

Examining Item-, Individual-, and Contextual-levels of Ethnic Effect
on Willingness to Call the Police

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved June 2021 by the
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ARIZONA STATE UNIVERSITY

August 2021

ABSTRACT

The relationship between ethnicity and police-related outcomes has garnered significant attention from researchers. Although prior research has advanced scholarship, important questions still remain. First, previous studies about perceptions of police legitimacy have been conducted without examining whether this measure functions the same for different ethnic groups. Second, only a few studies have examined the effect of ethnicity on willingness to call the police, and they have produced mixed findings. Third, little attention has been paid to the effect of ethnic context on willingness to call the police. Against this backdrop, this dissertation extends prior work by providing an empirical assessment of willingness to call the police in relation to item-, individual-, and contextual-levels of ethnic effect. Specifically, Chapter 2 examines whether the perceptions of police legitimacy measure is invariant between Whites and Hispanics. Chapter 3 applies the group position thesis and Tyler's process-based model of policing to assess the relationship between ethnicity and willingness to call the police. Chapter 4 investigates the extent to which theoretical arguments drawn from the minority threat perspective and social disorganization theory can be applied to explain the relationship between ethnic context and willingness to call the police.

Using data collected from the Arizona Crime Victimization Survey (AZCVS) and the US Census, this dissertation produces three main findings. First, Chapter 2 finds that the perceptions of police legitimacy measure functions consistently across White and Hispanic subsamples. Second, Chapter 3 finds that Hispanics tended to show a lower level of trust in police compared to Whites, which in turn resulted in their unwillingness to call the police. This finding partially supports the notion that the group position thesis

and Tyler's process-based model can be combined to explain the relationship between ethnicity and willingness to call the police. Third, Chapter 4 finds that ethnic context affects individual willingness to call the police, partially through perceived risk of property crime victimization, suggesting that the minority threat perspective may be better able to explain the relationship between ethnic context and willingness to call the police than social disorganization theory. Given these findings, their implications for theory, future research, and policy are discussed.

ACKNOWLEDGMENTS

Throughout the writing of this dissertation, I have received great support and encouragement from faculty, friends, and my family. Although I cannot ever fully express my gratitude to everyone who has helped me along the way, I would like to acknowledge several individuals who have played a significant role in my academic accomplishment.

First and foremost, I would like to express my sincere gratitude to my mentor, Dr. Xia Wang. Without her support, patience, and guidance, this project would not have been completed. During the process, Dr. Wang has encouraged and challenged me to produce my best work. She raised me up whenever I wanted to give up and made me move forward. Xia, I am greatly thankful for your faith in me and truly honored to have you as my mentor.

I would also like to thank the members of my committee, Dr. Charles Katz and Dr. Scott Decker, who have supported me, encouraged me, and helped me throughout this research and my graduate education at Arizona State University. Chuck, working with you has been the highlight of my graduate career. Thank you for giving me opportunities to experience various research projects at the center, helping me develop advanced skills as a social science researcher, and providing resources that are always helpful. Scott, I feel very privileged to have you be a part of my dissertation project and to have had great support from you. I appreciate your sincere advice that made me stronger.

In addition, I would like to thank Cher Stuewe-Portnoff for helping me edit this document and pushing me to be a better writer. I would also like to recognize all my awesome friends, Aryn, Faith, Jessie, D'Andre, Byungbae, Jonathan, Ming, Mati, Steve, Yoonmi, and my Hyeonghwa family in South Korea for their endless support and caring during my time in Arizona.

Finally, I am extremely grateful to my parents, Jaeyong Jeon and Sookho Shin, and my sister, Hyerin Cheon. Their love, encouragement, understanding, trust, and continuing support have been a great part of my life. Without them, I would not be where I am now. Thank you all for being there for me, and I love you all.

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CHAPTER 1

INTRODUCTION

*“Non-reporting subverts our interest in the goal of equity
in the criminal justice system.”*

– Skogan (1984, p.116)

In 1967, The Presidents’ Commission on Law Enforcement and the Administration of Justice issued its report, *The Challenge of Crime in a Free Society*, which raised concerns about unreported crime (Biderman & Reiss, 1967; Mosher et al., 2002). Since then, several studies have found that the proportion of crimes that go unreported is substantial and that the discrepancy between official and actual crime rates remains an issue in the US (e.g., Baumer & Lauritsen, 2010; Morgan & Oudekerk, 2019). Based on the 2018 National Crime Victimization Survey (NCVS), for example, the Bureau of Justice Statistics found that more than half of all violent crimes, including both serious violent crimes and simple assaults, were not reported to the police (Morgan & Oudekerk, 2019). Unreported crime produces negative consequences for victims and for the criminal justice system as a whole. For instance, research has shown that unreported crime affects the number of victims eligible for public services, contributes to the misallocation of police resources, limits the deterrent capability of the criminal justice system, and hampers scientific evaluation of policies directed at crime control (Bosick et al., 2012; Carcach, 1997; Hindelang & Gottfredson, 1976; Skogan, 1977, 1984; Tarling & Morris, 2010).

Importantly, then, individual willingness to call the police may fundamentally shape the extent and nature of crimes that go unreported because this willingness is a necessary precursor to acting to report a crime. In fact, social scientists have dedicated considerable attention to studying individual willingness to call the police (Carcach, 1997; Harlow, 1985; also see Black, 1970). Researchers have found that demographic characteristics such as sex, age, and race/ethnicity (e.g., Avakame et al., 1999; Tyler & Fagan, 2008), perceptions of police legitimacy (e.g., Bolger & Walters, 2019; Reisig et al., 2012; Sunshine & Tyler, 2003; Tyler & Fagan, 2008; Tyler & Huo, 2002; Tyler & Jackson, 2014) and neighborhood characteristics such as poverty and residential instability (e.g., Warner, 2007) are all significantly related to resident willingness to call the police.

Although prior research has substantially advanced our knowledge, it has paid limited attention to the effect of ethnicity on residents' willingness to call authorities (Peterson & Krivo, 2005; Weitzer, 2014). Specifically, the majority of prior studies have typically used a dichotomous variable indicating White versus non-White (e.g., Avakame et al., 1999; Reisig et al., 2007; Tyler & Fagan, 2008) or included Hispanic as a control variable (e.g., Sunshine & Tyler, 2003; Tyler & Jackson, 2014). Moreover, these studies have been conducted with the underlying assumption that the measures being used will function the same across groups; this assumption, however, overlooks potential measurement errors (see Vandenberg, 2002). In addition, prior research has focused on the individual-level race/ethnicity effect, and little attention has been paid to the neighborhood-level ethnic context and its effect on individual willingness to call the

police. As the sole exception, Warner (2007) investigated the effect of neighborhood characteristics on resident willingness to call the authorities, including the police. Although insightful, Warner (2007) only examined concentrated disadvantage and residential mobility, and thus it remains unknown whether Hispanic composition has a distinct effect on residents willingness to call the police.

Notably, this limited attention to the effect of ethnicity is problematic for at least two reasons. First, the Hispanic population is one of the fastest growing populations in the US, and it has grown substantially over the past 15 years. Hispanics now comprise the largest minority group in the nation, accounting for approximately 18% of the US population (Krogstad, 2020). The US Census Bureau projects that by 2060, Hispanics will account for more than one-quarter of the total population, at 29% (Colby & Ortman, 2014). Moreover, in 2018, Hispanics were already the majority in some counties along the southern border with Mexico in states such as Arizona (e.g., Santa Cruz County, 83.4%), California (e.g., Imperial County, 84.6%), New Mexico (e.g., San Miguel County, 77.5%), and Texas (e.g., Starr County, 96.4%) (Schaeffer, 2019). Second, Hispanics have increasingly been targeted in police searches for immigration violations, which may shape their distrust in the criminal justice system (Lopez et al., 2010; Martínez, 2007; see also Langton & Durose, 2016) and, in turn, may affect their willingness to call the police. Given this background, local law enforcement agencies and policy makers may need to better understand Hispanic willingness to call the police as well as resident willingness to call the police in Hispanic communities.

Against this backdrop, this dissertation aims to provide an empirical assessment of individual willingness to call the police in relation to item, individual, and contextual levels of ethnic effect. To this end, I use data collected from the Arizona Crime Victimization Survey (AZCVS) and the US Census Bureau for neighborhood characteristics of Arizona. Arizona presents a unique location for investigating the relationship between ethnicity and the police for several reasons. First, Hispanics account for a large percentage of the state population. Specifically, while Hispanics account for 18% of the total population in the country, they constitute approximately 32% of the state population in Arizona (United State Census Bureau, 2019). In addition, according to the US Census Bureau, Arizona is among the top five states with the largest percentage of Hispanics. Second, great variation in Hispanic population size exists across neighborhoods, cities, and counties within the state. This variation allows for better detection of the effect of Hispanic population size on resident willingness to call the police. Third, the Support Our Law Enforcement and Safe Neighborhoods Act (Senate Bill 1070) was passed in Arizona in 2010, authorizing state and local law enforcement officials to enforce federal immigration policy. When it was passed, SB1070 was considered the harshest state immigration law in the US (Archibold, 2010), and its implementation is believed by many to have resulted in discriminatory practices of the police against Hispanic residents (Campbell, 2011; Johnson, 2012; Nill, 2010). The implementation of SB1070 may have an impact on Hispanic resident willingness to call the police in the state, which ultimately could impede collective efforts among neighborhood residents to identify and control crime in their communities. Given these

reasons, it is important to conduct an empirical assessment of individual willingness to call the police to report a crime in the State of Arizona in relation to item, individual, and contextual levels of ethnic effect.

Below, I provide an overview of prior research on individual willingness to call the police. Then I identify limitations in prior research and discuss their implications. In light of these limitations, I discuss the proposed study and provide a roadmap for this dissertation.

Background: Willingness to Call the Police

Willingness to call the police has been investigated for at least the past 30 years. Importantly, however, willingness to call the police has been conceptualized differently. In particular, some researchers have conceptualized willingness to call the police as an indicator of willingness to cooperate with the police (e.g., Reisig et al., 2007; Sunshine & Tyler, 2003; Tyler & Fagan, 2008), whereas others have conceptualized it as willingness to engage in informal social control (e.g., Warner, 2007; Warner et al., 2010). Depending on how it is conceptualized, different theoretical perspectives can be drawn upon to explain variations in willingness to call the police.

Willingness to Call the Police Conceptualized as Cooperation with Police

In research examining the relationship between citizens and the police, reporting a crime or calling for help has been conceptualized as one form of cooperating with the police for crime prevention. For example, some researchers have used items capturing willingness to call the police (e.g., willingness to call the police to report a crime, willingness to call the police to report suspicious activities near one's house) to represent

their willingness to cooperate with the police (e.g., Reisig et al., 2007; Reisig et al., 2012; Sun et al., 2018; White et al., 2016; Woo et al., 2018). Other studies have measured willingness to call the police along with other collaborative behaviors, such as volunteering to attend a community meeting to discuss crime in the neighborhood and working with law enforcement to educate other community members, to indicate their willingness to cooperate with authorities (e.g., Huq et al., 2011; Sunshine & Tyler, 2003; Tankebe et al., 2016; Wehrman & de Angelis, 2011).

Tom Tyler's (1990) theory of procedural justice, or the process-based model of policing, has been a major theoretical perspective that scholars have drawn upon to explain residents' cooperation with the police. In Tyler's model, an important theoretical concept is legitimacy, which is conceptualized as the "belief that legal authorities are entitled to be obeyed and that the individual ought to defer to their judgements" (Tyler & Huo, 2002, p. xiv). Tyler (1990, 2006) argues that the perception of legitimacy, which is preceded by the perception of procedural justice, is a significant predictor of individual willingness to cooperate with the police and other criminal justice authorities.¹

Specifically, Tyler (1990, 2006) contends that individuals who think that legal authorities treat them fairly in general are more likely to perceive law and criminal justice officials as legitimate, which in turn increases their willingness to comply with laws, regulations,

¹ Mazerolle, Bennet, and colleagues' (2013) systematic review of police legitimacy suggests that individuals' perceptions of legitimacy are also influenced by perceived distributive fairness or justice, as well as police performance and effectiveness, all of which may, in turn, facilitate willingness to cooperate with the police. Distributive justice and police effectiveness, however, are considered to play a less salient role than procedural justice in shaping perceptions of police legitimacy (see Mazerolle, Bennet et al., 2013; Sunshine & Tyler, 2003). In Chapter 1, perceptions of procedural justice will be presented as a main predictor of perceptions of police legitimacy, and the role of distributive justice and police effectiveness will be discussed in detail in Chapter 3.

and ordinances and to cooperate with criminal justice authorities, including the police (Hertogh, 2015; Murphy & Cherney, 2012; Reisig et al., 2012; Sunshine & Tyler, 2003; Tyler & Fagan, 2008; Tyler & Huo, 2002). Tyler (1990) also maintains that the effect of procedural justice on perceptions of police legitimacy operates in the same manner for all individuals (also see Tyler, 1994; Tyler & Huo, 2002). This proposition, known as the “invariance thesis” of procedural justice, suggests that perceptions of procedural justice should have equal effects in enhancing perceptions of police legitimacy for all population groups, regardless of sex, age, and race/ethnicity (Wolfe et al., 2016, p. 257).

Tyler’s (1990) process-based model of policing has been supported by a number of subsequent studies. Specifically, using individual-level data, several studies have found that individuals who perceived the police to be exercising their authority fairly also viewed the police as more legitimate (e.g., Elliott et al., 2011; Mazerolle, Antrobus, et al., 2013; Murphy et al., 2008; Reisig et al., 2007; Tyler & Wakslak, 2004). Further, a small number of studies have investigated Tyler’s two-stage process-based model and assessed whether perceptions of procedural justice serve as a predictor of perceptions of legitimacy that, in turn, foster individual willingness to cooperate with the police. Bolger and Walters (2019) conducted a meta-analysis of 56 studies published between 1990 and 2018, finding supportive evidence for Tyler’s model. Specifically, the meta-analysis revealed that all three paths (procedural justice → legitimacy, legitimacy → cooperation, procedural justice → cooperation) were statistically significant.

Willingness to Call the Police Conceptualized as Informal Social Control

Reporting a crime or calling for help has also been conceptualized as a form of informal social control (Bursik & Grasmick, 1993; Warner, 2007; Warner et al., 2010). For example, Sampson (2006, p. 154) contends that the actions included within informal social control are “social action[s] . . . ranging from informal intervention to the mobilization of formal controls.” He argues that willingness of residents to call the police indicates their willingness to become indirectly involved, with the intent of mobilizing formal controls, when they observe another’s deviant behavior and report it to formal authorities, such as the police, in order to secure their communities. Further, Warner (2007, p. 105) maintains that resident calls to the police for help is the most common form of “indirect” informal social control. Most prior empirical research on informal social control, however, has focused on “direct” informal social control, such as neighbors directly intervening in various types of inappropriate behavior--for example, selling drugs to youth in the neighborhood, painting graffiti on a local building, or a fight breaking out in front of their house (e.g., Elliott et al., 1996; Sampson et al., 1997; Warner, 2003).

Notably, willingness to call the police has not been a focus of the informal social control literature. This is a significant oversight for a couple of reasons. First, indirect informal social control is qualitatively different from direct informal social control (Warner, 2007). Specifically, unlike direct informal social control, indirect informal social control occurs when residents indirectly intervene upon observing someone’s deviant behavior by identifying it to formal social control authorities, such as the police

and social services. Indirect informal social control does not require a resident's direct interaction with wrongdoers and may result in formal consequences (e.g., offenders being arrested), whereas direct informal social control requires a resident's direct intervention and may not directly result in formal consequences. Second, indirect informal social control plays a significant role in crime control and may affect the deployment of criminal justice resources by linking informal and formal mechanisms of social control (see Skogan, 1984; Holmes et al., 2008). For example, when a crime occurs, a witness of the incident may act by calling upon the police to control the situation. This affects resource deployment when the police department subsequently increases patrols in those areas where calls reporting a crime are more frequent.

Research Gaps

Although previous studies have significantly advanced scholarship, important questions still remain. First, while the theoretical construct of police legitimacy in Tyler's (1990) process-based model has been validated (e.g., Gau, 2011; Reisig et al., 2007), measurement invariance of police legitimacy has not yet been tested across different ethnic groups.² Research examining differences in perceptions of police legitimacy across groups, such as those of different races and ethnicities, has been conducted with the underlying assumption that the measure being used for comparisons will function the same across groups (e.g., Murphy & Cherney, 2011; Sargeant et al., 2014; Sunshine & Tyler, 2003; Tyler & Huo, 2002; Wolfe et al., 2016; Zahnow et al., 2019). Some of these

² Measurement invariance testing examines whether the scale has the same structure and indicates the same meaning for different groups (Steenkamp & Baumgartner, 1998). A scale that is equivalent across groups will allow researchers to make a correct interpretation of group differences as attributable to differences in attitudes or perceptions and not simply to psychometric differences (Vandenberg, 2002).

studies found significant differences in perceptions of police legitimacy between members of different racial and ethnic groups. These differences are assumed to be due to true racial/ethnic differences; however, these differences may exist due to differences in the measurement scale's properties. Without evidence of measurement invariance of perceptions of police legitimacy across different ethnic groups, the interpretation of ethnic differences in perceptions of police legitimacy and other key concepts in Tyler's model, including procedural justice and cooperation with the police, could be biased and misleading. Thus, it is crucial to examine whether the measurement properties of perceptions of police legitimacy are invariant across groups prior to making group comparisons, which, however, remains unknown.

Second, at the individual level, prior research on individual willingness to call the police has been limited, and important questions exist regarding the effect of ethnicity. For example, most of the prior research has included ethnicity as a control variable in the model and has produced inconclusive findings. Specifically, Sunshine and Tyler (2003) found that ethnicity was not significantly associated with willingness to call the police among residents in New York City. White and colleagues (2016) also found no significant effect of ethnicity on willingness to call the police among arrestees in Phoenix, Arizona (see also Nuño, 2018). Tyler and Jackson (2014), however, surveyed 1,603 adults in the US and found that Hispanics were significantly less willing than Whites to cooperate with the police. It is likely that some factors, such as citizenship status and the primary language spoken at home, may play a significant role in Hispanic resident willingness call the police (see Herbst & Walker, 2001; Weitzer, 2014), and the

failure to control for these factors in some studies may explain mixed findings regarding the effect of ethnicity.

In addition, it is less clear whether the group position thesis (Blumer, 1958) and Tyler's (1990) process-based model of policing can be used to explain ethnic differences in willingness to call the police. In other words, little is known about whether perceptions of police legitimacy is an important process variable (i.e., mediator) for the relationship between an individual's ethnicity and willingness to call the police. This is a significant oversight because Hispanics are more likely to believe that the police are not fair and less legitimate (Buckler & Unnever, 2008; Garcia & Cao, 2005; Holmes, 1998; Lai & Zhao, 2010; Schuck & Rosenbaum, 2005; Webb & Marshall, 1995; Wu, 2014), which in turn, based on Bolger and Walters' (2019) meta-analysis, may decrease individual willingness to call the police. This possibility, however, has not been tested in prior research. Therefore, it remains unknown whether the group position thesis (Blumer, 1958) and Tyler's (1990) process-based model can explain the relationship between ethnicity and willingness to call the police.

