings from another recent study of fear of crime in the more traditional society of South Korea where elders are also held in honor (Hwang, 2006). Family and community social patterns in these more traditional societies may inhibit the type of vulnerability associated with aging in more mobile and individualistic cultural contexts. It is important to note, however, that other researchers also reported similar results regarding fear of crime among elderly in Western societies (Chadee & Ditton, 2003; Kanan & Pruitt, 2002). In this sense, this counterintuitive impact of age on fear of crime might indicate a rational assessment of heightened victimization risk among younger people and reduced risk among older people (Adams & Serpe, 2000). Alternatively, employing global measures of fear of crime in this research might have produced this finding. More specifically, being alone at night is an unlikely event especially for the elderly (Ferraro & LaGrange, 1992); therefore they would likely report less fear of something that does not relate to their everyday life experience (see Hale, 1996 for a related discussion).<sup>10</sup>

The remaining demographic characteristics of income and education also significantly impacted fear in the full sample. Income and education both related to fear in the predicted negative direction. In line with vulnerability hypothesis, increased socioeconomic status significantly decreased the level of individual fear of crime.

As expected, the people living in the urban parts of Turkey reported higher levels of fear of crime. The positive relationship between urbanization and higher crime rates, higher victimization rates, and higher levels of fear of crime has long been entertained by several researchers (Bursik & Grasmick, 1993; Kristjansson, 2007; Markowitz et al., 2001; Sampson & Groves, 1989). Yet, it should be noted that the current study did not capture several dimensions of physical and social disorder and also failed to include a direct measure of informal social control in the neighborhood. Therefore, to the extent that disorder and breakdown in informal social controls prevail

in Turkey's urban locations, the strong positive impact of living in an urban area on fear may also be compounded by such underestimated dimensions of these neighborhood characteristics.

Though it failed to capture the multidimensional nature of physical and social disorder, the measure of perceived neighborhood disorder also emerged as a significant facilitator of fear of crime in the full sample. Additionally, personal victimization was a significant facilitator of fear of crime.

The findings on neighborhood integration and on perceptions of the police, in line with previous research (McGarrell et al., 1997; Renauer, 2007), also supported arguments regarding the significance of both informal and formal social controls in inhibiting fear of crime (Bursik & Grasmick, 1993; Lewis & Salem, 1986). Home ownership was considered to inhibit fear of crime; however, its impact was not as strong as the other inhibitors. As a proxy indicator of neighborhood integration and commitment, home ownership might simply wash out of the model once the other neighborhood indicators were included.

When the full sample was divided into gender and residential location based subsamples, neighborhood integration and satisfaction with law enforcement services still consistently and strongly inhibited fear of crime among female and male respondents as well as urban and rural dwellers. Once again, home ownership had minimal inhibiting impact across the subsamples and it did not have a significant impact on fear of crime among females and rural residents at all. As in the full sample, the impact of living in an urban area and being a female significantly heightened reported fear of crime and both were powerful predictors of fear of crime in gender and residential location based subsamples respectively. Perceived disorder and personal victimization also significantly heightened individual level of fear of crime in both subsamples. Other demographic characteristics, such as age, education, and income had either minimal or no significant impact on the fear of crime across the subsamples.

The gender based subsample examined whether integrated models of fear of crime function differently according to respondents' gender. The gender specific impact of age and personal victimization, however, lent some support to the sexual assault hypothesis (Ferraro, 1995, 1996; Fisher & Sloan, 2003; Pain, 2001). Although the significant negative impact of age on female fear of crime contrasted with mainstream vulnerability hypothesis, as C. A. Franklin and Franklin (2009) suggested, this finding might be explained by looking to the relationship between age and risk of sexual victimization. Specifically, women face less risk of sexual assault as they grow older (see Ferraro, 1996; Koss et al., 1994). This, in turn, might contribute to changes in the level of fear reported by females. As far as male respondents were concerned, similar to C. A. Franklin and Franklin's (2009) findings, age did not have a significant impact on fear of crime. This study's analysis extended C. A. Franklin and Franklin's (2009) argument by including a personal victimization measure.

As for the relationship between fear of crime and the remaining demographics and facilitators and inhibitors of fear of crime, the current analysis revealed no significant differences across female and male samples. Specifically, no significant relationship between income and fear of crime in either sample was found, although education had a significant positive impact on fear of crime in both samples. Perceived disorder significantly increased fear of crime for both females and males, whereas neighborhood integration and satisfaction with law enforcement lowered the level of fear of crime for both sexes. Home ownership had a significant negative impact on male fear of crime, while the relationship between home ownership and fear of crime failed to reach statistical significance in the female sample. The magnitude of these relationships, however, did not significantly change across the female and male samples.