Third, although social context has been the focus of much criminological research over the past several decades (Sampson et al., 2002), limited attention has been paid to examining the effect of ethnic context on individual willingness to call the police. This gap is significant because neighborhood ethnic composition may influence individual willingness to call the police. According to the minority threat perspective, a large minority population size is hypothesized to pose a threat to the majority, who then may demand intensified social control to maintain its dominance and privileges (Blalock,

1967). Several studies have applied this theoretical perspective to investigate the effect of Hispanic population size on a variety of social control outcomes, such as police force size (e.g., D'Alessio et al., 2005), police use of excessive force (e.g., Smith & Holmes, 2014), sentencing severity (e.g., Wang & Mears, 2010a, 2010b), and attitudes toward punitive crime control (Welch et al., 2011), as well as residents' attitudes toward the police (e.g., McNeeley & Grothoff, 2016). By extension, then, Hispanic population size may affect resident willingness to call the police, which may be conceptualized as a form of informal social control.

Alternatively, social disorganization theory can be used to explain the relationship between ethnic composition and resident willingness to call the police. According to social disorganization theory, structural disadvantages in neighborhoods (e.g., economic deprivation, racial/ethnic heterogeneity, residential mobility) may decrease residents' levels of informal social control (Shaw & McKay, 1942; Bursik & Grasmick, 1993, 1995; Sampson et al., 1997). In fact, drawing from social disorganization theory, some studies have emphasized the effect of ethnic composition on various social outcomes (e.g., Sampson & Bartusch, 1998; Sampson et al., 1997; Silver & Miller, 2004). For example, Sampson and colleagues (1997) suggested that ethnic and linguistic heterogeneity may impede collective efficacy, defined as the capacity of residents to realize common values and to engage in informal social control. In this study, Hispanic population size, along with percent foreign born, was used to operationalize immigrant concentration, and the authors found that immigrant concentration was significantly and negatively related to collective efficacy. Although insightful, Sampson and colleagues (1997) did not analyze

the unique effect of Hispanic population size on willingness to engage in informal social control or, in this case, willingness to call the police.

Further, scholars have argued that one key to understanding the relationship between social context and informal social control is the legitimacy with which institutions such as the police are viewed (Sampson, 2002; Kubrin & Weitzer, 2003). Sampson (2002, p. 222) stated that when “the police are mistrusted, particularly in the predominantly minority communities that bear the brunt of violent crime, cooperative efforts will fail even though all residents share a desire for lower crime rates.” In fact, Hahn (1971) found that, in a disadvantaged neighborhood in Detroit, Black residents with higher levels of mistrust in police were significantly less willing to contact or assist the police than those Black residents who showed lower levels of mistrust in the police (see also Anderson, 1999; Fleury et al., 1998; Zatz & Portillos, 2000). Moreover, social context may significantly impact public satisfaction with the police (Gau et al., 2012; McNeeley & Grothoff, 2016; Sampson & Bartusch, 1998; Reisig & Parks, 2000; Wu et al., 2009) and trust in the police (Boateng, 2016; Burgason, 2017). For example, Sampson and Bartusch (1998) analyzed the data from the Project on Human Development in Chicago Neighborhoods (PHDCN) and found that concentrated disadvantage was negatively associated with residents’ dissatisfaction with local police services and with legal cynicism. Overall, social disorganization theory and prior research suggest that the ethnic composition of a neighborhood may affect perceptions of police legitimacy, which in turn may affect resident willingness to engage in informal social control. This, however, has not been empirically tested.

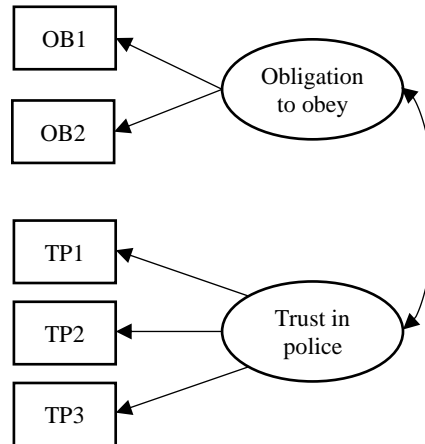
Proposed Study

This dissertation contributes to an emerging literature on ethnicity and willingness to call the police to report a crime by filling the aforementioned gaps in prior research. To this end, the dissertation addresses three sets of interrelated research questions. First, in Chapter 2, I assess the measurement invariance (MI) of the perceptions of police legitimacy scale across non-Hispanic Whites and Hispanics, using robust techniques to demonstrate the psychometric qualities of the theoretical construct. I first confirm that perceptions of police legitimacy consists of two theoretical concepts (i.e., obligation to obey and trust in police) by conducting two-factor correlated confirmatory factor analysis (CFA) model (see Figure 1.1).³ To test the measurement invariance of police legitimacy across non-Hispanic Whites and Hispanics, I perform a series of analyses to evaluate the different types of invariance including configural, metric (loading), scalar (intercept), and residuals invariance.

³ Marsh et al. (1998) recommend that when there are only two items per factor in a multifactor congeneric model, large sample sizes should be used ($n \geq 400$) to be confident about obtaining a fully proper solution (see also Bollen, 1989). Given this argument, obligation to obey can be adequately presented by two items with the large sample size in this study ($n = 1472$).

Figure 1.1

Two-factor CFA Model for Perceptions of Police Legitimacy



Second, in Chapter 3, I assess whether there are ethnic differences in willingness to call the police to report crime. Specifically, I first assess whether Hispanics tend to perceive the police as less legitimate compared to non-Hispanic White counterparts, net of important individual-level controls such as age, gender, education attainment, employment, marital status, residential stability, citizenship, and primary language that respondents use at home. Second, I test whether perceptions of police legitimacy is positively associated with willingness to call the police. Third, I investigate whether perceptions of police legitimacy partially mediates the effect of ethnicity on willingness to call the police (see Figure 1.2). Thus, the following hypotheses are tested:

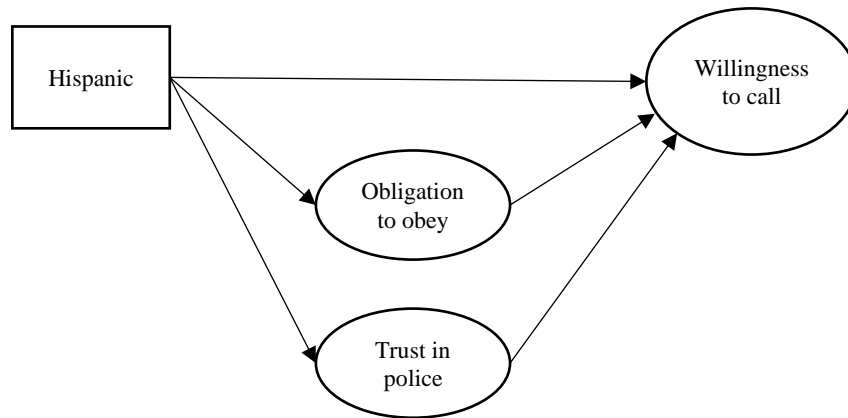
Hypothesis 3.1: Hispanics will perceive police as less legitimate than non-Hispanic Whites do.

Hypothesis 3.2: Perceptions of police legitimacy will be positively related to willingness to call the police to report crime.

Hypothesis 3.3: Perceptions of police legitimacy will mediate the relationship between ethnicity and willingness to call the police to report crime. That is, Hispanics will hold more negative perceptions of police legitimacy than non-Hispanic Whites, which in turn will decrease their willingness to call the police to report crime.

Figure 1.2

Hypothesized Mediating Effects of Perceptions of Police Legitimacy on the Relationship between Ethnicity and Willingness to Call the Police to Report a Crime



Third, in Chapter 4, I examine the effect of ethnic context (i.e., neighborhood-level Hispanic population size) on willingness to call the police to report a crime. In particular, drawing from the minority threat perspective and social disorganization theory, I developed five hypotheses about the effect of Hispanic population size on individual willingness to call the police. Specifically, to examine the relationship between Hispanic population size and individual willingness to call the police to report a crime, hypothesis 1 and hypothesis 2 are derived from the minority threat perspective, and

hypothesis 3 and hypothesis 4 are derived from social disorganization theory (see Figure 1.3).

Hypothesis 1: Hispanic population size will be positively related to perceived risk of victimization and actual victimization.

Hypothesis 2: Perceived risk of victimization and actual victimization will be positively related to individual willingness to call the police to report a crime.

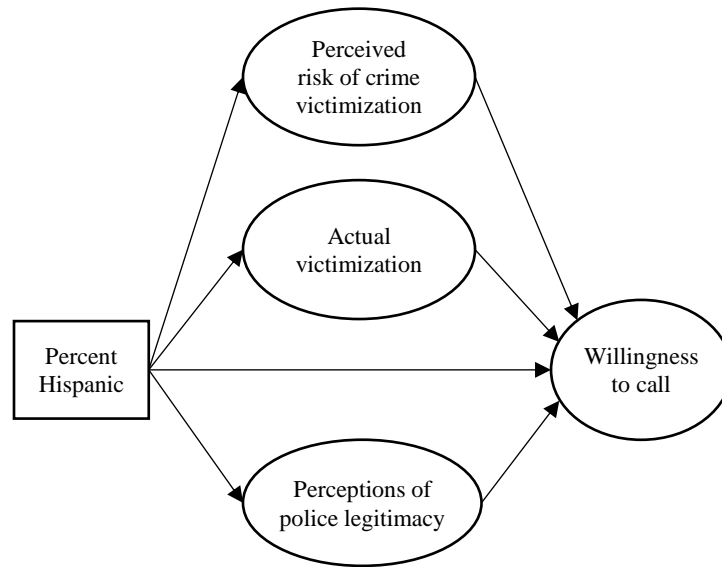
Hypothesis 3: Hispanic population size will be negatively related to individual perceptions of police legitimacy.

Hypothesis 4: Perceptions of police legitimacy will be positively related to individual willingness to call the police to report a crime.

Hypothesis 5: The relationship between Hispanic population size and willingness to call the police to report a crime will be partially mediated by perceived risk of victimization, actual victimization, and perceptions of police legitimacy.

Figure 1.3

Hypothesized Pathways that Draw from the Minority Threat Perspective and Social Disorganization Theory to Test the Mediating Relationship between Hispanic Population Size and Willingness to Call the Police to Report a Crime



Data and Measures

Data used for this dissertation were collected as part of the Arizona Crime Victimization Survey (AZCVS) conducted by the Arizona Criminal Justice Commission's Statistical Analysis Center (AZSAC) (Stevenson, 2014; Nuño, 2018).⁴ The

⁴ The AZCVS was funded by the US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (BJS, 2010-BJ-CX-K021), as a call for developing local area estimates of victimization (i.e., state and sub-state estimates). The Arizona Statistical Analysis Center (AZSAC) obtained funding to support the project and subcontracted with Arizona State University's Center for Violence Prevention and Community Safety to collect the AZCVS data. The AZCVS instrument was modeled after the National Crime Victimization Survey (NCVS) instrument, which was designed for longer in-person interviews and later modified for brief telephone interviews. This instrument also included additional information on whether respondents had reported their victimization to the police, and if not, the reasons they chose not to report their victimization, their willingness to call the police to report future crime, residents' perceptions of local police agencies, and their access to victim assistance programs.

survey was conducted during February and March of 2013. Along with estimates of violent, property, identity theft, and hate crime victimization for Arizona, the AZCVS collected extensive information on Arizona respondents' willingness to call the police to report a crime, perceptions of local police agencies, perceived risk of victimization, and basic demographics (e.g., gender, age, race/ethnicity, citizenship status).

The AZCVS employed random digit dialing (RDD) and a computer-assisted telephone interviewing (CATI) system with mutually exclusive samples of landline and cell phone numbers. Incorporating both landline and cell phone numbers into the sampling frame allowed researchers to eliminate potential biases, such as coverage bias and nonresponse bias, that have been associated with sampling exclusively from landline or cell phone users (see Brick et al., 2006; Link et al., 2007). In addition, phone interviews were conducted in both English and Spanish, considering large Hispanic population in Arizona. By employing Spanish speaking interviewers, the project was able to accommodate this population. The final sample included 1,878 completed surveys (1,336 via a landline phone and 542 via a cell phone) out of 23,925 telephone numbers that were considered for participation, leading to the final response rate of 7.8%.⁵

⁵ Of the total of 23,925 telephone numbers, 7,962 were non-responsive numbers (e.g., disconnected/non-working); 8,702 were unoccupied households; 5,139 refused to participate, and 244 completed a partial interview. The response rate was calculated using Response Rate 5 (RR5) which is suggested by the American Associated for Public Opinion Research (AAPOR) because the project assumes that there are no eligible cases among the cases of unknown eligibility (The American Association for Public Opinion Research, 2016). Response rates for telephone interviews in social science research have declined since 1979 (Curtin et al., 2005). After decades of decline, since 2012, they have plateaued below 10% (Keeter et al., 2017). Despite that, several studies consistently found little evidence for a relationship between response rate and nonresponse bias in survey research (Curtin et al., 2000; Groves & Peytcheva, 2008; Hendra, & Hill, 2019; Keeter et al., 2000, 2006; Pickett et al., 2018).

Since Chapter 2 and Chapter 3 focus on individual-level items and characteristics, I use only AZCVS data. In Chapter 4, I use the AZCVS and contextual-level data extracted from the US Census 2013 American Community Survey 5-Year estimates. The contextual-level data consist of zip-code characteristics (e.g., zip-code-level percentages of Hispanic residents). All measures used in Chapters 2, 3, and 4 are presented in Tables 1.1, 1.2, and 1.3, respectively.

Table 1.1

*Variables for Measurement Invariance Testing of Perceptions of Police Legitimacy
(Chapter 2)*

Variable Name	Definition (items)
<i>Police legitimacy scale</i>	
Obligation to obey	<ul style="list-style-type: none"> You should accept police decisions, even if you think they are wrong. You should do what police tell you to do even if you disagree.
Trust in police	<ul style="list-style-type: none"> They can be trusted to make decisions that are right for my community. Most police officers in my community do their job well. They generally act professionally.

Table 1.2

Variables for Examining the Individual-level Ethnic Effect on Willingness to Call the Police to Report a Crime
(Chapter 3)

Variable Name	Definition (items) and Coding
<u>Dependent Variable</u>	
<i>Willingness to call the police</i>	1) How likely it is that you would call the police to report a minor (misdemeanor) crime? 2) How likely it is that you would call the police to report a serious (felony) crime? 3) How likely it is that you would call the police to report a theft/burglary where you were the victim? 4) How likely it is that you would call the police to report a violent crime where you were the victim?
<u>Independent Variable</u>	
<i>Hispanic</i>	Respondent's ethnicity (1 = Hispanic; 0 = non-Hispanic White)
<u>Mediating Variable</u>	
<i>Perceptions of Police legitimacy</i>	1) You should accept police decisions, even if you think they are wrong 2) You should do what police tell you to do even if you disagree 3) They can be trusted to make decisions that are right for my community 4) Most police officers in my community do their job well 5) They generally act professionally
<u>Control Variables</u>	
<i>Perceived crime victimization</i>	1) How safe do you feel in your community? (reversely coded) 2) How often are you fearful of being the victim of a violent crime? 3) Are you concerned about someone will break into your home while you are not there? 4) Are you concerned about someone will break into your home while you at home? 5) Are you concerned about having your property vandalized?
<i>Victimization</i>	In the last 12 months, were you the victim of a property crime/violent crime/fraud/hate crime? (1 = yes; 0 = no)
<i>Female</i>	Respondent's sex (1 = female; 0 = male)
<i>Age</i>	Respondent's reported age in 2013 (years)
<i>Education</i>	Respondent's education (1 = less than 12th grade, 2 = high school, 3 = obtained GED, 4 = some undergraduate college, 5 = bachelor's degree, 6 = post graduate degree)
<i>Employed</i>	Respondent's employment status (1 = employed full time or part time, or self-employed; 0 = Otherwise)
<i>Married</i>	Respondent's marital status (1 = married; 0 = Otherwise)
<i>Residential stability</i>	Respondent's reported months that they have lived at their current address
<i>Citizenship status</i>	Respondent's citizenship status (1 = citizen; 0 = non-citizen)
<i>English in home</i>	Language that respondent usually speaks at home (1 = English; 0 = other languages)

Table 1.3

Variables for Examining the Neighborhood-level Ethnic Effect on Willingness to Call the Police to Report a Crime (Chapter 4)

Variable Name	Definition (items) and Coding
<u>Dependent Variable</u>	
<i>Willingness to call the police</i>	1) How likely it is that you would call the police to report a minor (misdemeanor) crime? 2) How likely it is that you would call the police to report a serious (felony) crime? 3) How likely it is that you would call the police to report a theft/burglary where you were the victim? 4) How likely it is that you would call the police to report a violent crime where you were the victim?
<u>Independent Variable</u>	
<i>Percent Hispanic</i>	Percentage of the residents of a zip code area that are Hispanics (2013)
<u>Intervening Variables</u>	
<i>Perceived crime victimization</i>	1) How safe do you feel in your community? (reversely coded) 2) How often are you fearful of being the victim of a violent crime? 3) Are you concerned about someone will break into your home while you are not there? 4) Are you concerned about someone will break into your home while you at home? 5) Are you concerned about having your property vandalized?
<i>Actual victimization</i>	In the last 12 months, were you the victim of a property crime/violent crime/fraud/hate crime? (1 = yes; 0 = no)
<i>Perceptions of police legitimacy</i>	1) You should accept police decisions, even if you think they are wrong 2) You should do what police tell you to do even if you disagree 3) They can be trusted to make decisions that are right for my community 4) Most police officers in my community do their job well 5) They generally act professionally
<u>Neighborhood-level Control Variables</u>	
<i>Percent Black</i>	Percentage of residents in a zip code area that are Blacks (2013)
<i>Percent unemployed</i>	Percentage of unemployed residents over the age of 16 (2013)
<i>Residential instability</i>	A rate of households who have moved in current residence in 2010 or later divided by the total households in 2013
<i>Social service support</i>	A rate of social service support: number of employees who were in an occupation of community and social services divided by the zip code population over the age of 16 and in the labor force in 2013
<u>Individual-level Control Variables</u>	
<i>Female</i>	Respondent's sex (1 = female; 0 = male)
<i>Hispanic</i>	Respondent's ethnicity (1 = Hispanic; 0 = non-Hispanic White)
<i>Age</i>	Respondent's reported age in 2013 (years)

Variable Name	Definition (items) and Coding
<i>Education</i>	Respondent's education (1 = less than 12th grade, 2 = high school, 3 = obtained GED, 4 = some undergraduate college, 5 = bachelor's degree, 6 = post graduate degree)
<i>Employed</i>	Respondent's employment status (1 = employed full time or part time, or self-employed; 0 = Otherwise)
<i>Married</i>	Respondent's marital status (1 = married; 0 = Otherwise)
<i>Residential stability</i>	Respondent's reported months that they have lived at their current address
<i>Citizenship status</i>	Respondent's citizenship status (1 = citizen; 0 = non-citizen)
<i>English in home</i>	Language that respondent usually speaks at home (1 = English; 0 = other languages)

Organization of Dissertation

The remainder of this dissertation is organized into four chapters. Specifically, Chapter 2 assesses the measurement invariance of perceptions of police legitimacy across non-Hispanic White and Hispanic residents in Arizona. Chapter 3 examines the relationship between ethnicity and willingness to call the police to report a crime. Chapter 4 tests the effect of Hispanic ethnic context—in this case, zip code-level Hispanic population size—on willingness to call the police to report a crime. In each of these chapters, I provide a review of the relevant theory and its empirical evidence; a description of the data, measures, and methods; and a discussion of the findings. Chapter 5 concludes with a summary of findings from Chapters 2, 3, and 4, and discusses their implications for theory, research, and policy.

CHAPTER 2

MEASUREMENT INVARIANCE OF PERCEPTIONS OF POLICE LEGITIMACY BETWEEN NON-HISPANIC WHITES AND HISPANICS

Introduction

The tensions between racial/ethnic minorities and law enforcement have brought the issue of police legitimacy to the forefront of public discourse in the United States. A number of studies have found significant variation in perceptions of the police across different racial/ethnic groups (e.g., Brunson, 2007; Decker, 1981; Hagan et al., 2005; Johnson et al., 2017; Rice & Piquero, 2005; Sunshine & Tyler, 2003; Tyler, 2005; Tyler & Huo, 2002; Weitzer & Tuch, 1999, 2005, 2006; Wortley et al., 1997). For example, among people who have been stopped by the police, Blacks and Hispanics have been consistently less likely than Whites to think that the police behaved properly and had provided a legitimate reason for stopping them (Langton & Durose, 2016). Studies conducted outside the US (e.g., UK, Canada, Australia) have similarly found significant differences in perceptions of police legitimacy across different racial/ethnic groups (e.g., Madon et al., 2017; Murphy & Cherney, 2012; Sargeant et al., 2014; Tankebe, 2013; Wortley & Owusu-Bempah, 2011).

Notably, Tom Tyler's (1990) theory of procedural justice, also known as the process-based model of policing, has become a major theoretical perspective that researchers draw upon to explain individual perceptions of police legitimacy. In particular, when applying Tyler's theoretical perspective to examine racial/ethnic differences in perceptions of police legitimacy, scholars have typically used the same

index to operationalize respondents' perceptions of police legitimacy across race and ethnicity in a study by assuming that perceptions of police legitimacy function the same for different racial and ethnic groups (e.g., Whites, Blacks, Hispanics). This assumption might not be valid, however, because different racial and ethnic group members may conceptualize the construct differently or may interpret the possible responses differently, and thus may respond differently to items of perceptions of the police legitimacy scale (see Crockett et al., 2005). To address this issue, researchers may need to evaluate measurement invariance—that is, how well a measurement model generalizes across subgroups of a population (Horn & McArdle, 1992).

Lack of evidence for measurement invariance of perceptions of police legitimacy is problematic for at least three reasons. First, not knowing whether the measure of perceptions of police legitimacy functions equivalently across the different racial/ethnic groups being compared may produce ambiguous interpretations and misleading conclusions because it is unclear whether observed group differences indicate true differences or differential item functioning (e.g., Little, 1997; Steenkamp & Banmgartner, 1998; Millsap & Olivera-Aguilar, 2012; Vandenberg & Lance, 2000). Second, failing to establish measurement invariance may impede researchers' ability to adequately test empirical questions centered around perceptions of police legitimacy. The summated/averaged scale score of a measure without consideration of measurement invariance should not be used to make valid inferences for group differences. Third, measurement invariance may have important implications for theoretical development (Horn & McArdle, 1992). For example, group difference estimations without establishing

the measurement invariance of a measure may threaten the validity of group comparison studies. Further, researchers attempting to refine or advance the theory of procedural justice through a meta-analysis would find it challenging to interpret the results if studies included in the meta-analysis had not tested measurement invariance across groups. Thus, criminologists interested in making group comparisons in perceptions of police legitimacy may first need to examine whether the measurement properties are invariant across groups.

Against this backdrop, the current study implements a theory-driven approach to assessing the psychometric properties of the measure for perceptions of police legitimacy. Specifically, I focus on a two-factor structure, which suggests that perceptions of police legitimacy are defined as two distinct dimensions (or factors): obligation to obey and trust in police. Using data from the Arizona Crime Victimization Survey (AZCVS), I aim to examine whether the two-factor model of perceptions of police legitimacy functions in the same manner across non-Hispanic Whites and Hispanics. Below, I discuss the theoretical background of perceptions of police legitimacy and measurement invariance testing. After discussing the data and methods and presenting the results, I discuss the study's implications for theory, practice, and future research.

Background

Defining Police Legitimacy

Over the past thirty years, police legitimacy has been an issue of great interest to those concerned with the relationship between citizens and the police. Modern discussions of police legitimacy are based on Weber's (1978) rational-legal form of

governmental legitimacy. Weber argues that there is a “generally observable need of any power . . . to justify itself” (p. 953). In other words, any agent or agency possessing coercive authority over society should develop a rationale for why it is necessary and appropriate for citizens to submit themselves to that authority; an agency that successfully justifies its power is said to have legitimacy. Given Weber’s assertion, modern police agencies derive their legitimacy from formalized rules, duties, and procedures (Gau, 2014). Rational legitimacy of the police will be established when members of a society believe that they owe a duty of obedience to police (see Weber, 1978, p. 215–216). In other words, police legitimacy entails citizens’ acceptance of rules, laws, and principles that define the role of police in society, as well as their willingness to grant deference to police as a consequence of the belief that police officers are authorized representatives who dutifully carry out those rules and laws (Bottoms & Tankebe, 2012; Gau, 2014).

Drawing upon Weber’s work, Tom Tyler (1990) formulated the process-based model of policing, or the theory of procedural justice, which has become the most frequently tested theoretical framework of police legitimacy. In his original work, legitimacy was defined as “acceptance by people of the need to bring their behavior into line with the dictates of an external authority” (Tyler, 1990, p. 25). When applied to policing, legitimacy plays a significant role in how law enforcement’s fair and respectful treatment of citizens translates into those citizens’ prosocial behavioral outcomes, primarily cooperation with the police (Sunshine & Tyler, 2003).

Tyler conceptualizes police legitimacy as the “belief that legal authorities are entitled to be obeyed and that the individual ought to defer to their judgements” (Tyler & Huo, 2002, p. xiv) and posits that police legitimacy has two distinctive aspects. Specifically, one aspect of police legitimacy is perceived obligation to obey legal authorities and the laws (Tyler & Huo, 2002, p. 78) or the extent to which people feel “they should comply with directives from police officers . . . irrespective of their personal feelings” (Tyler, 1990, p. 45). Individuals’ feelings of obligation to obey the police do not simply depend upon the authority’s possession of instruments of force but may also depend upon individuals’ unique social values or morals with respect to authority and institution (Beetham, 1991). The other aspect of legitimacy is institutional trust, defined as people’s beliefs that legal authorities are fair and honest and uphold their rights (Tyler & Huo, 2002, p. 78–79). This trust derives from the belief that the police will maintain the common societal morals and norms and that their decisions will be in the best interests of the society (Tyler & Jackson, 2013, 2014).

The measure of perceptions of police legitimacy with two dimensions, obligation to obey and trust in police, has been empirically examined with respect to its construct and discriminant validity. For example, Reisig and colleagues (2007) analyzed the data from a sample of 432 adults through a nationwide telephone survey and revealed that legitimacy contained these two distinctive constructs (obligation to obey and trust in the police, $\lambda = 3.47$ and 4.65 , respectively). They also found that trust in police was associated with respondent willingness to cooperate with the police and compliance with the law; obligation to obey, however, was not significantly associated with either

cooperation or compliance. Using an adult sample in Florida, Gau (2014) confirmed the Reisig et al. results, finding that obligation to obey and trust in police were two distinct constructs (also see Gau, 2011). In addition, she found that trust in police was a significant predictor of perceived obligation to obey, suggesting that legitimacy should be conceptualized as a trust-to-obligation pathway.

Importantly, many policing studies have used Tyler's framework, conceptualizing and operationalizing legitimacy as the degree to which citizens perceive an obligation to obey the police and their levels of trust in the police. Although insightful, these studies have measured police legitimacy by combining perceptions of obligation to obey and trust in police (e.g., Reisig et al., 2007; Sunshine & Tyler, 2003), using them separately (e.g., Gau, 2014; Tyler & Jackson, 2014), or using either one as a subfactor of police legitimacy (e.g., Jonathan-Zamir & Weisburd, 2013; Kochel et al., 2013; Murphy & Cherney, 2011; Reisig & Lloyd, 2009). Such inconsistencies in operationalizing legitimacy are likely to lead to inconsistencies in research findings and interpretations of the results.

Measurement Invariance

Historically, measurement quality has been evaluated based on the classical test theory (CTT) of observed score (true and error scores) (Crocker & Algina, 1986; Lord & Novick, 1968; Nunnally & Bernstein, 1994). Under the CTT framework, a manifest (i.e., observed) variable's measurement properties have been evaluated in terms of their reliability and validity, assuming the conceptual equivalence of the underlying theoretical variable and equivalent association between operationalizations across different groups of

people. Around the turn of the 21st century, however, methodologists became critical of the validity of this assumption, especially when examining group-related differences that were not directly addressed through the traditional CTT framework (see Vandenberg & Lance, 2000, for review). Thus, researchers have increasingly directed their attention to measurement invariance within a confirmatory factor-analytic (CFA) framework (Cheung & Rensvold, 1999, 2002; Rensvold & Cheung, 1998; Steenkamp & Baumgartner, 1998; Vandenberg, 2002).⁶ The CFA framework allows researchers to directly evaluate whether the measure of interest is invariant across groups using the latent variable modeling method (Meredith, 1993; Vandenberg & Lance, 2000).

The measurement structure of a latent factor and the survey items used to construct the latent factor should be “invariant” when comparing mean scores of a latent factor across subgroups of a population (e.g., males vs. females, whites vs. Hispanics; see Rogers et al., 2020) or across time (e.g., pre-test and post-test; see Mäkikangas et al., 2006). According to Meredith (1993), measurement invariance is defined as individuals from different groups having equal conditional probabilities of having a certain observed score, given that they share the same score on the underlying latent construct. If the measurement is not invariant across groups, potential bias may be present in the latent construct (Horn & McArdle, 1992; Vandenberg & Lance, 2000). For instance, if people’s responses to survey items in one group systemically differ when compared to those in another group (e.g., a response of “2” on an item may mean something different between

⁶ There is another approach to evaluate measurement invariance using an item response theory (IRT) framework (see Tay et al., 2015, for review). Here, I focus exclusively on the CFA framework because CFA is more commonly used than IRT (Meredith, 1993; Putnick & Bornstein, 2016; see Meade & Lautenschlager, 2004, and Kim & Yoon, 2011, for a comparison between CFA and IRT approaches).

the two groups), a group mean comparison may not be desirable. Therefore, demonstration of measurement invariance is a logical prerequisite to the evaluation of substantive hypotheses regarding group differences, regardless of whether the comparison is as simple as a between-group mean differences test or as complex as testing whether some theoretical structural model is invariant across groups (Vandenberg & Lance, 2000, p. 9).

Measurement invariance testing allows us to assess the measurement equivalence of a construct across subgroups of a population. Generally, measurement invariance tests are recommended using multisample application of CFA. This method, also called multigroup CFA (MGCFA), permits testing for invariance by setting cross-group constraints and comparing more restricted with less restricted models (e.g., Baumgartner & Steenkamp, 1998; Byrne et al., 1989). Figure 2.1 shows the measurement models for two respective groups (A and B). It presents a case where a set of items measures two underlying (latent) constructs (ξ_1 and ξ_2) with their respective indicators for each group. In addition, Equations 1.1 and 1.2 demonstrate specific aspects of the measurement invariance that are testable within an MGCFA framework. Specifically, Equation 1.1 indicates the relationship between the latent factor scores (ξ_k) and the continuous observed scores (X_k) among k items in the group g ,

$$X_k^g = \tau_k^g + \lambda_k^g \xi_j^g + \delta_k^g \quad (1.1)$$

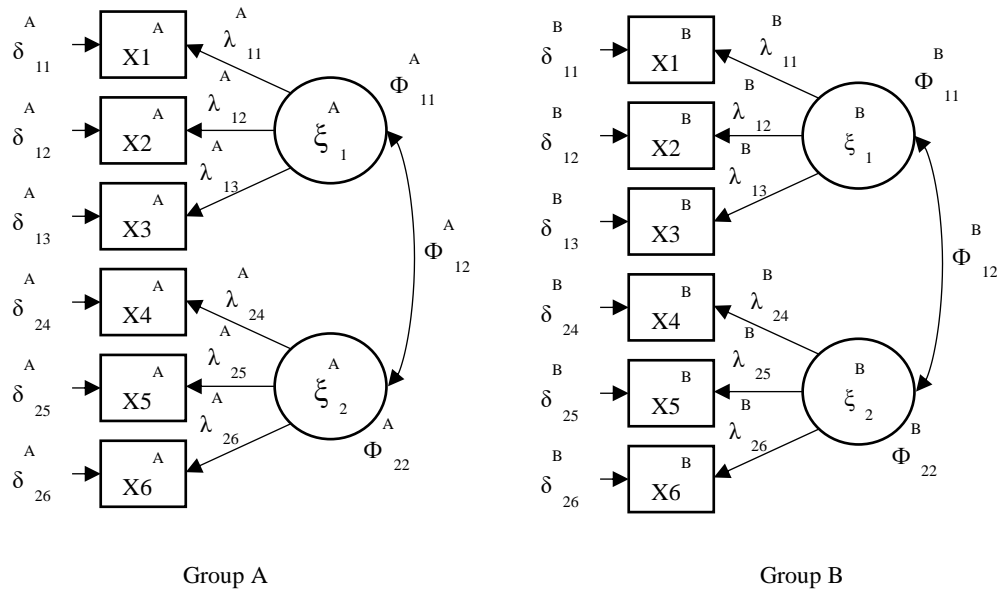
where X_k^g = a vector of items comprising the composite measure, τ_k^g = a vector of estimated regression intercepts, λ_k^g = estimated regression slopes relating the X_k^g to the ξ_j^g , ξ_j^g = a hypothetical construct of interest, and δ_k^g = a vector of unique factors or effort of the indicator X_k^g . Assuming that ξ_j^g is not correlated with δ_k^g (i.e., $E[\xi_j^g, \delta_k^g] = 0$), the covariance equation – a metric algebraic equation that links the measurement structure (see Figure 2.1) to the manifest covariance matrix – that follows from Equation 1.1 is

$$\Sigma^g = \Lambda^g \Phi^g \Lambda^{g'} + \Theta_\delta^g \quad (1.2)$$

where Σ^g = a matrix of variances and covariances among the k items for group g , Λ^g = a matrix of items' factor loadings on the latent constructs ($\Lambda^{g'}$ is transpose of Λ^g), Φ^g = a matrix of the variances and covariances among the ξ_j^g , and Θ_δ^g = a diagonal matrix of unique (error) variances. Equation 1.2 is the fundamental covariance equation for factor analysis that models observed item covariances as a function of common (ξ_j^g) and unique (δ_k^g) factors (see Jöreskog & Sörbom, 1996, p. 3). Each group has its own parameter matrix implied by Equation 1.2 that allows researchers to test measurement invariance within a CFA framework.

Figure 2.1

The Implied Two-group Measurement Model



According to Widaman and Reise (1997), testing measurement invariance entails four steps: (1) examining factor structure (i.e., configural invariance), (2) testing factor loadings (i.e., weak factorial invariance), (3) investigating item intercept (i.e., strong factorial invariance), and (4) assessing item unique variance (i.e., strict factorial invariance).⁷ Each measurement invariance test examines a specific hypothesis and builds upon a less restricted model by introducing additional equality constraints on the model

⁷ Later, Vandenberg and Lance (2000) outlined eight steps for testing measurement invariance. In their paper, the first five steps consist of the main tests of measurement invariance, and the last three steps reflect the structural invariance of the derived latent factor. In this dissertation, I applied the four-step approach that Widaman and Reise (1997) suggested; these coincide with steps two to five in Vandenberg and Lance's work. Vandenberg and Lance's first step – invariance covariance matrices – was excluded in this dissertation because rejection of this test is “uninformative with respect to the particular source of measurement inequivalence” (Vandenberg & Lance, 2000, p. 36), and contemporary guidelines for MI omit this test (Milfont & Fischer, 2010; van de Schoot et al., 2012).

parameters to achieve stronger forms of invariance. As each new set of parameters is tested, the parameters known to be invariant from the previous measurement invariance model are constrained. The four steps of measurement invariance testing and their hypotheses are discussed in more detail below.

Configural Invariance

Establishing configural invariance is the first and least stringent step when assessing measurement invariance. In the measurement invariance literature, configural invariance is considered to be the “baseline” model (Bagozzi & Edwards, 1998; Marsh, 1994; Reise et al., 1993); it is also referred to as “equality of factor structures” (Cole & Maxwell, 1985) and “equal number of factors and factor patterns” (Taris et al., 1998). Configural invariance test is a test of a “weak factorial invariance” (Horn & McArdle, 1992) and essentially examines whether the same item’s factor structure holds for two or more different population subgroups by estimating both factor models simultaneously.

The null hypothesis for configural invariance is that the same pattern of fixed and free factor loadings imposed on the measures’ components (e.g., items) is invariant across groups (Horn & McArdle, 1992). In the configural invariance model, the estimated parameters do not need to be equal across groups but simply share the same factor structure pattern. If configural invariance is established (i.e., failed to reject the null hypothesis), there are two implications. First, we can conclude that respondent groups are employing the same conceptual frame of reference and thus ultimately might be compared (e.g., in tests of latent mean group differences) with reference to measures that reflect equivalent underlying constructs. Second, further testing of the additional aspect

of measurement invariance (i.e., metric invariance) may proceed. Alternatively, if configural invariance is not demonstrated across groups (i.e., the null hypothesis is rejected), there are two options: (1) refining the construct (e.g., omitting some items and retesting the model) or (2) assuming that the observed measure represents different constructs within each group and further tests are unwarranted (Putnick & Bornstein, 2016).