In the residential location subsample, only education was found to have a context dependent impact across the urban and rural samples. In line with the (social) vulnerability hypothesis, education had a significant negative impact on fear for the urban sample, but failed to exert a

significant influence on fear for the rural sample. One possible explanation for this finding relates to the general characteristics of urban places. Given that urban places are characterized by income heterogeneity and poor social integration (Miceli et al., 2004; Skogan & Maxfield, 1981), socioeconomic status and integration might be relatively more important and have a greater impact on fear in an urban setting. In this sense, the significant (negative) impact of home ownership on fear for only the urban sample might also be considered as supporting this argument. Thus, integrating and investing in the neighborhood would be relatively more important in urban places. As the social disorganization framework suggested (Bursik & Grasmick, 1993), given high crime conditions such as those that exist in urban areas, people with higher socioeconomic status and those living in well integrated neighborhoods would report less fear. The impact of home ownership on fear, however, did not significantly differ across urban and rural samples.

Another important finding in the residential location based subsample was that age had a significant negative impact on fear for the rural sample, but it failed to reach the level of significance in the rural sample. This was consistent with Baumer (1985) and Lebowitz (1975), who reported that age did not significantly impact fear in rural areas. In contrast to Baumer (1985) and Lebowitz (1975), however, the present study found age has a significantly negative impact on fear in urban places. In fact, Baumer (1985) employed one of the items used in this study to measure fear of crime (“How safe do you feel or would you feel being out alone in your neighborhood at night?”). As noted, there remain at least two possible explanations for this finding. First, respect of and care for elders might lower the level of fear among the elderly. Such respect of elders may be more apparent for citizens of Turkey, who are expected to endorse traditional values reflecting the mechanical solidarity of “Gemeinschaft” communities (Durkheim, 1893/1933; Tonnies, 2001). Second, the negative impact of age on fear of crime in urban areas might point to a rational assessment of heightened victimization risk among younger people and reduced risk among older people (Adams & Serpe, 2000). This speculation is more relevant given Baumer’s (1985) argument that age differentiates fear under conditions of high crime such as those that exist in most urban environments. In this sense, younger people living in urban settings might be more likely to come across fear-provoking environments and occasions compared to their older counterparts because of their relatively more educational, occupational, and entertainment-related routine activities. As far as the impact of remaining demographics, facilitators, and inhibitors on fear are concerned, no significant difference was found across urban and rural samples. Gender emerged as one of the strongest predictors of fear in both samples, whereas income did not predict fear in either sample. Females reported more fear in both urban and rural settings. Perceived neighborhood disorder and personal victimization both significantly facilitated fear, whereas neighborhood integration and

satisfaction with police significantly inhibited fear across urban and rural samples.

Thus, personal victimization, perceived neighborhood disorder, and formal and informal social controls based on the measures of neighborhood integration and satisfaction with law enforcement consistently predicted fear in all models. Given the strong and consistent impact of public level controls and neighborhood integration across the different models estimated above, the findings lent support for community policing as a possible policy implication. That is, increased satisfaction with police services could have both direct and indirect influence on fear through increased police presence, police-community partnerships, and informal social control. Data such as those collected in the Life Satisfaction Survey could form the basis for ongoing assessment of community policing initiatives. Ideally, these types of survey data could be collected in pilot and comparison sites to assess the impact of planned community policing initiatives and more complete measures of social and physical disorder could be developed to complement the measures utilized in the present research.

The findings of this study must be considered in light of several methodological limitations. First, the data were cross-sectional. Prior research, however, revealed reciprocal relationships between fear of crime, disorder, and social integration/cohesion (Bursik & Grasmick, 1993; Markowitz et al., 2001). The lack of longitudinal data clearly limited this study’s ability to establish temporal order among disorder, social integration, and fear of crime. Second, this study did not control for between and within neighborhood differences or for community level factors (i.e., crime, socioeconomic conditions, mobility). Third, global measures of fear of crime were utilized that only captured the cognitive dimension of fear of crime. As such, the dependent variable was less sensitive and might lead to weaker associations between fear and independent variables. The relative importance of independent variables, however, should remain unchanged. Finally, because of the limits of secondary data, several measures (e.g., disorder, neighborhood integration) had very modest alphas, and measures of indirect victimization and subcultural diversity were not available. Despite these limitations, the fact that the integrated models appeared to account for fear of crime in the Turkish context suggested their robust nature.

In conclusion, this research revealed that integrated models of fear of crime generalized to the Turkish context, even though these models were formulated in English-speaking, developed economies. Traditional models of fear of crime, however, functioned both in similar and different ways depending on respondents’ gender and residential location. As C. A. Franklin and Franklin (2009) suggested, relying on mainstream theory (i.e., vulnerability model) can weaken the ability to generalize research findings accurately to various groups with different experiences. In this regard, additional research regarding sources of the fear of crime among women and urban residents is warranted.

**Appendix A. Description of variables**

Variables (coding values)	Percentage	N
<i>Fear of crime</i> (reverse coded so higher scores indicate higher fear of crime): The measure of fear of crime is based on two survey items asking the respondents how safe they feel when they are walking alone at night in their neighborhood -and- when they are alone at home. Response categories ranged on a continuum scale from 1 (very safe) to 5 (very unsafe). Mean = 5.16 Alpha = .70	Range = 2-10	6,713
Age	Mean = 41.6 Range = 18-90	6,713
Gender		
Male (1)	45.8	3,073
Female (2)	54.2	3,640
Income (yearly Turkish lira)		6,713
0-319 YTL (1)	21.5	
320YTL-416YTL (2)	17.3	

(continued on next page)

**Appendix A (continued)**

Variables (coding values)	Percentage	N
<i>Income (yearly Turkish lira)</i>		
417YTL-583YTL (3)	17.0	
584YTL-833YTL (4)	20.7	
834YTL-1166YTL (5)	13.3	
1166YTL + (6)	10.4	
<i>Education</i>		
No school (1)	21.8	6,713
Primary school (2)	46.3	
Secondary school (3)	7.6	
High school (4)	16.3	
College and equivalent (5)	7.7	
Graduate (6)	4.0	
<i>Victim</i>		
No (0)	21.1	6,713
Yes (1)	78.9	
Yes response indicates that the respondent reported being a victim of at least one of the following offense types in the year of 2004: robbery, purse snatching, threatening, assault, harassment by phone, or of any other unspecified offense.		
<i>Disorder (reverse coded so higher scores indicate high disorder): Additive scale based on ratings of the two survey items asking whether the respondent had a problem of noise (yes = 1) or not (no = 2) that comes from his/her neighbors and neighborhood.</i>		
	Mean = 2.32 Alpha = .484	Range = 2-4 6,713
<i>Integration (reverse coded so higher scores indicate high integration): Additive scale based on the rating of two items asking whether the respondents were very satisfied (1), satisfied (2), somewhat satisfied (3), dissatisfied (4), or very dissatisfied (5) with their neighborhood and their relationships with their neighbors.</i>		
	Mean = 7.64 Alpha = .561	Range = 2-10 6,713
<i>Satisfaction with law enforcement (reverse coded so higher scores indicate high satisfaction): Additive scale based on rating of three survey items asking the respondents whether law enforcement responds to the incidents on time (yes = 1) or not (no = 2); whether they are satisfied with law enforcement officials' attitude toward the citizens (yes = 1) or not (no = 2); whether they are satisfied with traffic enforcement of law enforcement authorities (yes = 1) or not (no = 2).</i>		
	Mean = 5.25 Alpha = .761	Range = 3-6 6,713
<i>Previous encounter: Based on the question whether the respondent applied to the law enforcement in the year 2004.</i>		
No (0)	91.3	6,713
Yes (1)	8.7	
<i>Home ownership (reverse coded so higher scores indicate home ownership)</i>		
Owner (1)	72.0	6,713
Not owner (2)	28.0	
<i>Urban (reverse coded so higher scores indicate urban residency)</i>		
Urban (1)	68.0	4,566
Rural (2)	32.0	2,147