Metric Invariance

If configural invariance is supported, the next step is to test for metric invariance, which involves examining whether item factor loadings of a latent construct are equivalent across groups. Metric invariance is also referred to as “invariant factor patterns” (Alwin & Jackson, 1981), “equality of scaling units” (Cole & Maxwell, 1985; Schaie & Hertzog, 1985), “metric comparability” (Drasgow & Kanfer, 1985), “factorial invariance” (Horn & McArdle, 1992), “factor loading invariance” (Marsh, 1994), and “full measurement invariance” (Reise et al., 1993). Factor loadings represent the expected change in the observed score on the item per unit change on the latent variable. Therefore, in the metric invariance test, the null hypothesis is a test of invariance of scaling units across groups ($\Lambda^A = \Lambda^B$).

The metric invariance model is more restrictive than the configural invariance model in that, in addition to specifying an invariant factor pattern, loadings of items within that pattern are now constrained to be equal across groups. To test metric invariance, the fit statistics of the metric invariance model that is specified with constrained factor loadings to be equal across groups should be compared to the

configural model (Horn & McArdle, 1992; Millsap & Olivera-Aguilar, 2012). If there is no significant difference in the overall model fit between the metric and configural invariance models (i.e., metric invariance is supported, thus failing to reject the null hypothesis), respondent groups may calibrate their measure in the same way, which would mean that the values on the manifest scales have the same meaning across groups (Meredith, 1993; Vandenberg & Lance, 2000). Also, further testing of the additional aspect of measurement invariance (i.e., scalar invariance) may proceed (Millsap & Olivera-Aguilar, 2012; Schmitt & Kuljanin, 2008). However, if the overall model fit is significantly worse in the metric invariance model when compared with the configural invariance model (i.e., the null hypothesis is rejected), it indicates that constraining the factor loadings across groups significantly affects the model fit—in other words, at least one factor loading is not equivalent across the groups—and metric invariance is not supported.

Scalar Invariance

If metric invariance is supported, the next step is to test scalar invariance to examine the equivalence of item intercepts. Scalar invariance may also be referred to as “strong invariance” or “intercept invariance.” The null hypothesis for the scalar invariance test is that the vector of item intercepts are invariant across groups ($\tau^A = \tau^B$). The scalar invariance test has also been used for testing systematic response bias (e.g., leniency/sensitivity) differences between the groups when comparing the latent mean group differences (Bollen, 1989; Hancock, 2001). In cross-cultural research, for example, Chen et al. (1995) explored whether respondents from different cultural backgrounds

showed systemically different response patterns that were content-irrelevant when they were asked several attitudinal questions (e.g., value of education, satisfaction with school performance, orientation toward individualism and collectivism). They found that American respondents tended to select the extreme endpoints of non-frequency Likert-type scales more often than Japanese or Chinese respondents and suggested that the cultural differences in response style could not account for the large differences found in the comparison of group means.

The scalar invariance model is more restrictive than the metric invariance model in that, in addition to specifying an invariant factor pattern and constraining factor loadings, item intercepts of items are now constrained to be equal across groups. To examine scalar invariance, the fit statistics of the scalar invariance model that is specified with constrained measurement item intercepts to be equal across groups should be compared to the metric invariance model. If there is no significant difference in the overall model fit between the scalar and metric invariance models (i.e., scalar invariance is supported, thus failing to reject the null hypothesis), we may conclude that the degree of upward or downward bias of the manifest variable is equal across groups. In addition, further testing of the additional aspect of measurement invariance (i.e., residual invariance) may proceed (Millsap & Olivera-Aguilar, 2012; Schmitt & Kuljanin, 2008). However, if the overall model fit is significantly worse in the scalar invariance model when compared to the metric invariance model (i.e., the null hypothesis is rejected), it indicates that constraining the item intercepts across groups significantly affects the model fit because at least one item intercept is significantly different across the groups,

and scalar invariance is not supported. It is inappropriate to compare raw or latent means without demonstrating the scalar invariance of the items because it is unknown whether or not a common zero point on the latent factor is equivalent across different groups (Meredith, 1993; Steenkamp & Baumgartner, 1998.)

Residual Invariance

If scalar invariance is supported, the fourth and final step for establishing measurement residual variance can be examined—that is, testing the equivalence of item residual (i.e., unique) variances across groups. Item residual variance is composed of both item-specific variance (i.e., variance of the item that is not shared with the factor) and nonsystematic measurement error (i.e., $\Theta_{\delta k} = s_k^2 + e_k^2$). Residual invariance is also referred to as “strict invariance,” “invariant disturbance covariance structures” (Alwin & Jackson, 1981), “invariant error variances” (Bagozzi & Edwards, 1998; Steenkamp & Baumgartner, 1998; Taris et al., 1998), and “equality of reliabilities” (Schaie & Hertzog, 1985). The null hypothesis for the residual invariance test is that the matrix of error variance and covariances is invariant across groups ($\Theta^A = \Theta^B$).

The residual invariance model is more restrictive than the scalar invariance model in that, in addition to specifying an invariant factor pattern and constraining factor loadings and intercept, items’ residuals are now constrained to be equal across groups. To examine residual invariance, the fit statistics of the residual invariance model that is specified with constrained measurement item residuals to be equal across groups should be compared to the scalar invariance model. If there is no significant difference in the overall model fit between the residual and scalar invariance models (i.e., residual

invariance is supported, thus failing to reject the null hypothesis), we may conclude that the items were measured with the same precision in each group and consider that group differences on any item are due only to group differences on the common factors.

However, if the overall model fit is significantly worse in the residual invariance model, it demonstrates that constraining the residuals across groups significantly affects the model fit—that is, at least one item residual is significantly different across groups, and residual invariance is not supported. Lack of residual invariance indicates that the latent structure may be influenced differently by one or more extraneous factors that are not modeled, which will turn into inaccurate comparisons across groups (DeShon, 2004). Some researchers, however, have suggested that residual invariance across groups is an unreasonable constraint that frequently will not hold when analyzing real-world data (Dimitrov, 2010; Little, 2013; Schmitt & Kuljanin, 2008; Widaman & Reise, 1997).

Proposed Study

The purpose of this paper is to investigate whether the scale of perceptions of police legitimacy functions differently across two main groups of residents in Arizona: non-Hispanic Whites and Hispanics. Although perceptions of police legitimacy in general have been widely studied (e.g., Brunson, 2007; Decker, 1981; Hagan et al., 2005; Johnson et al., 2017; Rice & Piquero, 2005; Sunshine & Tyler, 2003; Tyler, 2005; Tyler & Huo, 2002; Weitzer & Tuch, 1999, 2005, 2006; Wortley et al., 1997), limited attention has been paid to investigating measurement invariance of factor structure, factor loadings, item intercepts, and residuals for the perceptions of police legitimacy scale

across different races and ethnicities. Thus, this study contributes to an emerging literature on police legitimacy by filling this particular research gap.

Data and Method

Data

This study uses data from the Arizona Crime Victimization Survey (AZCVS) that was conducted by the Arizona Criminal Justice Commission's Statistical Analysis Center (AZSAC) during February and March of 2013.⁸ The AZCVS collected information on basic demographics (e.g., gender, age, race/ethnicity, citizenship status) and respondents' victimization experience including violent, property, identity theft, and hate crime victimizations. In addition, the AZCVS asked respondents about their willingness to call the police to report future crime, their perceptions of local police agencies, and their access to victim assistance programs.

The AZCVS employed random digit dialing (RDD) and a computer-assisted telephone interviewing (CATI) system with mutually exclusive samples of landline and cell phone numbers. Incorporating both landline and cell phone numbers into the sampling frame allowed researchers to eliminate potential biases, such as coverage bias and nonresponse bias, that have been associated with sampling exclusively from landline or cell phone users (see Brick et al., 2006; Link et al., 2007; Tucker et al., 2007). In

⁸ The AZCVS was funded by the US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (BJS, 2010-BJ-CX-K021), as a call for developing local area estimates of victimization (i.e., state and sub-state estimates). The Arizona Statistical Analysis Center (AZSAC) obtained funding to support the project and subcontracted with Arizona State University's Center for Violence Prevention and Community Safety to collect the AZCVS data. The AZCVS instrument was modeled after the National Crime Victimization Survey (NCVS) instrument, which was designed for longer in-person interviews and was later modified for brief telephone interviews.

addition, phone interviews were conducted in both English and Spanish considering that more than 30 percent of Arizona residents at the time of the survey were Hispanic (US Census, 2010).

Sample

Initially, a total of 23,925 telephone numbers were called for participation in the AZCVS. Of those, 7,962 were non-responsive numbers (i.e., disconnected/non-working), 8,702 were unoccupied households, 5,139 refused to participate, and 244 completed a partial interview. The final sample included 1,878 completed survey interviews with Arizona residents, for a response rate of 7.8%.⁹

In this paper, I have included only non-Hispanic Whites and Hispanics for the analysis ($N = 1,684$); 64.4% are non-Hispanic White ($n = 1,084$) and 35.6% are Hispanic ($n = 600$). Participants are primarily US citizens (94.4%; $n = 1,589$) and the majority speak English at home (86.9%; $n = 1,463$). There are slightly more females (53.9%; $n = 907$) than males (46.1%; $n = 777$). Over half of the respondents (57.54%; $n = 969$) were married, and 45.5% ($n = 746$) were employed. Approximately 33% of respondents had a bachelor's degree or post-graduate degree ($n = 563$), 32.6% had some undergraduate college credit ($n = 550$), and 31.1% had, at most, completed high school ($n = 524$).

⁹ The response rate was calculated using Response Rate 5 (RR5), which is suggested by the American Association for Public Opinion Research (AAPOR), because the project assumes that there are no eligible cases among the cases of unknown eligibility (The American Association for Public Opinion Research, 2016). Response rates for telephone interviews in social science research have declined since 1979 (Curtin et al., 2005). After decades of decline, since 2012, they have plateaued below 10% (Keeter et al., 2017). Despite that, several studies consistently found little evidence for a relationship between response rate and nonresponse bias in survey research (Curtin et al., 2000; Groves & Peytcheva, 2008; Hendra & Hill, 2019; Keeter et al., 2000, 2006; Pickett et al., 2018).

Measures

Following Tyler (1990), the measure of perceptions of police legitimacy consists of two dimensions: obligation to obey and trust in police. A total of five items are used to construct perceptions of police legitimacy. Specifically, two items are used for obligation to obey: OB1 – “You should accept police decisions, even if you think they are wrong;” OB2 – “You should do what police tell you to do, even if you disagree.” In addition, three items are used for trust in police: TP1 – “Police can be trusted to make decisions that are right for my community;” TP2 – “Most police officers in my community do their job well;” TP3 – “They generally act professionally.” All items are presumed to correlate with each other, and responses were originally rated on a 4-point scale ranging from 1 (strongly agree) to 4 (strongly disagree). After reverse coding all of the items, higher scores indicated a higher level of obligation to obey and more trust in police.

Analytic Strategy

The analyses, conducted in Mplus 8 (Muthén & Muthén, 1998-2017), are organized to proceed in several stages. First, I evaluate whether the same general factor structure of perceptions of police legitimacy is supported in the non-Hispanic White and Hispanic groups. To ensure that the same basic model fits each sample, I conduct multigroup Confirmatory Factor Analysis (MGCFAs) on each of them separately, using the weighted least square mean and variance adjusted (WLSMV) estimator to assess model parameters and obtain fit indices. Based on the theoretical conceptualization of the construct, I expect the two-factor model (obligation to obey and trust in police) to fit each group.

In particular, overall model fit is determined with multiple goodness-of-fit indices, including the Chi-square statistic (χ^2), the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis index (TLI).¹⁰ In general, models with RMSEA values equal to or below .06 reflect adequate model-data fit (Browne & Cudeck, 1992; Chen et al., 2008; Hooper et al., 2008; Hu & Bentler, 1999; Marsh et al., 2004). Models with CFI and TLI values larger than .95 are usually considered a good fit (Bentler, 1990; Hu & Bentler, 1999; Marsh et al., 2004).

Second, if the same MGCFA model is supported for both non-Hispanic White and Hispanic subsamples, I conduct additional invariance tests to determine whether the measure functions consistently across the non-Hispanic White and Hispanic respondents. Additional invariance testing involves several steps in which gradually more restrictive levels of measurement invariance are used (e.g., Cheung & Rensvold, 2002; Little, 1997). Specifically, four levels of measurement invariance are tested in the following order: configural invariance, metric invariance, scalar invariance, and residual invariance.

Configural invariance examines the equivalence of the factor structure by specifying the same factor structure for both non-Hispanic White and Hispanic subsamples. This level of invariance tests only the overall structure. Specifically, I examine whether the two-factor model is relevant and whether the same pattern of fixed and freed loadings hold for the same items across the two groups. If configural invariance is supported, I would conclude that both non-Hispanic Whites and Hispanics equally hold

¹⁰ Chi-square is sensitive to sample size, and the scaled Chi-square difference test has substantial power in large samples to detect small discrepancies between groups that may be of no theoretical or practical consequence (Chen, 2007; see also Brown, 2006).

the two-subfactors structure (i.e., obligation to obey and trust in police) for perceptions of police legitimacy.

If equal factor structure is established (i.e., configural invariance is supported), the next step is to test metric invariance to investigate whether the model for each group holds equal factor loadings. In this step, I constrain the loadings to equality and evaluate any decrement in model fit compared with the configural model. If metric invariance is supported, I would conclude that non-Hispanic Whites and Hispanics in the sample interpret the items in the same way (see Byrne, 1998). However, evidence that metric invariance is lacking would imply that some items are more important/salient to the construct for one group than for the other (Chen, 2007).

If metric invariance is supported, the next step is to test equal item intercepts (i.e., scalar invariance) by constraining intercepts to be equal and evaluating any change in model fit compared to the metric invariance model. At this step of analysis, I examine whether non-Hispanic White and Hispanic respondents in the sample use the response scale in similar ways. For example, if the item TP1 represents the level of trust in police and functions similarly for both non-Hispanic Whites and Hispanics, individuals in both groups with the same latent level of trust in police should have chosen the same response option for the TP1 item.

Once equal intercepts are established, I run the final step of MI testing which examines residual invariance. For the residual invariance model, I constrain each item's residual to be equal for both measurement models for both non-Hispanic Whites and Hispanics, and any items with unequal loadings and/or intercepts are allowed to vary

across groups. Then I evaluate changes in model fit compared with the scalar invariance model. If the residual invariance is supported, I would conclude that the items or observed variables of the model have the same measurement errors and similar reliabilities for both non-Hispanic White and Hispanic respondents.

In terms of model fit comparison, changes in the model fit indices are assessed from one step to the next because each of the gradually more constrained invariance models is nested within the previous models. If the adjusted Chi-square difference test between the two invariance models is not statistically significant, invariance of a more constrained model would be supported. However, given the sensitivity of the Chi-square (χ^2) difference test with large samples (high likelihood of statistically significant differences between models even when invariance is present), I use additional indices that have been recommended for comparing nested models (e.g., Campbell et al., 2008; Cheung & Rensvold, 2002; Marsh, 1994; Steenkamp & Baumgartner, 1998; Yin & Fan, 2003).¹¹ Hence, in addition to the χ^2 statistics, changes in RMSEA, CFI, and TLI index are also assessed. Specifically, changes of greater than or equal to .01 in CFI/TLI supplemented by a change of greater than or equal to .015 in RMSEA would be interpreted as a meaningful change in fit and indicative of lack of invariance (Chen, 2007; Cheung & Rensvold, 2002).

¹¹ Previous studies used items measured continuously and with data that were normally distributed. Since the items used in this study were measured at the ordinal level and not likely to have a normal distribution, assessments of invariance based on the above changes in model fit indices should be interpreted with caution.

Results

Preliminary Analyses: Data Screening

Table 2.1 presents the mean, standard deviations, and inter-item bivariate correlations for the five items that are being used to construct perceptions of police legitimacy. Average item scores range from 2.47 to 3.24 for non-Hispanic Whites and from 2.42 to 3.15 for Hispanics. In terms of item distribution, absolute skewness and kurtosis values for each item are less than 2 and 7, respectively, suggesting an acceptable degree of univariate normality (Finney & DiStefano, 2006). Specifically, skewness values range from $-.49$ to $.05$ for non-Hispanic Whites and from $-.62$ to $.00$ for Hispanics; kurtosis values range from 2.73 to 4.52 for non-Hispanic Whites and from 2.74 to 4.34 for Hispanics. Inter-item bivariate correlation coefficients range from $.12$ to $.70$ for non-Hispanic Whites and from $.14$ to $.71$ for Hispanics, respectively.

Table 2.1

Descriptive Statistics and Correlation Matrix for Non-Hispanic White and Hispanic Subsamples (n = 1,684)

Items	Non-Hispanic whites (n=1084)				Hispanics (n=600)				Correlation Matrix				
	Mean	SD	Skewness	Kurtosis	Mean	SD	Skewness	Kurtosis	OB1	OB2	TP1	TP2	TP3
OB1	2.47	0.73	0.05	2.73	2.42	0.71	0.00	2.74	1	0.49	0.17	0.15	0.14
OB2	2.84	0.67	-0.40	3.43	2.75	0.69	-0.47	3.35	0.53	1	0.22	0.18	0.21
TP1	3.18	0.60	-0.49	4.38	3.07	0.66	-0.62	4.16	0.19	0.21	1	0.64	0.71
TP2	3.24	0.56	-0.29	4.30	3.15	0.56	-0.27	4.34	0.15	0.20	0.68	1	0.71
TP3	3.22	0.56	-0.33	4.52	3.11	0.64	-0.51	4.01	0.12	0.21	0.68	0.70	1

Note. Values below the diagonal represent the correlation matrix for non-Hispanic Whites and values above the diagonal represent the correlation matrix for Hispanics.

Factor Structure: A Two-factor Model

The measurement properties of subcomponents of perceptions of police legitimacy were examined independently using MGCFA for the non-Hispanic White and Hispanic subsamples. In Figure 2.2, two-factor CFA models for both non-Hispanic Whites and Hispanics indicate that all items exhibit moderately strong standardized factor loadings on the obligation to obey and trust in police factors (all standardized loadings > .50). Latent factor covariances (.35 for non-Hispanic Whites and .33 for Hispanics) and residual variances are also similar in both models (ranging between .133 and .585). In terms of model fit, as Table 2.2 shows, both CFA models demonstrate good fit for both groups. Specifically, the Chi-square tests of model fit are not significant for both non-Hispanic Whites ($\chi^2_{(4)} = 2.810, p = .590$) and Hispanics ($\chi^2_{(4)} = 3.380, p = .496$), indicating that the two-factor CFA model fits the data well for both groups. Additional model fit indices also represent a perfect fit for both non-Hispanic Whites (RMSEA = .000; CFI = 1; and TLI = 1) and Hispanics (RMSEA = .000; CFI = 1; and TLI = 1).¹² In addition, Cronbach's alphas of obligation to obey (non-Hispanic Whites = .70, Hispanics = .66) and trust in police (both groups = .87) are consistent for both groups. Overall, the results suggest that a two-factor model provides a good fit for the non-Hispanic White and Hispanic subsamples.