**Appendix B. Correlation matrix**

	Fear of crime	Age	Gender	Income	Education	Victimization	Home ownership	Urban	Disorder	Integration	Satisfaction w/law enforcement	Previous encounter
Fear of crime	1.00											
Age	-.08**	1.00										
Gender	.20**	-.06**	1.00									
Income	.03**	-.05**	-.03**	1.00								
Education	-.01	-.34**	-.23**	.47**	1.00							
Victimization	.15**	-.09**	.01	.09**	.09**	1.00						
Home ownership	-.11**	.21**	-.01	-.02*	-.15**	-.06**	1.00					
Urban	.22**	-.05**	.01	.34**	.25**	.08**	-.21**	1.00				
Disorder	.15**	-.04**	.00	.09**	.09**	.09**	-.11**	.23**	1.00			
Integration	-.20**	.16**	.01	.02	-.08**	-.12**	.08**	-.06**	-.22**	1.00		
Satisfaction w/law enforcement	-.22**	.12**	.08**	-.19**	-.23**	-.16**	.06**	-.19**	-.12**	.17**	1.00	
Previous encounter	.03*	-.02	-.07**	.04**	.06**	.18**	-.05**	.04**	.03*	-.06**	-.06**	1.00

\*p<.05.

\*\*p<.01 (two-tailed).

## Appendix C. Rotated factor matrix

	Factor 1 <sup>a</sup>	Factor 2 <sup>a</sup>	Factor 3 <sup>a</sup>	Factor 4 <sup>a</sup>
<i>Disorder</i>				
Noise from the neighbors	-.042	-.005	-.156	<b>.795</b>
Noise from the neighborhood	-.050	-.100	-.022	<b>.820</b>
<i>Integration</i>				
Satisfied with the neighborhood	.030	.177	<b>.803</b>	-.110
Satisfied with the neighbors	.116	-.018	<b>.840</b>	-.073
<i>Satisfaction with law enforcement (LE)</i>				
LE responds to the incidents on time	<b>.788</b>	.099	.064	-.020
Satisfied w/LE's attitudes toward the citizens	<b>.854</b>	.071	.044	-.054
Satisfied w/traffic enforcement of LE	<b>.803</b>	.060	.068	-.045
<i>Fear of crime</i>				
How safe do you feel while alone at home	.062	<b>.879</b>	.095	-.005
How safe do you feel while walking alone at night in the neighborhood	.142	<b>.856</b>	.058	-.112

Notes: Principal component analysis of extraction method and varimax with Kaiser normalization rotation method. Bold represents the factor loadings of each specific scale.

<sup>a</sup> Factor loading.

## Notes

1. There is also subcultural diversity model/perspective, suggesting that people are more likely to be afraid when they are worried about the behaviors of "others" who look or act differently mainly because of their racial, ethnic, or cultural differences (see Bursik & Grasmick, 1993; Covington & Taylor, 1991; Lane & Meeker, 2000, 2003). The current study, however, could not incorporate this perspective because there was no information about respondents' cultural/ethnic backgrounds in the data set.

2. Referring to suggestions of Furstenberg (1971), Skogan (1986), and Skogan and Maxfield (1981), Bursik and Grasmick (1993) argued that the role of the systemic structure in the indirect victimization model was unclear because evidence showed that areas with stronger relational networks were also those in which the levels of victimization tended to be fairly low (p. 98).

3. They borrowed this term from: G. D. Suttles (1968).

4. Salmi et al. (2004) found that respondents who perceived the police more often engaging in on-foot activities were less fearful of crimes against property. In contrast, seeing the police engaging more in patrol-car-related activities resulted in increased fear of crimes against persons and property.

5. Detailed information about the variables and descriptive statistics are provided in Appendix A. Additionally, Appendix B provides the correlations between the variables included in the analysis.

6. See Appendix C for rotated factor matrix, which demonstrates the extraction of three different factors for three neighborhood characteristics; and of another factor for the dependent variable, fear of crime.

7. Cluster command adjusts standard errors for intra-group correlation and thus accounts for the lack of independence (McCulloch & Searle, 2001) among the members of the same household within the data set.

8. In order to compare all indicators across female and male respondents, independent sample t-tests with nondirectional hypotheses (two-tailed) were conducted.

9. To compare all indicators across urban and rural dwellers, independent sample t tests with nondirectional hypotheses (two-tailed) were conducted.

10. There were still other researchers, however, who found age to negatively influence the affective dimension of fear of crime while positively influencing the cognitive/global dimension (T. W. Franklin et al., 2008; LaGrange et al., 1992).

## References

Adams, R. E., & Serpe, R. T. (2000). Social integration, fear of crime, and life satisfaction. *Social Perspectives*, 43, 605–629.

Adu-Mireku, S. (2002). Fear of crime among residents of three communities in Accra, Ghana. *International Journal of Comparative Sociology*, 43, 153–168.

Atasoy, S., Baskan, T. M., & Ziyalar, N. (2006). Juvenile justice in Turkey. In P. C. Friday & X. Ren (Eds.), *Delinquency and juvenile justice systems in the non-Western world* (pp. 125–143). New York: Criminal Justice Press.

Bahar, H. I., & Fert, I. (2008). The debate over recent recorded crime in Turkey. *International Journal of Social Inquiry*, 1, 89–104.

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, 239–255.

Box, S., Hale, C., & Andrews, G. (1988). Explaining fear of crime. *British Journal of Criminology*, 28, 340–356.

Bursik, R. J., & Grasmick, H. G. (1993). *Neighborhoods and crime: The dimensions of effective community control*. New York: Lexington Books.

Carcach, C., Frampton, P., Thomas, K., & Cranich, M. (1995). Explaining fear of crime in Queensland. *Journal of Quantitative Criminology*, 11, 271–287.

Carter, D. L. (1985). Hispanic perception of police performance: An empirical assessment. *Journal of Criminal Justice*, 13, 487–500.

Chadee, D., & Ditton, J. (2003). Are older people most afraid of crime? Revisiting Ferraro and LaGrange in Trinidad. *British Journal of Criminology*, 43, 417–433.

Chiricos, T., Eschholz, S., & Gertz, M. (1997). Crime, news, and fear of crime: Toward an identification of audience effects. *Social Problems*, 44, 342–357.

Covington, J., & Taylor, R. B. (1991). Fear of crime in urban residential neighborhoods: Implications of between-and within-neighborhood sources for current models. *Sociological Quarterly*, 32, 231–249.

Dammert, L., & Malone, M. F. T. (2006). Does it take a village? Policing strategies and fear of crime in Latin America. *Latin American Politics and Society*, 48, 27–51.

De Donder, L., 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, 363–376.

Durkheim, E. (1933). *The division of labour in society*. Glencoe, IL: Free Press. (Original work published 1893)

Fattah, E. A., & Sacco, V. F. (1989). *Crime and victimization of the elderly*. New York: Springer-Verlag.

Ferguson, K. M., & Mindel, C. H. (2007). Modeling fear of crime in Dallas neighborhoods: A test of social capital theory. *Crime and Delinquency*, 53, 322–349.

Ferraro, K. F. (1995). *Fear of crime: Interpreting victimization risk*. Albany: State University of New York Press.

Ferraro, K. F. (1996). Women's fear of victimization: Shadow of sexual assault? *Social Forces*, 75, 667–690.

Ferraro, K. F., & LaGrange, R. (1987). The measurement of fear of crime. *Sociological Inquiry*, 57, 70–97.

Ferraro, K. F., & LaGrange, R. (1992). Are older people most afraid of crime? Reconsidering age differences in fear of victimization. *Journal of Gerontology: Social Sciences*, 47, 233–244.

Fisher, B. S., & Sloan, J. J., III (2003). Unraveling the fear of victimization among college women: Is the "shadow of sexual assault hypothesis" supported? *Justice Quarterly*, 20, 633–659.

Franklin, C. A., & Franklin, T. W. (2009). Predicting fear of crime: Considering differences across gender. *Feminist Criminology*, 4, 83–106.

Franklin, T. W., Franklin, C. A., & Fearn, N. E. (2008). A multilevel analysis of the vulnerability, disorder, and social integration models of fear of crime. *Social Justice Research*, 21, 204–227.

Furstenberg, F. F. (1971). Public reaction to crime in the streets. *American Scholar*, 40, 601–610.

Garofalo, J. (1979). Victimization and the fear of crime. *Journal of Research in Crime and Delinquency*, 16, 80–97.

Garofalo, J. (1981). The fear of crime: Causes and consequences. *Journal of Criminal Law and Criminology*, 72, 839–857.

Garofalo, J., & Laub, J. (1978). Fear of crime: Broadening our perspective. *Victimology*, 3, 242–253.

Gibson, C. L., Zhao, J., Lovrich, N. P., & Gaffney, M. J. (2002). Social integration, individual perceptions of collective efficacy, and fear of crime in three cities. *Justice Quarterly*, 19, 537–564.

Greenberg, S. W. (1986). Fear and its relationship to crime, neighborhood deterioration, and informal social control. In J. M. Byrne & R. J. Sampson (Eds.), *The social ecology of crime* (pp. 47–62). New York: Springer-Verlag.