¹² Models with RMSEA values equal to or below .06 reflect reasonable fits (Browne & Cudeck, 1992; Chen et al., 2008; Marsh et al., 2004), and models with CFI and TLI values larger than .95 are usually considered satisfactory (Hu & Bentler, 1999; Marsh et al., 2004).

Figure 2.2

Two-factor MGCFA Model of Perceptions of Police Legitimacy with Factor Loadings

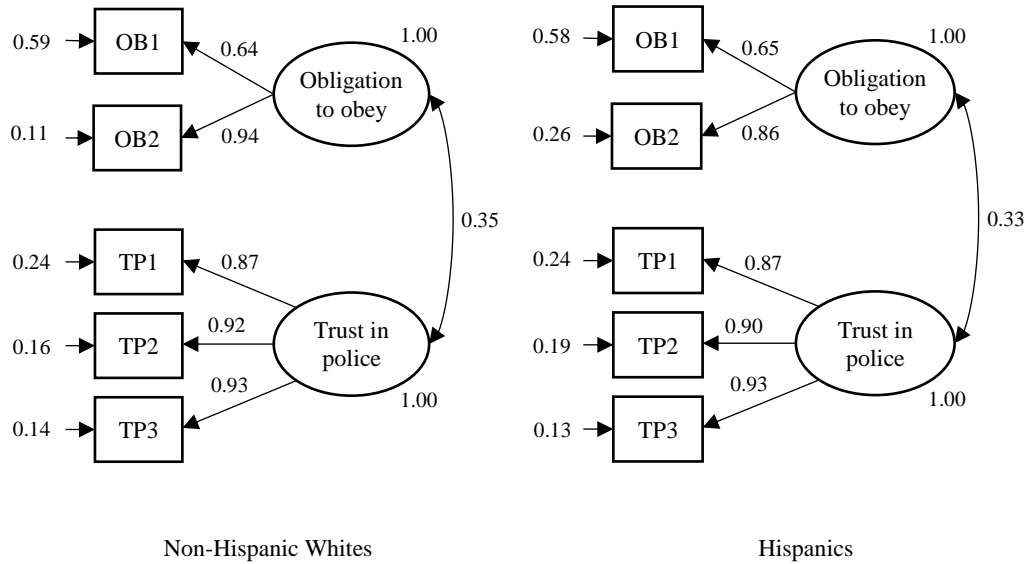


Table 2.2

Fit Indices for Confirmatory Factor Analysis Tests for Non-Hispanic White and Hispanic Subsamples

Two-factor model	χ^2	df	RMSEA	CFI	TLI
Non-Hispanic whites (n=1084)	3.841	4	0.000	1.000	1.000
Hispanics (n=600)	5.351	4	0.027	1.000	0.999

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit

Index; TLI=Tucker-Lewis Index

* $p < .05$ ** $p < .01$ *** $p < .001$

Measurement Invariance

Given that the two-factor theoretical model is a good fit for both non-Hispanic White and Hispanic subsamples, I proceeded with measurement invariance testing. Specifically, progressive restrictive assumptions of invariance between samples (i.e., configural invariance, metric invariance, scalar invariance, and residual invariance) were tested. At each step, changes in model fit indices were used to determine whether to continue testing more restrictive models or to discontinue invariance testing.

Table 2.3 presents the results of measurement invariance analyses. Several findings emerged. First, as noted above, the two-factor model is supported in non-Hispanic White and Hispanic subsamples, thus establishing configural invariance. This result suggested that non-Hispanic White and Hispanic residents in the AZCVS seemed to have the same basic conceptualization of perceptions of police legitimacy. More specifically, satisfactory configural invariance implies that both non-Hispanic Whites and Hispanics distinguished between obligation to obey and trust in police and that both groups viewed the same items as relevant to these two subfactors of perceptions of police legitimacy.

Table 2.3*Model Fit Indices taken from MGCFA and Measurement Invariance Analyses*

Models	Overall Fit Indices					Model comparison	Comparative Fit Indices				
	χ^2	df	RMSEA	CFI	TLI		$\Delta\chi^2$	Δ df	Δ RMSEA	Δ CFI	Δ TLI
M0: Configural Invariance Model (Baseline model)	6.175	8	0.000	1.000	1.000						
M1: Metric Invariance Model	14.222	11	0.022	1.000	0.999	M1 vs. M0	5.777	3	0.022	0.000	0.001
M2: Scalar Invariance Model	35.548	24	0.028	0.999	0.999	M2 vs. M1	21.370	13	0.006	0.001	0.000
M3: Residual Invariance Model	27.564	19	0.027	0.999	0.999	M3 vs. M2	8.408	5	0.001	0.000	0.000

Note. RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI=Tucker-Lewis Index; Δ = differences between the comparison and nested model.

* $p < .05$ ** $p < .01$ *** $p < .001$

Second, given that configural invariance was supported, I examined metric invariance. The metric invariance model constrained the unstandardized relationships between the items and factors to be equal across the non-Hispanic White and Hispanic subsamples. Changes in model fit indices supported metric invariance ($\Delta\chi^2$ not statistically significant, $\Delta\text{RMSEA} = .022$, $\Delta\text{CFI} = .000$, $\Delta\text{TLI} = .001$), indicating that the item factor loadings are consistent for non-Hispanic Whites and Hispanics.

Third, given support for metric invariance, scalar invariance was tested and supported ($\Delta\chi^2$ not statistically significant, $\Delta\text{RMSEA} = .006$, $\Delta\text{CFI} = .001$, $\Delta\text{TLI} = .000$). This indicates that the measurement intercepts of the perceptions of police legitimacy scale are consistent across non-Hispanic White and Hispanic respondents. In other words, the result establishes a common zero point on the factors (i.e., obligation to obey and trust in police) for non-Hispanic Whites, and for Hispanics, thus allowing meaningful comparisons of the latent means.

Last, given that scalar invariance was supported, I examined residual invariance. Changes in model fit indices indicate support for residual invariance ($\Delta\chi^2$ not statistically significant, $\Delta\text{RMSEA} = .001$, $\Delta\text{CFI} = .000$, $\Delta\text{TLI} = .000$), suggesting that residuals of the perceptions of police legitimacy scale are invariant across non-Hispanic White and Hispanic residents. Overall, results of all of the above invariance tests suggest that perceptions of police legitimacy function equivalently well for both non-Hispanic Whites and Hispanics in the sample.

Discussion and Conclusion

This study sought to assess measurement invariance of the perceptions of police legitimacy across non-Hispanic White and Hispanic residents in Arizona. The growing interest in racial/ethnic group differences on perceptions of police legitimacy and a lack of empirical evidence for measurement invariance supporting these group comparisons highlighted the need for validating the measurement invariance of perceptions of police legitimacy. In addition, to my knowledge, this study is the first to investigate measurement invariance across racial/ethnic groups. Given this background, the current study provided a strong and necessary empirical test of the validity of inferences regarding group differences in perceptions of police legitimacy and could broadly contribute to the policing literature.

The main findings can be summarized as follows. First, a two-factor structure of perceptions of police legitimacy fits the data well for both non-Hispanic White and Hispanic subsamples, thus configural invariance was supported. Second, metric, scalar, and residual invariance of perceptions of police legitimacy were established across non-Hispanic Whites and Hispanics. In other words, multiple-groups CFA goodness-of-fit indices demonstrated provisional evidence of equal factor loadings, item intercepts, and residuals across non-Hispanic Whites and Hispanics, indicating that there is no differential item functioning across the two groups. These two findings may imply that variation in perceptions of police legitimacy between Whites and Hispanics observed in prior research is reflective of the true variation of this construct (e.g., Langton & Durose, 2016). Thus, prior research that observed ethnic group differences in perceptions of

police legitimacy, especially among Whites and Hispanics, might be valid and meaningful.

This study has several implications for future research. First, scholars have recently raised important questions about the conceptualization of legitimacy (Tankebe, 2013). Bottoms and Tankebe (2012), for example, have proposed a new model of legitimacy. Specifically, Bottoms and Tankebe argued that since legitimacy and obligation to obey are “. . . conceptually distinct, conflating them can only obstruct efforts to understand both concepts” (Bottoms & Tankebe, 2012, p. 106). They also insisted that legitimacy is more accurately understood as the right of an authority to wield power, which itself is fostered by four elements: (1) police lawfulness: whether the police follow the law; (2) procedural fairness: fair and respectful treatment by police; (3) distributive fairness: fairness in outcomes; and (4) police effectiveness: the degree to which police keep citizens safe (also see Tankebe, 2013). Since then, several studies have validated Bottoms-Tankebe’s police legitimacy model (e.g., Ewanation et al., 2019; Sun et al., 2018; Tankebe et al., 2016). Researchers, however, still use Tyler’s model to explain police legitimacy (Bolger & Walters, 2019). Although criminological literature has not yet reached a consensus regarding the conceptualization of police legitimacy, both Tyler’s model and Bottoms-Tankebe’s model seem to effectively capture the complex concept of legitimacy. Therefore, assessing these two different measurement models for police legitimacy would be needed to better understand what police legitimacy means and how we can capture it.

Second, future work should consider whether findings from this study can be generalized to other states. Since the current study consists only of respondents from Arizona, more research needs to be done to evaluate measurement invariance of perceptions of police legitimacy between non-Hispanic Whites and Hispanics in different states. An ideal study would include a random sample of respondents from the whole country to test the measurement invariance of the measure across non-Hispanic Whites and Hispanics.

Third, future research may implement improved sampling frames and methodology to help minimize the non-coverage bias due to the exclusion of households that do not have a landline or cell phone number. Although an adjusted sample frame by including cell phone users, which was implemented in the AZCVS, improved demographic distribution of the completed survey data in this study, difficulties remain for capturing samples of low socioeconomic (SES) and minority populations. One aspect for underrepresentation of low SES persons and minorities may be the large growth in prepaid cell phone plans (see Lifsher, 2013). According to Berzofsky and colleague (2019), individuals on prepaid plans are significantly more likely to be a minority, to have income of less than 138% of the federal poverty level (FPL), and to experience household budget stress. Consequently, limited access to prepaid cell phone users may increase the chance of biased survey estimates for these populations. Future research may improve representation in telephone-based surveys by including prepaid cell phone users.

Fourth, additional measurement invariance testing should be conducted with other diverse populations (e.g., other racial/ethnic minority groups such as Blacks and Asians,

males and females, younger and older) in order to provide additional evidence of measurement invariance of the perceptions of police legitimacy scale. The perceptions of police legitimacy scale also could be incorporated into longitudinal research to investigate intra-individual variation in perceptions of police legitimacy over the lifespan of individuals and across social context (see Liu et al., 2017).

In conclusion, this study highlights the significance of measurement invariance, in influencing the quality of research related to police legitimacy. Findings demonstrate that perceptions of police legitimacy is a multidimensional construct with two correlated subscales (i.e., obligation to obey and trust in police) for both non-Hispanic Whites and Hispanics in a large sample of adult residents in Arizona. In addition, provisional evidence of metric, scalar, and residual invariances of perceptions of police legitimacy suggests that the measure of perceptions of police legitimacy functions equivalently across these groups. This study suggests that researchers and practitioners can be more confident in their interpretation of perceptions of police legitimacy when used for White-Hispanic comparison. That said, future research should replicate this study in different settings to confirm the results. Moreover, given the importance of the relationship between citizens and the police, researchers and practitioners would benefit greatly from capturing meaningful group differences using this substantial construct.

CHAPTER 3

EXAMINING THE RELATIONSHIP BETWEEN HISPANIC ETHNICITY AND WILLINGNESS TO CALL THE POLICE

Introduction

Local police agencies play a significant role in protecting residents and their property, investigating and preventing crimes, and maintaining safety in their communities. To effectively carry out their mission, police often rely on the cooperation of community members who can provide information about crime and disorder in their neighborhoods. In particular, calling the police is considered one of the most common actions residents take to cooperate with police. For that reason, criminologists have dedicated considerable attention to studying factors that are associated with the public's willingness to call the police. Specifically, a number of studies have highlighted that demographic characteristics, such as gender, age, and race (e.g., Avakame et al., 1999; Tyler & Fagan, 2008), as well as perceptions of police legitimacy (e.g., Bolger & Walters, 2019; Reisig et al., 2012; Sunshine & Tyler, 2003; Tyler & Fagan, 2008; Tyler & Huo, 2002; Tyler & Jackson, 2014), may be relevant.

Importantly, the racial/ethnic landscape in the United States is changing, with Hispanics becoming the largest ethnic minority. In 2019, the Hispanic population in the US reached approximately 60.6 million (United States Census Bureau, 2020), and Hispanics made up more than half of the population in 104 counties, including Miami-Dade County (69%, Florida), Bexar County (61%, Texas), and San Bernardino County (54%, California) (Noe-Bustamante et al., 2020). Notably, the exponential growth of this

population in recent decades has prompted an increase in targeted police searches among Hispanics for immigration violations (Lopez et al., 2010; Martínez, 2007). Meanwhile, ethnically biased police practices may negatively affect individual perceptions of the police and willingness to cooperate with the police, which in turn may ultimately threaten community safety. As a result, it is imperative that local law enforcement agencies and policy makers have a better understanding of factors that influence willingness to call the police among Hispanic residents.

Heeding this call, a few studies have investigated Hispanic perceptions of police legitimacy and willingness to call the police (e.g., Nuño, 2018; Sunshine & Tyler, 2003; Tyler & Jackson, 2014; White et al., 2016). Although prior studies have significantly advanced scholarship, important questions and issues still remain. First, these studies have produced mixed findings. For example, Tyler and Jackson (2014) surveyed 1,603 adults in the US and found that Hispanics were significantly less willing to cooperate with the police when compared to their White counterparts, while Sunshine and Tyler (2003) found no significant differences in willingness to call the police between White and Hispanic residents in New York City. In addition, White et al. (2016) analyzed data from interviews with an adult sample of recently booked arrestees in Maricopa County, AZ and found no significant ethnic effect on cooperation with police (see also Nuño, 2018). Notably, some studies have omitted important factors that may play a significant role in Hispanic willingness to call the police, such as immigration status and the language barrier (see Herbst & Walker, 2001; Menjivar et al., 2018; Weitzer, 2014),

which may partially explain the mixed findings regarding the relationship between ethnicity and individual willingness to cooperate with the police.

Second, it is unknown what factors may influence Hispanic willingness or unwillingness to call the police. Group position thesis and Tyler's process-based model of policing may be useful here. Specifically, drawing upon the group position thesis, prior studies have found that Hispanics, when compared to their non-Hispanic White counterparts, are more likely to believe that the police are unfair and illegitimate (e.g., Buckler & Unnever, 2008; Garcia & Cao, 2005; Holmes, 1998; Lai & Zhao, 2010; Schuck & Rosenbaum, 2005; Webb & Marshall, 1995; Wu, 2014). These negative beliefs about police, according to Tyler's process-based model of policing, may decrease willingness to call the police (see meta-analysis conducted by Bolger & Walter, 2019). Therefore, the group position thesis and Tyler's process-based model may be applied to explain the observed relationship between ethnicity and willingness to call the police. This possibility has not yet been fully tested, however, and little is known about whether perceptions of police legitimacy may be an important process variable (i.e., mediator) that explains why Hispanics are less willing to call the police than their White counterparts.

Against this backdrop, the current study intends to contribute to research aimed at understanding how ethnicity influences individual willingness to call the police. In particular, this paper's main theoretical contribution is to assess whether the group position thesis and Tyler's process-based model of policing can explain the relationship between ethnicity and willingness to call the police. To this end, this study examines two

research questions. First, are Hispanics less willing to call the police than non-Hispanic Whites, net of important individual-level controls? Second, could individual perceptions of police legitimacy explain why Hispanics may be less willing to call the police? Collectively, addressing these two questions would further our understanding of the relationship between ethnicity and willingness to call the police.

Background

Hispanics and the Police in the United States

In the 20th century, Hispanics emerged as the largest minority group in the United States, signaling one of the most important demographic changes in the nation's history (Tienda & Mitchell, 2006). In 2019, the Hispanic population reached nearly 60.6 million, making up 18% of the US population (Krogstad, 2020). Although population growth among Hispanics has slowed as the annual number of births to Hispanic women has declined and immigration, particularly from Mexico, has decreased, Hispanics still account for about 52% of US population growth over the past decade (Noe-Bustamante et al., 2020). In addition, about 33% of Hispanics in the US are foreign-born residents (Noe-Bustamante & Flores, 2019), and about half of all undocumented immigrants, more than 5 million, were from Mexico in 2017 (Budiman et al., 2020). Given this influx of Hispanic immigrants to the US, along with immigration violations, Hispanics are often targeted for immigration control (Langton & Durose, 2016; Lopez et al., 2010; Martínez, 2007).

During the 1990s, federal immigration laws, such as the Anti-terrorism and Effective Death Penalty Act (AEDPA) and the Personal Responsibility and Work

Opportunity Reconciliation Act (PRWORA), created opportunities for local law enforcement agencies to become involved in immigration enforcement.¹³ Although such legislation was passed at the federal level, most local law enforcement agencies continue to lack official guidelines for immigration control practices. Thus, informal practices with respect to immigration enforcement vary widely across the US (Armenta, 2016; Decker et al., 2009; Provine et al., 2016). In other words, local law enforcement agencies, as gatekeepers of immigration enforcement, apply their own discretion when deciding whom to investigate and arrest. Using data from a 2012 national survey of more than 500 elected sheriffs, Farris and Holman (2017) examined the sheriffs' attitudes toward immigrants and their influence on local immigration control practices. The authors found that when compared with sheriffs with positive attitudes toward immigrants, sheriffs with negative attitudes were more routinely checking immigration status during traffic stops, regardless of whether or not ICE required these checks, and they were arresting individuals for nonviolent crimes.

Notably, law enforcement officers' discretionary practices may lead to negative consequences, including criminalization of immigrants and immigrant communities. In particular, since Hispanics have begun to make up the majority of the immigrant population, being Hispanic has become associated with illegality (Armenta & Vega, 2017; Chavez, 2013; Provine et al., 2016), and Hispanics have increasingly been targeted in police searches for immigration violations (Lopez et al., 2010; Martínez, 2007). Even native-born Hispanics are being stopped and some have been deported (Provine et al.,

¹³ Under AEDPA, local police officers are allowed to arrest previously deported noncitizen felons. IIRIRA authorizes training of local and state police officers to enforce federal immigration laws.

2016; Sáenz & Morales, 2015). Such increases in police involvement in Hispanic immigrant communities may impede resident willingness to voluntarily cooperate with local police. In fact, Vidales, Day, and Powe (2009) examined resident perceptions of the police in Costa Mesa, California before and after local police implemented a law that enabled police enforcement of immigration laws in that city. They found that Hispanic residents reported being more likely to be stopped in a car or on a motorcycle by the police in 2007, the year in which police began enforcing immigration control, than in 2002, before police began enforcing immigration control. In addition, the authors found that Hispanics were more likely to perceive police as less helpful, and they were less willing to call the police to report a crime in 2007 than in 2002. Overall, discriminatory policing practices targeting the Hispanic population may influence community-police relations in Hispanic communities.