Hale, C. (1996). Fear of crime: A review of the literature. *International Review of Victimology*, 4, 79–150.

Hawdon, J. E., Ryan, J., & Griffin, S. P. (2003). Policing tactics and perceptions of police legitimacy. *Police Quarterly*, 6, 469–491.

Hunter, A. J., & Baumer, T. L. (1982). Street traffic, social integration and fear of crime. *Sociological Inquiry*, 52, 122–131.

Hwang, E. G. (2006). *A multilevel test of fear of crime: The effect of social conditions, perceived community policing activities, and perceived risks in a megalopolis*. Unpublished doctoral dissertation, Michigan State University, East Lansing.

Johnson, J. D. (2006). Fear of crime in Botswana: Impact of gender, victimization, and incivility. *International Journal of Comparative and Applied Criminal Justice*, 30, 235–253.

Kanan, W. J., & Pruitt, M. V. (2002). Modeling fear of crime and perceived victimization risk: The (in)significance of neighborhood integration. *Social Inquiry*, 72, 527–548.

Kelling, G., & Coles, C. M. (1996). *Fixing broken windows: Restoring and reducing crime in our communities*. New York: Free Press.

Kennedy, L. W., & Silverman, R. A. (1985). Significant others and fear of crime among the elderly. *International Journal of Aging and Human Development*, 20, 241–256.

Koss, M., Goodman, L., Browne, A., Fitzgerald, L., Keita, G., & Russo, N. (1994). *No safe haven: Male violence against women at home, at work, and in the community*. Washington, DC: American Sociological Association.

Kristjansson, A. L. (2007). On social equality and perceptions of insecurity: A comparison study between two European countries. *European Journal of Criminology*, 4, 1477–3708.

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, 311–334.

Lane, J., & Meeker, J. W. (2000). Subcultural diversity and the fear of crime and gangs. *Crime and Delinquency*, 46, 497–521.