The Group Position Thesis and its Application to Hispanic Perceptions of Police Legitimacy

The group position thesis may be used to explain why Hispanics have less positive views of the police than their White counterparts. In particular, the thesis has been used to explain intergroup racial attitudes (Blumer, 1958; Bobo & Hutchings, 1996; Kinder & Sanders, 1996). This perspective focuses on intergroup competition for material resources, status, and power, and it suggests that racial prejudice reflects a collective “sense of group position” in relation to other racial groups (Blumer, 1958, p. 3). More specifically, on the one hand, members of the dominant group, mostly White, fear that their group is at risk of losing privileges or resources to competing racial groups.

This fear shapes their attitudes toward other racial groups in ways that defend the dominant group against perceived threats to its interests. On the other hand, members of subordinate groups believe that they are treated unfairly by the dominant group and that they need to secure a greater share of the dominant group's resources.

Notably, Weitzer and Tuch (2005) extended the group position thesis to explain the relationship between race/ethnicity and individual perceptions of the police. Specifically, Weitzer and Tuch argued that Whites tend to have favorable attitudes toward the police because they view the police as an instrument for suppressing subordinate groups (see also Weitzer, 1995). Racial and ethnic minorities, on the other hand, may be inclined to view the police as engaged in frequent abuse of minority citizens and thus as a "visible sign of majority domination" (Weitzer & Tuch, 2005, p. 1011). Weitzer and Tuch analyzed national survey data on perceptions of police and found that racial and ethnic minorities (i.e., Blacks and Hispanics) were significantly more likely than Whites to perceive police practices as racially biased. Further, the group position thesis has been applied to explain variations between Whites and non-Whites (e.g., Taylor et al., 2015) and between Whites and Blacks (e.g., Wu et al., 2009) regarding perceptions of the police. Overall, prior studies suggest that, when compared to their White counterparts, racial and ethnic minorities perceive the police as less fair, less satisfactory, and less confidence-inspiring.

Process-based Model of Policing and its Application to Hispanic Perceptions of Police Legitimacy and Willingness to Call the Police

Tom Tyler (1990) formulated the process-based model of policing that has become the most frequently tested theoretical framework for examining the dynamics of police-citizen relations. This model establishes the link between police legitimacy and cooperation with the police, which may be used to explain why Hispanics are less willing to call the police than Whites. Specifically, Tyler argues that individual perceptions of procedural justice inform individual beliefs about institutional legitimacy, and those beliefs, in turn, influence cooperation with police and compliance with the law. An important concept in Tyler's model is legitimacy, which he defines in his original work as "acceptance by people of the need to bring their behavior into line with the dictates of an external authority" (p. 25). Police legitimacy contains two theoretical components: obligation to obey authorities and trust in the police.¹⁴ Specifically, one aspect of police legitimacy is the perceived obligation to obey authorities and the law (Tyler & Huo, 2002, p. 78) or the extent to which people feel that "they should comply with directives from police officers . . . irrespective of their personal feelings" (Tyler, 1990, p. 45). The other aspect of legitimacy is institutional trust, which is defined by Tyler as the belief that

¹⁴ In recent years, a different conceptual definition of legitimacy has been suggested by other scholars (e.g., Bottoms & Tankebe, 2012; see also, Beetham, 1991; Tankebe, 2013). For example, Bottoms and Tankebe (2012) have proposed that legitimacy and obligation to obey are conceptually distinct; legitimacy contains four elements including police lawfulness, procedural fairness, distributive fairness, and police effectiveness (also see Tankebe, 2013). Since the purpose of this study is to assess the applicability of Tyler's process-based model of policing to Hispanic residents, however, it is necessary to explore the effect of ethnicity on legitimacy with two subfactors, obligation to obey and trust in police. In short, this study does not address the recent discussion of the conceptualization of police legitimacy.

legal authorities are fair and honest and uphold people's rights (Tyler & Huo, 2002, p. 78–79).

Further, perceptions of police legitimacy plays a significant role in how law enforcement's fair and respectful treatment of citizens translates into those citizens' prosocial behavioral outcomes, primarily cooperation with the police (Reisig & Lloyd, 2009; Sunshine & Tyler, 2003; Tyler & Fagan, 2008). Prior research on Tyler's process-based model has generally found strong and consistent support for the notion that individuals who have a positive perception of police legitimacy are more willing to cooperate with the police (see meta-analysis conducted by Bolger & Walters, 2019). Applying Tyler's process-based model, Hispanic residents may be less willing to call the police because they perceive the police as less legitimate than White residents do. This paper aims to assess this possibility.

Proposed Study

Building on the group position thesis and Tyler's process-based model of policing, this study develops three hypotheses to explain ethnic differences in individual willingness to call the police. Drawing from the group position thesis, which suggests that, compared with Whites, racial and ethnic minorities have a greater tendency to believe that police are unfair and illegitimate (Weitzer & Tuch, 2005), the first hypothesis predicts that Hispanics will perceive police as less legitimate than Whites do, net of other factors (e.g., demographic characteristics, immigration status, language proficiency). Further, drawing from the process-based model of policing which suggests that individuals who think police are legitimate are more likely to cooperate with the police

(Tyler & Fagan, 2008), the second hypothesis anticipates that perceptions of police legitimacy will be positively related to individual willingness to call the police. Last, combining the first two hypotheses, the third hypothesis predicts that Hispanics will be less willing to call the police than non-Hispanic Whites, and this relationship will be at least partially explained by their perceptions of police legitimacy. Specifically, when compared with non-Hispanic Whites, Hispanics may hold more negative perceptions of police legitimacy, which in turn may decrease their willingness to call the police.

Data and Method

Data

This study uses data from the Arizona Crime Victimization Survey (AZCVS) conducted by the Arizona Criminal Justice Commission's Statistical Analysis Center (AZSAC) during February and March of 2013.¹⁵ The survey collected information on basic demographics (e.g., gender, age, race/ethnicity, and citizenship status) and respondents' victimization experiences, including violent, property, identity theft and hate crime victimizations. In addition, the AZCVS queried respondents regarding their willingness to call the police to report future crimes, perceptions of local police agencies, and access to victim assistance programs.

¹⁵ The AZCVS was funded by the US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (BJS, 2010-BJ-CX-K021) as a call for developing local area estimates of victimization (i.e., state and sub-state estimates). The Arizona Statistical Analysis Center (AZSAC) obtained funding to support the project and subcontracted with Arizona State University's Center for Violence Prevention and Community Safety to collect the AZCVS data. The AZCVS instrument was modeled after the National Crime Victimization Survey (NCVS) instrument, which was designed for longer in-person interviews and was later modified for brief telephone interviews.

The AZCVS employed random digit dialing (RDD) and a computer-assisted telephone interviewing (CATI) system with mutually exclusive samples of landline and cell phone numbers. Incorporating both landline and cell phone numbers into the sampling frame allowed researchers to eliminate potential biases, such as coverage bias and nonresponse bias, that have been associated with sampling exclusively from either landline or cell phone users (see Brick et al., 2006; Link et al., 2007; Tucker, Brick, & Meekins, 2007). In addition, phone interviews were conducted in both English and Spanish in consideration of the fact that at the time of the survey more than 30% of Arizona residents were Hispanic (US Census, 2020).

Sample

Initially, a total of 23,925 telephone numbers were called seeking participation in the AZCVS. Of those numbers, 7,962 were non-responsive (i.e., disconnected/nonworking) and 8,702 belonged to unoccupied households; 5,139 of those called declined to participate and 244 completed a partial interview. The final sample includes 1,878 completed survey interviews with Arizona residents, for a response rate of 7.8%.¹⁶

As Table 3.1 shows, in the current study, only non-Hispanic Whites and Hispanics are analyzed ($N = 1,681$); 64.4% are non-Hispanic White ($n = 1,082$) and 35.6% are Hispanic ($n = 599$). Participants are primarily US citizens (94.4%; $n = 1,587$),

¹⁶ The response rate was calculated using Response Rate 5 (RR5), which is suggested by the American Association for Public Opinion Research (AAPOR), because the project assumes that there are no eligible cases among the cases of unknown eligibility (The American Association for Public Opinion Research, 2016). Response rates for telephone interviews in social science research have declined since 1979 (Curtin, Presser, & Singer, 2005). After decades of decline, since 2012, response rates have plateaued below 10% (Keeter et al., 2017). Despite this, several studies consistently found little evidence for a relationship between response rate and nonresponse bias in survey research (Curtin, Presser, & Singer, 2000; Groves & Peytcheva, 2008; Hendra & Hill, 2019; Keeter et al., 2000, 2006; Pickett et al., 2018).

and the majority indicate English as the primary language spoken at home (86.9%; $n = 1,461$). There are slightly more females (53.9%; $n = 906$) than males (46.1%; $n = 775$). Over half of the respondents (57.5%; $n = 967$) report being married, and 44.3% ($n = 745$) report being employed. Approximately 33.4% of respondents report having a bachelor's degree or post-graduate degree ($n = 562$), 32.7% report having some undergraduate college credit ($n = 550$), and 31.1% report completing high school, at most ($n = 523$).

Table 3.1.*Descriptive statistics (n = 1,681)*

Variable Name	Definition (items) and Coding	Mean/%	SD	Range	Missing (%)
<u>Dependent Variable</u>					
Willingness to call the police ^a	Call1: How likely it is that you would call the police to report a minor (misdemeanor) crime?*	3.38	0.79	1-4	2.91
	Call2: How likely it is that you would call the police to report a serious (felony) crime?*	3.80	0.48	1-4	0.36
	Call3: How likely it is that you would call the police to report a theft/burglary where you were the victim?*	3.79	0.50	1-4	0.65
	Call4: How likely it is that you would call the police to report a violent crime where you were the victim?*	3.83	0.46	1-4	0.48
<u>Independent Variable</u>					
Hispanic	Respondent's ethnicity (1 = Hispanic; 0 = non-Hispanic white)	35.63%			0.00
<u>Mediating Variables</u>					
Police legitimacy					
Obligation to obey ^b	OB1: You should accept police decisions, even if you think they are wrong*	2.45	0.72	1-4	10.95
	OB2: You should do what police tell you to do even if you disagree*	2.81	0.67	1-4	10.71
Trust in police ^b	TP1: They can be trusted to make decisions that are right for my community*	3.15	0.62	1-4	6.42
	TP2: Most police officers in my community do their job well*	3.21	0.56	1-4	6.07
	TP3: They generally act professionally*	3.19	0.57	1-4	5.12
<u>Control Variables</u>					
Fear of crime	How safe do you feel in your community? ^d	1.78	0.82	1-5	0.18
	How often are you fearful of being the victim of a violent crime? ^e	1.84	0.91	1-5	0.42
	Are you concerned about someone will break into your home while you are not there? ^{f*}	1.95	0.75	1-3	1.13
	Are you concerned about someone will break into your home while you at home? ^{f*}	1.75	0.78	1-3	1.19
	Are you concerned about having your property vandalized? ^{f*}	1.77	0.76	1-3	1.43
Victimization	In the last 12 months, were you the victim of a property crime/violent crime/fraud/hate crime? (1 = yes; 0 = no)	29.45%			0.77

Female	Respondent's sex (1 = female; 0 = male)	53.90%			
Age	Respondent's reported age in 2013 (years)	54.71	18.65	18-97	6.25
Education	Respondent's education				2.74
	1 = Less than 12th grade	6.60%			
	2 = Completed high school	20.58%			
	3 = Obtained GED	3.93%			
	4 = Some undergraduate college degree	32.72%			
	5 = Bachelor's degree	21.24%			
	6 = Post-graduate degree	12.20%			
Employed	Respondent's employment status (1 = employed full time or part time, or self-employed; 0 = Otherwise)	44.32%			2.56
Married	Respondent's marital status (1 = married; 0 = Otherwise)	57.53%			3.81
Residential stability	Respondent's reported months that they have lived at their current address	12.07	11.63	1-85	3.63
Citizen	Respondent's citizenship status (1 = citizen; 0 = non-citizen)	94.41%			3.03
English in home	Language that respondent usually speaks at home (1 = English; 0 = other languages)	86.91%			0.00

^a Response set ranging from 1 = very likely to 4 = very unlikely.

^b Response set ranging from 1 = strongly agree to 4 = strongly disagree.

^c Response set ranging from 1 = very effective to 4 = very ineffective.

^d Response set ranging from 1 = always safe to 5 = never safe.

^e Response set ranging from 1 = never to 5 = always.

^f Response set ranging from 1 = very to 3 = not at all.

* Reverse scored.

Measures

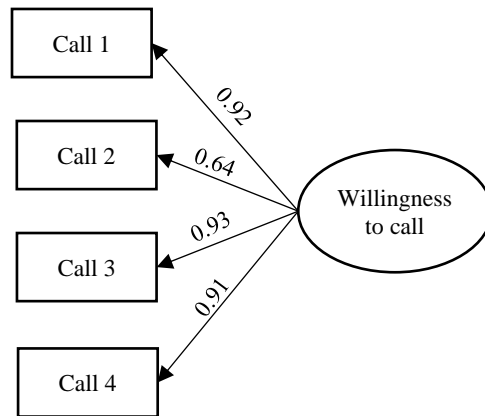
Dependent Variable

This study examines individual *willingness to call the police*. Participants were asked four questions to elicit responses indicating how likely they were to call the police to report certain types of crime: a minor (misdemeanor) crime, a serious (felony) crime, a theft/burglary where they were the victim, and a violent crime where they were the victim. The response options were on a Likert scale from 1 (very likely) to 4 (very unlikely). Their responses were reverse coded so that higher values would represent greater willingness to call the police. The Cronbach's alpha for this measure was high at .82, indicating a high level of congruence among the four items. In addition, those four items were entered into a confirmatory factor analytic model. Given that the survey items featured ordinal response sets, a robust weighted least-squares estimator was calculated using Mplus (i.e., WLSMV; Muthén & Muthén, 1998-2017). The model fit was evaluated against the Pearson Chi-square (χ^2) goodness-of-fit statistic provided by WLSMV estimation, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean-square error of approximation (RMSEA). A small non-significant Chi-square value indicates optimal fit, and values higher than .95 for CFI and TLI indicate that the tested model provides a good fit to the data, as does the RMSEA value of less than .06 (Browne & Cudeck, 1992; Chen et al., 2008; Hooper et al., 2008; Bentler, 1990; Hu & Bentler, 1999; Marsh et al., 2004). Figure 3.1 shows sufficient standardized factor loadings ($> .63$) that significantly load onto willingness to call the police (all loadings are

significant at a level of $p < .001$). The model fit statistics are good, indicating that those four items in the data reliably represent willingness to call the police (CFI = .999, TLI = .998, RMSEA = .034).

Figure 3.1

Confirmatory Factor Model of Willingness to Call the Police to Report a Crime



Note. Confirmatory factor model of willingness to call the police is featured. Entries are standardized estimates. For model fit indices: comparative fit index (CFI) = .999, Tucker-Lewis Index (TLI) = .998, root mean square error of approximation (RMSEA) = .034

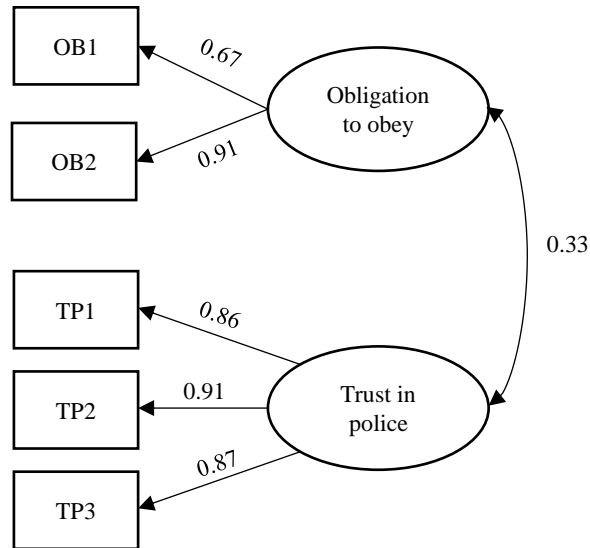
Key Variables of Interest

This study assesses the relationship between ethnicity and individual willingness to call the police, and whether this relationship is partially mediated by police legitimacy. Respondent ethnicity, *Hispanic*, is measured dichotomously; 0 indicates non-Hispanic White and 1 indicates Hispanic. Further, following Tyler’s process-based model, *perceptions of police legitimacy* consists of two dimensions: obligation to obey and trust

in police. As shown in Table 3.1, a total of five items are used to reflect perceptions of police legitimacy, including two items for obligation to obey (e.g., one should accept police decisions even if one thinks they are wrong) and three items for trust in police (e.g., police can be trusted to make decisions that are right for my community). Responses are rated on 4-point scale ranging from 1 (strongly agree) to 4 (strongly disagree) and reverse coded; higher scores indicate stronger beliefs in the obligation to obey the police and higher trust in police. The Cronbach's alpha for obligation to obey is 0.68 and for trust in police is .87, indicating a moderate to high level of consistency. Further, these five items are entered into a confirmatory factor analytic model with WLSMV estimation. Figure 3.2 shows that the two-factor correlated model of perceptions of police legitimacy fits the data well (CFI = 1.000, TLI = .999, RMSEA = .028), and the five items load significantly onto two separate sub-dimensions of perceptions of police legitimacy with sufficient standardized factor loadings ($> .67$; all loadings are significant at a level of $p < .001$).

Figure 3.2

Two-factor Correlated Model of Perceptions of Police Legitimacy



Note. Entries are standardized estimates. For model fit indices: CFI = 1.000, TLI = .999, RMSEA = .028

Control Variables

I control for several covariates to ensure that the relationship I observe between ethnicity and individual willingness to call the police is not spurious. First, *perceived crime victimization* was measured as a latent construct using five items (e.g., how safe do you feel in your community?; $\alpha = .78$). Second, I include *prior victimization* using a dummy variable (1 = yes, 0 = no). Respondents were asked whether they had been a victim of crime (i.e., property crime, violent crime, fraud, and/or hate crime) in the last 12 months. If they reported having experienced at least one of those victimizations, the

response is coded at 1. Third, I incorporate variables capturing respondents' demographics and socioeconomic status, including age (at the time of interview), gender (1 = female, 0 = male), education (a categorical variable ranging from 1 = less than 12th grade to 6 = post-graduate degree), employment (1 = employed full time or part time or self-employed, 0 = otherwise), marital status (1 = married, 0 = otherwise), and residential stability (number of months lived at current address at time of interview). Last, I include citizenship status (1 = citizen, 0 = noncitizen) and language usually spoken at home (1 = English, 0 = other language) because these variables may impact how respondents, especially Hispanic respondents, perceive the police and their willingness to call the police.