- Lane, J., & Meeker, J. W. (2003). Fear of gang crime: A look at three theoretical models. *Law and Society Review*, 37, 425–456.
- Lebowitz, B. (1975). Age and fearfulness: Personal and situational factors. *Journal of Gerontology*, 30, 696–700.
- Lee, S. M., & Ulmer, J. T. (2000). Fear of crime among Korean Americans in Chicago communities. *Criminology*, 38, 1173–1206.
- Lewis, D. A., & Salem, G. (1981). Community crime prevention: An analysis of a developing strategy. *Crime Delinquency*, 27, 405–421.
- Lewis, D. A., & Salem, G. (1986). *Fear of crime: Incivility and the production of a social problem*. New Brunswick, NJ: Transaction Books.
- Liska, A. E., Lawrence, J. J., & Sanchirico, A. (1982). Fear of crime as a social fact. *Social Forces*, 60, 760–770.
- Liska, A. E., Sanchirico, A., & Reed, M. D. (1988). Fear of crime and constrained behavior: Specifying and estimating a reciprocal effects model. *Social Forces*, 66, 827–837.
- Markowitz, F. E., Bellair, P. E., Liska, A. E., & Liu, J. (2001). Extending social disorganization theory: Modeling the relationships between cohesion, disorder, and fear. *Criminology*, 39, 293–319.
- Marvell, T. B., & Moody, C. E. (1996). Specification problems, police levels, and crime rates. *Criminology*, 34, 609–646.
- Maxfield, M. (1984). The limits of vulnerability in explaining fear of crime: A comparative neighborhood analysis. *Journal of Research in Crime and Delinquency*, 21, 233–250.
- McCoy, H. V., Wooldredge, J. D., Cullen, F. T., Dubeck, P. J., & Browning, S. L. (1996). Lifestyles of the old and not so fearful: Life situation and older persons' fear of crime. *Journal of Criminal Justice*, 24, 191–205.
- McCulloch, C. E., & Searle, S. R. (2001). *Generalized, linear, and mixed models*. New York: John Wiley.
- McGarrell, E. F., Giacomazzi, A. L., & Thurman, Q. C. (1997). Neighborhood disorder, integration, and the fear of crime. *Justice Quarterly*, 14, 479–500.
- Miceli, R., Roccatto, M., & Rosato, R. (2004). Fear of crime in Italy: Spread and determinants. *Environment and Behavior*, 36, 776–789.
- Nofziger, S., & Williams, L. S. (2005). Perceptions of police and safety in a small town. *Police Quarterly*, 8, 248–270.
- Ozbay, O., & Ozcan, Y. Z. (2006). A test of Hirschi's social bonding theory: Juvenile delinquency in the high schools of Ankara, Turkey. *International Journal of Offender Therapy and Comparative Criminology*, 50, 711–726.
- Pain, R. (2001). Gender, race, age, and fear of the city. *Urban Studies*, 38, 899–913.
- Paternoster, R., Brame, R., Mazerolle, P., & Piquero, A. (1998). Using the correct statistical test for the equality of regression coefficients. *Criminology*, 36, 859–866.
- Pauwels, L., & Pleysier, S. (2005). Assessing cross-cultural validity of fear of crime measures through comparison between linguistic communities in Belgium. *European Journal of Criminology*, 2, 139–159.
- 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, 63–107.
- Renauer, B. C. (2007). Reducing fear of crime: Citizen, police, or government responsibility? *Police Quarterly*, 10, 41–62.
- Robertson, A. (2006). The significance of language, culture, and communication in researching post-Soviet crime and policing. *Journal of Contemporary Criminal Justice*, 22, 137–156.
- Ross, C. E., & Jang, S. (2000). Neighborhood disorder, fear, and mistrust: The buffering role of social ties with neighbors. *American Journal of Community Psychology*, 28, 401–420.
- Rountree, P. W. (1998). A reexamination of the crime-fear linkage. *Journal of Research in Crime and Delinquency*, 35, 341–372.
- Salmi, S., Gronroos, M., & Keskinen, E. (2004). The role of police visibility in fear of crime in Finland. *Policing*, 27, 573–591.
- Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social disorganization theory. *American Journal of Sociology*, 94, 774–802.
- Schafer, J. A., Huebner, B. M., & Bynum, T. S. (2006). Fear of crime and criminal victimizations: Gender-based contrasts. *Journal of Criminal Justice*, 34, 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, 363–386.
- Skogan, W. G. (1986). Fear of crime and neighborhood change. In A. J. Reiss & M. Tonry (Eds.), *Communities and crime* (pp. 203–229). Chicago: University of Chicago Press.
- Skogan, W. G. (1990). *Disorder and decline: Crime and the spiral of decay in American neighborhoods*. Berkeley: University of California Press.
- Skogan, W. G. (2006). *Police and community in Chicago: A tale of three cities*. New York: Oxford University Press.
- Skogan, W. G., & Maxfield, M. G. (1981). *Coping with crime: Individual and neighborhood reactions*. Beverly Hills, CA: Sage.
- Suttles, G. D. (1968). *The social order of the slum: Ethnicity and territory in the inner city*. Chicago: University of Chicago Press.
- Taylor, R. B., Gottfredson, S. D., & Brower, S. (1984). Block crime and fear: Defensible space, local social ties, and territorial functioning. *Journal of Research in Crime and Delinquency*, 21, 303–331.
- Taylor, R. B., & Hale, M. (1986). Testing alternative models of fear of crime. *Journal of Criminal Law and Criminology*, 77, 151–189.
- Thurman, Q. C., Zhao, J. S., & Giacomazzi, A. J. (2001). *Community policing in a community era*. Los Angeles: Roxbury.
- Tonnies, F. (2001). *Community and civil society* (J. Harris, Ed.). New York: Cambridge University Press.
- Trojanowicz, R. (1986). Evaluating a neighborhood foot patrol program. In D. Rosenbaum (Ed.), *The challenge of community policing: Testing the promises* (pp. 157–178). Thousand Oaks, CA: Sage.
- Turkish Statistical Institute. (2007). *Statistical indicators 1923-2006*. Ankara, Turkey: Printing Division.
- Warr, M. (1985). Fear of rape among urban women. *Social Problems*, 32, 238–250.
- 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, 163–176.
- Xu, Y., Fiedler, M. L., & Flaming, K. H. (2005). Community policing: The broken windows thesis, collective efficacy, and citizen's judgment. *Journal of Research in Crime and Delinquency*, 42, 147–186.
- Yin, P. P. (1980). Fear of crime among the elderly: Some issues and suggestions. *Social Problems*, 27, 492–504.
- Zhao, J. S., Scheider, M., & Thurman, Q. C. (2002). The effect of police presence on public fear reduction and satisfaction: A review of the literature. *Justice Professional*, 15, 273–299.