Analytic Strategy

This study's analysis proceeds in two steps. First, a t-test is used to examine whether there are any differences between non-Hispanic Whites and Hispanics regarding perceptions of police legitimacy and willingness to call the police. The mean scores are compared and effect size statistics are calculated using Cohen's *d* estimation. Second, structural equation modeling (SEM) is conducted using Mplus to assess the impact of ethnicity on individual perceptions of police legitimacy and willingness to call the police. Specifically, in Model 1, I assessed whether Hispanics perceive police as less legitimate than non-Hispanic Whites, net of individual characteristics (hypothesis 1). Model 2 examines whether perceptions of police legitimacy will be positively associated with individual willingness to call the police (hypothesis 2). Then, Model 3 investigates both

direct and indirect effects of respondent ethnicity on willingness to call the police and assesses whether perceptions of police legitimacy mediate the relationship between ethnicity and the outcome variable (hypothesis 3). Each SEM model includes both measurement (confirmatory factor analysis) and structural (regression) components. Since the indicators of the latent variables are ordinal, a robust mean and variance adjusted weighted least squares estimator are used, available in Mplus 8 (Muthén & Muthén, 1998-2017). In addition, I employed multiple imputation to deal with missing data on the observed covariates by generating 20 complete data sets, and the analyses were performed on these 20 multiply-imputed datasets (Asparouhov & Muthén, 2010).

Results

Table 3.2 shows the results from t-tests assessing the difference between non-Hispanic Whites and Hispanics regarding perceptions of police legitimacy and willingness to call the police. Review of this table indicates that Hispanics are significantly less likely than non-Hispanic Whites to act on an obligation to obey ($t = 2.111, p < .05, d = .11$) and less likely to trust police ($t = 3.742, p < .001, d = .19$). In addition, Hispanics are significantly less willing than non-Hispanic Whites to call the police ($t = 4.265, p < .001, d = .22$).

Table 3.2*Means, Standard Deviation, T-test, and Effect Size (n = 1,681)*

Variables	Non-Hispanic Whites (n = 1082)		Hispanics (n = 599)		t-values	sig.	Effect size
	Mean	SD	Mean	SD			
Police legitimacy							
Obligation to obey	2.65	0.62	2.58	0.62	2.11	*	0.11
Trust in police	3.21	0.50	3.11	0.55	3.74	***	0.19
Willingness to call the police	3.73	0.41	3.64	0.50	4.27	***	0.22

Note. Effect size = Cohen's *d***p* < .05 ***p* < .01 ****p* < .001 (two-tailed).

Next, I turn to the SEM results.¹⁷ As seen in Table 3.3, Model 1 examines the direct effect of ethnicity on perceptions of police legitimacy (hypothesis 1). First of all, the fit statistics for both obligation to obey and trust in police indicate that the models fit the data well (CFI = .995, TLI = .989, RMSEA = .018; CFI = 1.000, TLI = .999, RMSEA = .009, respectively). Further, review of Model 1 indicates that Hispanics have significantly less trust in police than non-Hispanic Whites, net of controls for a range of covariates (e.g., citizenship status and speaking English in the household) ($\beta = -.060$, $se = .03$, $p < .1$). In other words, being Hispanic reduces the levels of trust in police by 0.06 standard deviation. However, there is no statistically significant ethnic effect on obligation to obey ($\beta = -.019$, $se = .04$, $p = .592$), and therefore, hypothesis 1 is partially supported. In terms of other observed covariates, those who have lived longer at their current address are significantly less likely to show an obligation to obey, and those who use English in their home are more likely to show an obligation to obey. In addition, those who are female, older, employed, and married show significantly higher levels of trust in police; however, prior victimization experience significantly reduces the level of trust in police.

¹⁷ Before running multivariate analyses, I conducted multicollinearity diagnostics to ensure there is no harmful level of multicollinearity in the models. The variance inflation factor (VIF) was within the threshold of 4 (O'Brien, 2007), and the correlations between variables were not highly correlated, and thus, there was no critical issue regarding multicollinearity.

Table 3.3

Model for the Relationship between Ethnicity, Perceptions of Police Legitimacy, and Willingness to Call the Police to Report a Crime (n = 1,681)

Variables	Model 1						Model 2		
	Obligation to obey			Trust in police			Willingness to call the police		
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>
Hispanic	-0.02	0.04		-0.06	0.03	†	-0.11	0.04	**
Perceptions of police legitimacy									
Obligation to obey	--	--		--	--	--	0.02	0.04	
Trust in police	--	--		--	--	--	0.29	0.03	***
Observed covariates									
Perceived crime victimization	-0.02	0.03		-0.01	0.03		0.11	0.04	**
Prior victimization	-0.01	0.03		-0.11	0.03	***	-0.01	0.03	
Female	-0.04	0.03		0.06	0.03	*	0.14	0.03	***
Age	0.04	0.04		0.15	0.04	***	0.13	0.03	**
Education	-0.04	0.03		0.04	0.03		0.07	0.04	*
Employed	-0.05	0.03		0.06	0.03	†	0.05	0.04	
Married	-0.05	0.03		0.05	0.03	†	0.12	0.04	***
Residential stability	-0.07	0.04	*	-0.05	0.03		-0.03	0.03	
Citizen	0.03	0.04		-0.01	0.04		-0.01	0.04	
English in home	0.07	0.04	†	-0.00	0.03		-0.01	0.04	
Model fit statistics									
CFI		0.995			1.000			0.983	
TLI		0.989			0.999			0.979	
RMSEA		0.018			0.009			0.028	

Note. Coefficients are all standardized, *se* = standard errors

†*p* < .1 **p* < .05 ***p* < .01 ****p* < .001

Model 2 examines the effect of perceptions of police legitimacy on willingness to call the police (hypothesis 2). The model fit statistics indicate that the model fits the data well (CFI = .983, TLI = .979, RMSEA = .028). Notably, inspection of Model 2 shows that trust in police is significantly associated with willingness to call the police ($\beta = .293$, $se = .04$, $p < .001$), while obligation to obey is not significantly related to willingness to call the police ($\beta = .021$, $se = .04$, $p = .585$). Respondents who have higher levels of trust in police are significantly more willing to call the police, net of controls for other covariates. Specifically, one unit increase in trust in police will increase the willingness to call the police by .293 standard deviation. Therefore, hypothesis 2 is partially supported. In addition, being Hispanic shows a statistically significant direct effect on willingness to call the police after controlling for perceptions of police legitimacy ($\beta = -.113$, $se = .04$, $p < .01$). In terms of other observed covariates, those who are female, older, and married and those with higher levels of fear of crime and higher education attainment are significantly more willing to call the police.

Model 3 assesses the direct and indirect effects of ethnicity on willingness to call the police through obligations to obey and trust in police. Table 3.4 displays the direct effects of Hispanic ethnicity on obligation to obey, trust in police, and willingness to call the police, including control variables. In addition, Figure 3.3 depicts the significant pathways that ethnicity operates through to affect individual willingness to call the police. The model fit statistics for this model indicate that the model fits the data well (CFI = .996, TLI = .994, RMSEA = .021). Review of Table 3.4 and Figure 3.3 indicate

that Hispanic ethnicity is significantly and negatively associated with willingness to call the police ($\beta = -.09, se = .04, p < .01$) and trust in police ($\beta = -.06, se = .03, p < .1$), and trust in police is significantly and positively related to willingness to call the police ($\beta = .34, se = .04, p < .001$). Hispanic ethnicity, however, is not significantly related to obligation to obey ($\beta = -.02, se = .04, p = .584$), and obligation to obey is not significantly associated with willingness to call the police ($\beta = .00, se = .04, p = .922$).

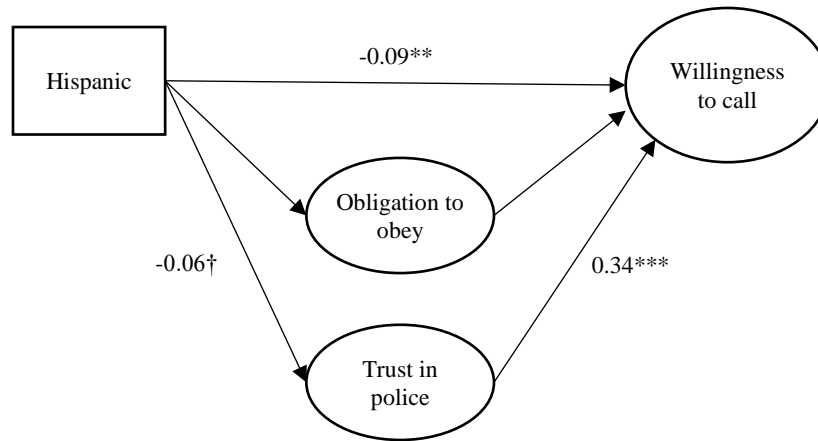
Table 3.4.*Direct Effects of Hispanic Ethnicity on Perceptions of Police Legitimacy and Willingness to Call the Police to Report a Crime (n = 1,681)*

Variables	Model 3								
	Obligation to obey			Trust in police			Willingness to call the police		
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>
Hispanic	-0.02	0.04		-0.06	0.03	†	-0.09	0.04	**
Perceptions of police legitimacy									
Obligation to obey	--	--		--	--	--	0.00	0.04	
Trust in police	--	--		--	--	--	0.34	0.04	***
Observed covariates									
Perceived crime victimization	-0.02	0.03		-0.01	0.03		0.12	0.03	**
Prior victimization	-0.01	0.03		-0.11	0.03	***	0.02	0.03	
Female	-0.04	0.03		0.06	0.03	*	0.12	0.03	***
Age	0.04	0.04		0.15	0.04	***	0.08	0.04	†
Education	-0.04	0.03		0.04	0.03		0.06	0.03	†
Employed	-0.05	0.03		0.06	0.03	†	0.03	0.04	
Married	-0.05	0.03		0.05	0.03	†	0.10	0.03	**
Residential stability	-0.07	0.03	*	-0.05	0.03		-0.01	0.04	
Citizen	0.03	0.04		-0.01	0.04		-0.00	0.04	
English in home	0.07	0.04	*	-0.00	0.03		-0.01	0.03	
Model fit statistics									
CFI					0.996				
TLI					0.994				
RMSEA					0.021				

Note. Coefficients are all standardized, *se* = standard errors†*p* < .1 **p* < .05 ***p* < .01 ****p* < .001

Figure 3.3

SEM of Ethnicity, Perceptions of Police Legitimacy, and Willingness to Call the Police to Report a Crime



Note. Entries are standardized estimates. For model fit indices: CFI = .996, TLI = .994, RMSEA = .021

Table 3.5 presents the total, direct, and indirect effects of ethnicity on individual willingness to call the police. Review of Table 3.5 indicates that the total and direct ethnic effects on willingness to call the police are statistically significant ($\beta = -.11$, $se = .04$, $p < .01$; $\beta = -.09$, $se = .04$, $p < .01$, respectively). In addition, the indirect effect of ethnicity on willingness to call the police through trust in police is statistically significant ($\beta = -.02$, $se = .01$, $p < .10$). Moreover, trust in police seems to explain about 18% (standardized coefficient: $[-.11 - (-.09)] / -.11$) of the original ethnicity effect on willingness to call the police. However, the indirect effect of ethnicity on willingness to call the

police through obligation to obey is not statistically significant ($\beta = .00$, $se = .00$, $p = .920$). Overall, the results suggest that Hispanics show a lower level of trust in police than non-Hispanic Whites, which in turn decreases Hispanic willingness to call the police. Thus, hypothesis 3 is partially supported.

Table 3.5

Total, Direct, and Indirect Effects of Ethnicity on Willingness to Call the Police to Report a Crime (n = 1,681)

Specific effects	Model 3		
	β	<i>se</i>	<i>p</i>
Total effect	-0.11	0.04	**
Direct effect	-0.09	0.04	**
Total indirect effect	-0.02	0.01	†
Specific indirect effect			
Indirect via obligation to obey	0.00	0.00	
Indirect via trust in police	-0.02	0.01	†

Note. Coefficients are all standardized, *se* = standard errors

† $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Discussion and Conclusion

The influx of immigrants from Mexico, corresponding changes in the racial and ethnic composition of the US population, and over-policing in Hispanic communities have highlighted the clear need for studying police-Hispanic relations in the United States. Building on the group position thesis and Tyler’s process-based model of policing, this study examined the relationship between ethnicity and willingness to call the police

by testing three hypotheses. Hypothesis 1 anticipates that when compared to non-Hispanic Whites, Hispanics will show more negative perceptions of police legitimacy. Hypothesis 2 predicts that perceptions of police legitimacy will be positively associated with individual willingness to call the police. Hypothesis 3 states that Hispanics will be less willing than non-Hispanic Whites to call the police, and this relationship will be at least partially mediated by their respective perceptions of police legitimacy.

Using survey data collected in Arizona, I find that Hispanics tend to have lower levels of trust in police when compared to non-Hispanic Whites, but there is no significant difference between Hispanics and non-Hispanic Whites in their opinions about obligation to obey the police. Thus, this finding partially supports hypothesis 1. With regard to hypothesis 2, I find that trust in police is positively associated with willingness to call the police; however, obligation to obey is not significantly related to willingness to call the police. Thus, I find partial support for hypothesis 2. Last, I find that Hispanics tend to show a lower level of trust in police when compared to non-Hispanic Whites, which in turn influences their willingness to call the police. Thus, I find partial support for hypothesis 3. Overall, I find all three hypotheses are partially supported.

Before discussing the theoretical implications of the findings, I want to note an unexpected finding related to immigration status and the primary language spoken at home. Specifically, I find these two variables are not significant predictors of individual willingness to call the police, an outcome that is not consistent with prior literature on police-community relations (see Herbst & Walker, 2001; Weitzer, 2014). I speculate that

the null finding associated with immigration status might be a spillover effect—that is, police officers' discretionary immigration control practices may reach beyond the target population (i.e., undocumented immigrants) to include individuals who are documented legal, permanent residents and US-born residents (Aranda et al., 2014; Ebert & Ovink, 2014). Thus, all Hispanic residents may feel targeted by the police due to their ethnicity and in turn, regardless of their immigration status, may be less willing to call the police. Further, prior studies suggest that an individual residing in the US who speaks only Spanish may misunderstand and/or misinterpret local police services and may fear that the language barrier will subject them to being questioned by the police about their legal status (Carter, 1985; Menjívar et al., 2018; Skogan & Hartnett, 1997; Walker, 1997). Given this, people who speak only Spanish may be less willing than those who also speak English to call the police. Contrary to this supposition, however, I find a null effect of the primary language spoken at home on individual willingness to call the police. I speculate that this null finding may be due to the increasing Hispanic representation among police. Specifically, according to the Bureau of Justice Statistics, the percentage of local police officers in the US who are Hispanic has risen from 8% in 1997 to 13% in 2016, an increase of 61% (Hyland & Davis, 2019), and local police departments are becoming more diverse by hiring more racial/ethnic minorities. In addition, these agencies often provide services in Spanish. Spanish-speaking officers and Spanish interpreters in a police department may allow Spanish-speaking residents to feel more comfortable when interacting with police or calling for service. Therefore, although Hispanics are less

willing than non-Hispanic Whites to call the police, their willingness is not influenced by the language spoken at home.

Importantly, findings from this study have two theoretical implications. First, this research drew on the group position thesis and Tyler's process-based model to explain the relationship between ethnicity and willingness to call the police, and I found partially supportive evidence for applying these two theoretical models for this purpose. Group position thesis has been applied to explain how different groups of people, including Blacks (e.g., Weitzer & Tuch, 2005), Asians (e.g., Wu, 2014), and immigrants (e.g., Jung et al., 2019), view the police. By integrating the group position thesis and the process-based model of policing, future research may examine whether different groups of people are willing to cooperate with the police and why they are willing/unwilling to do so. In so doing, future research can assess whether the group position thesis and Tyler's process-based model may be extended to other groups of people (e.g., Blacks, immigrants, and Muslims). Second, the current study treated perceptions of police legitimacy as two distinct factors, obligation to obey and trust in police, and found that only trust in police was significantly associated with the relationship between ethnicity and willingness to call the police. Although obligation to obey and trust in police represent police legitimacy, they are distinct subfactors that may have differing impacts on outcome variables such as willingness to cooperate with the police and willingness to comply with the law (see Bottoms & Tankebe, 2012; Tankebe, 2013; Tankebe et al., 2016). Therefore, future research may continue to treat obligation to obey and trust in police as distinctive

variables for measuring perceptions of police legitimacy when examining the effect of perceptions of police legitimacy on willingness to cooperate with the police.

This study has at least two limitations. First, it focuses on only one geographic location, Arizona, and it is unknown whether these findings can be generalized to other cities or states. For instance, in a city where the majority of residents are Hispanic (e.g., El Paso, TX, about 82% Hispanic), we may find that Hispanic residents are not less willing to call the police where the majority of police officers are also Hispanic. In this case, in-group preference may play a significant role in willingness to call the police. In fact, several scholars have found that when racial/ethnic minorities are better represented in police agencies, individuals are more likely to perceive that the police are legitimate, which ultimately could lead to greater willingness to cooperate with the police (Theobald & Haider-Markel, 2009; Wang et al., 2019; Weitzer & Tuch, 2006).

Second, since the AZCVS data were not collected for the particular purpose of this study, some important theoretical variables might be unavailable. Future studies may want to consider additional factors when studying the relationship between ethnicity and willingness to call the police. For instance, prior contacts with law enforcement may influence individual willingness to call the police. Studies have found that, compared to their White counterparts, racial and ethnic minorities are more likely to be stopped by the police (Alpert et al., 2007; Novak & Chamlin, 2012; Smith & Petrocelli, 2001), and that people who have more frequent police contacts are less willing to call the police to report crime (Carr et al., 2007; Tyler et al., 2014), especially when they feel systematically

targeted (Rengifo & Pater, 2017). In addition, several studies have found that people who hear negative stories about police from their friends, family, or the media are more likely to perceive that police officers are unfair and disrespectful (Browning et al., 1994; Gallagher et al., 2001; Warren, 2011; Weitzer & Tuch, 2006). Learning about the police through the experiences of others may have a corresponding influence on one's perception of the police, which may then impact their willingness to call the police. Therefore, future research on the relationship between ethnicity and willingness to call the police may want to consider additional factors such as prior police contact and vicarious experience with the police to provide a better understanding of this relationship.

From a policy perspective, this study is particularly important given the recent discriminatory policing practices targeting Hispanics in the United States (see Alang, 2018). The finding that trust in police mediates the relationship between ethnicity and willingness to call the police suggests that if the police want to engage Hispanic residents in collaborative crime control efforts, one of the ways they can promote collaboration is to enhance residents' levels of trust in them. This approach has the potential to improve the relationships between law enforcement agencies and Hispanic communities (see Kirk & Papachristos, 2011; Kirk & Matsuda, 2011; see also Drakulich, 2013). Related to this, police tactics commonly associated with community policing may be helpful to foster resident trust in police and to improve community-police relations in Hispanic communities. Community policing has been promoted by the federal government since

the 1960s, and police administrators and policing scholars have implemented it in a variety of forms across the United States. Community policing tactics attempt to alleviate community problems and crimes by working with the community to build resilience, collective efficacy, and social infrastructure for the co-production of public safety (National Academies of Sciences, Engineering, and Medicine, 2018). A growing body of research has produced supportive evidence suggesting that community policing can improve resident perceptions of police legitimacy and satisfaction with the police (Gill et al., 2014). Given the benefits associated with implementing community policing strategies, law enforcement agencies may be able to address some of the challenges that Hispanic residents are facing and to strengthen community members' connections with the police by enhancing resident satisfaction with and trust in police.

In conclusion, this study finds that Hispanics are less willing than non-Hispanic Whites to call the police in part because they tend to trust the police less. This finding highlights the significance of trust in police among Hispanics and its effect on their willingness to call the police. It partially supports the notion that group position thesis and Tyler's process-based model may explain the relationship between ethnicity and individual willingness to call the police. Overall, this study contributes to the emerging literature in research concerning police-community relations by assessing factors that affect Hispanic willingness to call the police, which in turn may lead to improved relations between the police and the Hispanic community.

CHAPTER 4
EXAMINING THE IMPACT OF ETHNIC CONTEXT
ON WILLINGNESS TO CALL THE POLICE

Introduction

The relationship between social context and informal social control has been the focus of much criminological research throughout the past several decades. Overall, this body of work has documented that social context, including structural characteristics such as economic condition, racial composition, and residential mobility, has a significant impact on informal social control, even after accounting for individual-level factors (e.g., Sampson et al., 1997; Warner, 2007). Although the extant research has significantly advanced criminological scholarship, most prior studies have focused on *direct* informal social control, which reflects the likelihood of residents directly intervening and mutually resolving conflicts among themselves when they observe inappropriate behaviors in their neighborhood (e.g., Elliott et al., 1996; Morenoff et al., 2001; Sampson et al., 1997; Silver & Miller, 2004; Warner, 2003).¹⁸ Overall, these studies have found that social context (e.g., poverty, ethnic diversity, residential mobility) is significantly related to a level of direct informal social control

¹⁸ The term *informal social control* is widely used in social science literature, albeit in various ways. In the current study, the term is used specifically to represent actions taken by members of social groups (e.g., family, neighborhood, peers) to encourage and enforce informal but commonly accepted moral, ethical, and other behavioral norms. This is in contrast to formal social control, which is the written, authoritative, and often legal control implemented and enforced by governmental and other official organizations such as the police, courts, and correctional agencies (Grasmick et al., 1993; Kubrin & Weitzer, 2003; Rosenbaum, 1998).

Notably, only limited attention has been paid to *indirect* informal social control (Warner, 2007). This oversight is significant because indirect informal social control, defined as reliance on others who have the formal authority to intervene, is qualitatively different from direct informal social control (Warner, 2007; Warner et al., 2010). Unlike direct informal social control, indirect informal social control reflects the likelihood of residents intervening indirectly when they observe deviant behavior, rather than directly, by bringing it to the attention of formal authorities, such as the police or social services. Thus, direct informal social control requires one to intervene directly with wrongdoers and may not result in formal consequences, while indirect informal social control does not require one to intervene directly and may result in formal consequences (e.g., arrest of offenders). In particular, it is important to examine the effect of social context on indirect informal social control for at least two reasons. First, social context influences a variety of social control outcomes, such as sentencing severity (e.g., Feldmeyer & Ulmer, 2011; Wang & Mears, 2010a, 2010b) and imprisonment rates (e.g., Delone, 1992), and, by extension, it may affect indirect informal social control. In fact, prior research suggests an association between social context and informal social control, whether direct or indirect (Bursik & Grasmick, 1993). Second, social context influences whether a crime victim reports an incident to the police (e.g., Baumer, 2002; Baumer & Lauritsen, 2010; Goudriaan et al., 2006), and, by extension, it may also affect whether a resident in general will report incidents to the police.

Against this backdrop, the current study contributes to social context and social control research by examining how ethnic context influences individual willingness to call the police. Calling the police to report a crime or suspicious activity is the most common form of indirect informal social control (Warner, 2007), as it represents “the community . . . regulat[ing] itself and the behavior of residents and visitors” (Bursik & Grasmick, 1993, p. 15). This action, when taken by residents, helps to maintain a secure community by linking formal and informal mechanisms of social control. Further, using *willingness* to call the police as a proxy for calling the police is warranted because behavioral willingness reflects a cognitive antecedent of certain behaviors—in this case, of calling the police (Todd et al., 2016). In addition, it is important to study the effect of ethnic context on informal indirect social control for at least two reasons. First, a demographic transformation has been taking place in the United States, with Hispanics becoming the nation's largest ethnic minority. In 2019, the US Hispanic population reached approximately 60.6 million (United States Census Bureau, 2020), comprising 18% of the US population (Krogstad, 2020). Second, recent discriminatory policing practices and police violence targeting Hispanics may be affecting the relationship between Hispanic communities and the police (see Alang, 2018; Lopez et al., 2010; Martínez, 2007).

Drawing upon two theoretical perspectives—the minority threat perspective and social disorganization theory—this study investigates whether Hispanic population size will increase or decrease resident willingness to call the police and what factors will be

associated with this relationship. To this end, I use Arizona Crime Victimization Survey (AZCVS) data combined with American Community Survey (ACS) 5-Year estimates from the US Census Bureau. Below I briefly describe the minority threat perspective and social disorganization theory and discuss prior research that has tested each theoretical perspective in its application to informal social control. Next, I present a series of hypotheses that are derived from the minority threat perspective and social disorganization theory along with prior research. Then I describe the data and methods, present the findings, and conclude by discussing the implications for theory and future research.

Background

Minority Threat Perspective

The minority threat perspective is frequently used to understand how and why contextual characteristics influence social control. Blalock (1967) argues that the majority group perceives minority groups as a threat to their economic resources and political power. Specifically, with respect to *economic threat*, Blalock maintains that members of the majority group—in this case, Whites—perceive increases in the relative size of a minority population as a threat to job availability and stability, wages, and other economic resources. In terms of *power threat*, Blalock contends that as the relative size of the minority population increases, Whites may increasingly perceive minorities as a threat to their political hegemony. As such, a growing minority population is

hypothesized to pose a threat to the majority, who then may demand intensified social control to maintain their dominance and privileges.

Importantly, the theoretical literature on the minority threat perspective has emphasized economic and political threat as the main mediating mechanisms that might explain the effects of minority population size on social control efforts. Another intervening process, such as *perceived risk of victimization*, is also conceivable. Specifically, drawing from the work of Blalock (1967), researchers have argued that levels of social control may vary with an area's racial composition because the presence of Blacks may lead to a fear of crime victimization that results in a higher level of crime control efforts (Bontrager et al., 2005; Chiricos et al., 1997; Chiricos et al., 2001; Quillian & Pager, 2001; Stolzenberg et al., 2004; Taylor, 1998; Ulmer & Johnson, 2004). Several studies suggest that White fear of crime victimization is elevated in communities with a larger proportion of Black and other non-White residents who may be perceived as deviant, dangerous, or dysfunctional (e.g., Liska et al., 1982; Thompson et al., 1992; Taylor & Covington, 1993; Covington & Taylor, 1991). In addition to the perceived higher risk of victimization associated with Blacks, scholars have also found a perceived higher risk of victimization associated with Hispanics (Chiricos et al., 2001; Cooper, 2000; Eitle & Taylor, 2008; Lane & Meeker, 2000, 2003).

Notably, little attention has been paid to actual victimization experience, which may also mediate the effect of racial/ethnic composition on level of informal social control. This is a significant oversight at least for two reasons. First, prior research

suggests that minority population size may be associated with violent victimization (Corzine et al., 1983; Peterson & Krivo, 1999; Schumann et al., 2013). Second, individuals who have prior crime victimization experience and contact with the police may obtain their knowledge about crime-related procedures and consequences from a previous victimization experience, which then may cause them to be more likely to call the police to report subsequent crimes (Berk et al., 1984; Conaway & Lohr, 1994; Xie et al., 2006). Overall, actual victimization experience may function as a mediating mechanism that explains the relationship between minority population size and social control. This possibility has not been tested, however.

The minority threat perspective has been applied to explain the relationship between racial context and, to a lesser extent, ethnic context and a number of social control outcomes, such as police size and expenditure (e.g., Chamlin, 1989; Kent & Jacobs, 2005), arrest rates (e.g., Chamlin & Liska, 1992; Mosher, 2001), incarceration rates (e.g., Jacobs & Carmichael, 2001), court decisions (e.g., Lowery et al., 2018; Wang & Mears, 2010a, 2010b), and punitive attitudes (e.g., King & Wheelock, 2007; Stupi et al., 2016). In addition, Warner (1992) applied the minority threat perspective to examine the contextual effects of neighborhood racial characteristics on crime victims' decisions to report a crime to the police. The author found that percentage of non-White population was positively associated with reporting among victims of burglary and with reporting among White victims of assault. Although these findings were insightful, Warner (1992) did not directly investigate the mediating mechanism implied in the minority threat

perspective, thus it is unknown if the observed effect of minority population size is due to perceived risk of victimization or actual victimization. In addition, Warner (1992) only examined the effect of non-White population size and did not examine the effect of Hispanic context. Thus, it remains unknown if the minority threat perspective can be applied to explain the relationship between ethnic context and an informal social control outcome, particularly, individual willingness to call the police.

Social Disorganization Theory

Developed through the early work of Shaw and McKay (1942), social disorganization theory has been an important theoretical framework for explaining the effect of community characteristics on informal social control. The main argument of this theory is that adverse neighborhood conditions such as economic deprivation, racial/ethnic heterogeneity, and residential mobility, may decrease residents' ability to enact social controls (Bursik & Grasmick, 1993). In other words, disadvantageous neighborhood conditions may weaken a complex system of social ties, such as local friendship networks and social activities among neighbors, which may, in turn, decrease residents' capacity to engage in social control of crime and other problem behaviors (Bursik, 1988; Bursik & Grasmick, 1993). Specifically, residents with a lack of social ties may not share a common norm with respect to reducing crime, which may deprive them of any effective way to punish deviance (see Bursik, 1999; Sullivan, 1989; Valentine, 1978). Some scholars have questioned the social tie mechanism, however, arguing that dense social ties may not always lead to collective actions to fight crime (Patillo, 1998,

1999; Wilson, 1987, 1996). For example, Patillo (1998, 1999) found a strong, organized tie existing among gang residents in a Black middle-class neighborhood in Chicago; since most of those growing up in the neighborhood were family members of a gang member or drug dealer, however, residents unwilling to see their cousins and nephews in jail were less likely to engage in informal social control. Thus, strong social ties may not always lead to increased engagement in informal social control (Patillo, 1998, 1999).

Responding to the critique regarding the effect of social ties, Sampson and colleagues (1997) proposed another neighborhood social mechanism—that is, collective efficacy, which is social cohesion among community residents combined with shared expectations for social control-related action. According to the authors, collective efficacy in a neighborhood is defined as mutual trust and the willingness of residents to intervene for the common good, such as to reduce crimes or eliminate disorder. Collective efficacy emphasizes a shared belief in neighbors' conjoint capability to undertake actions to achieve an intended effect without requiring strong social ties among community residents (see also Morenoff et al., 2001; Sampson et al., 1997). Further, Sampson (2006) demonstrates that a measure of collective efficacy includes “expectations for social actions . . . ranging from informal intervention to the mobilization of formal controls” (p. 154).

Scholars have asserted that one of the keys to building collective efficacy is to establish institutions that are viewed as legitimate (Kubrin & Weitzer, 2003; LaFree, 1998; Sampson, 2002). For example, Sampson (2002, p. 222) stated that when “the police

are mistrusted, particularly in the predominantly minority communities that bear the brunt of violent crime, cooperative efforts will fail even though all residents share a desire for lower crime rates.” Similarly, Kubrin and Weitzer (2003, p. 383) argued, “Residents who view the police as unresponsive or ineffective may feel vulnerable when considering whether to try to stop street deviance.” Studies have found that neighborhoods with higher levels of concentrated disadvantage are significantly associated with residents having negative perceptions of the police (Reisig & Park, 2000; Sampson & Jeglum-Bartusch, 1998; Velez, 2001; Wu et al., 2009), and that individuals who view the police as trustworthy and legitimate agents of social control are more willing to cooperate with the police and more willing to call the police to report criminal activity (see Bolger & Walters, 2019). However, research is rare that examines the role of resident perceptions of police legitimacy in the relationship between social context and willingness to cooperate with the police.

As an exception, Warner (2007) examined neighborhood-level characteristics in relation to willingness to call authorities (e.g., a landlord or police officer) for neighborhood disputes. Using survey data collected from 66 neighborhoods in the two largest cities of a southern state, Warner (2007) found that neighborhood-level concentrated disadvantage has a positive nonlinear relationship with willingness to call authorities, indicating that residents are more willing to call authorities as neighborhood disadvantage increases from low to average levels, but residents are less willing to call the authorities as neighborhood disadvantage increases from average to high levels. In

addition, Warner (2007) found that trust in the police does not significantly mediate the relationship between neighborhood context and willingness to call authorities. More recently, using survey data from residents of 71 residential crime hot spots (i.e., high crime neighborhoods) in St. Louis County, Missouri, Kochel (2018) found that residents were more likely to have positive perceptions of police legitimacy when they lived in a neighborhood with a high proportion of Black residents. This finding, contrary to what is suggested by social disorganization theory, might be explained by the study sample. Since the data were collected from crime hot spots, residents from these disadvantaged neighborhoods may have viewed themselves as more reliant on police for their safety and thus may have been inclined to perceive the police as more legitimate. In addition, the author found that positive perceptions of police legitimacy marginally increased willingness to cooperate with the police. Overall, although both Warner (2007) and Kochel (2018) have significantly advanced scholarship, they did not specifically examine ethnic context; therefore, it remains unknown if there is a relationship between ethnic context and willingness to call the police, and whether this relationship is partially explained by perceptions of police legitimacy.

Proposed Study

As noted above, prior studies examining the relationship between social context and informal social control have drawn from one of two relevant theoretical arguments—the minority threat perspective and social disorganization theory. Although both theories emphasize the importance of structural characteristics (e.g., minority population size)

when assessing individual willingness to engage in informal social control, they predict opposite outcomes through different social processes. Specifically, according to the minority threat perspective, a larger minority population in a given area is associated with a higher level of minority threat among dominant group members (e.g., Whites), and this may translate into increased social control (Blalock, 1967; Jackson & Carroll, 1981; Liska, 1992). That is, White residents in a neighborhood with more minority residents may be more willing to call the police than those in neighborhoods with fewer minority residents because they perceive a greater risk of victimization. According to social disorganization theory, however, structural disadvantages such as economic deprivation, racial heterogeneity, and residential instability may decrease levels of social control (Bursik & Grasmick, 1993, 1995; Sampson et al., 1997). This is because structural disadvantage often constrains an individual's ability to develop positive perceptions of the police and police legitimacy; therefore, residents of a neighborhood with structural disadvantages may be less willing to call the police.

Notably, prior studies have used either the minority threat perspective (e.g., Warner, 1992) or social disorganization theory (e.g., Warner, 2007) to study informal social control. However, researchers have not yet integrated these two theoretical perspectives within a single study when examining informal social control. This is problematic because when neglecting either one of the competing theoretical models, researchers may overlook important theoretical variables that may explain variation in individual willingness to call the police, thereby producing biased findings. Given this

background, the goal of this paper is to contribute to an emerging literature on the relationship between social context and indirect informal social control by applying both the minority threat perspective and social disorganization theory to the examination of the relationship between social context and willingness to call the police. Specifically, this paper investigates the effect of Hispanic population size on individual willingness to call the police. In so doing, it examines mediating mechanisms implied in both theoretical perspectives and assesses the integrated approach of using them together. Building on the minority threat perspective and social disorganization theory, the current study develops five hypotheses about the effect of Hispanic population size on resident willingness to call the police. Specifically, hypotheses 1 and 2 are derived from the minority threat perspective, and hypotheses 3 and 4 are derived from social disorganization theory. Last, derived from the minority threat perspective and social disorganization theory, hypothesis 5 tests mediating mechanisms of the relationship between Hispanic population size and willingness to call the police (see Figure 4.1).

Hypothesis 1: Hispanic population size will be positively related to perceived risk of victimization and actual victimization.

Hypothesis 2: Perceived risk of victimization and actual victimization will be positively related to individual willingness to call the police.

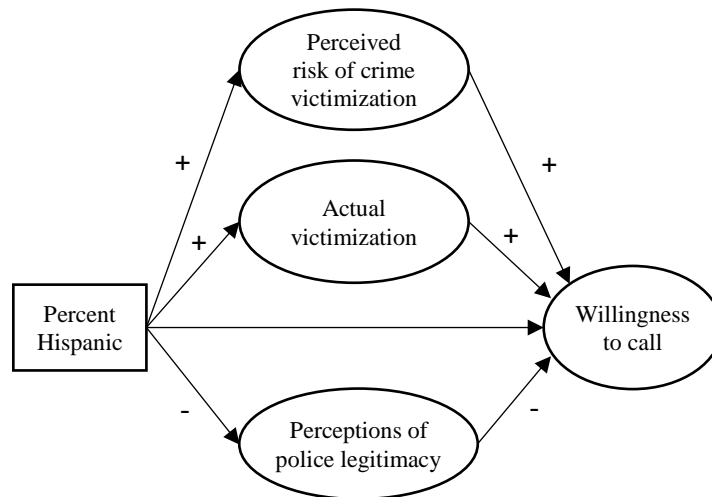
Hypothesis 3: Hispanic population size will be negatively related to individual perceptions of police legitimacy.

Hypothesis 4: Perceptions of police legitimacy will be positively related to individual willingness to call the police.

Hypothesis 5: The relationship between Hispanic population size and willingness to call the police will be partially mediated by perceived risk of victimization, actual victimization, and perceptions of police legitimacy.

Figure 4.1

Hypothesized Pathways that Draw from the Minority Threat Perspective and Social Disorganization Theory to Test the Mediating Relationship between Hispanic Population Size and Willingness to Call the Police to Report a Crime



Data and Method

Data

To assess the proposed research hypotheses, the current study combines two separate data sources to examine individual and contextual correlates of willingness to

call the police. The individual-level data are from the Arizona Crime Victimization Survey (AZCVS), funded by the US Department of Justice, Office of Justice Programs, Bureau of Justice Statistics (2010-BJ-CX-K021) and administered by the Arizona Criminal Justice Commission in February and March 2013. The AZCVS was modeled after the National Crime Victimization Survey (NCVS), modified for brief telephone interviewing. The survey employed random digit dialing (RDD), a computer-assisted telephone interviewing (CATI) system, and mutually exclusive samples of landline and cell phone numbers. Incorporating cell phone numbers into the sampling frame allows researchers to eliminate potential bias in estimates of individuals by type of telephone service (see Brick et al., 2006; Link et al., 2007; Tucker et al., 2007).

In addition to individual-level survey data, contextual-level data were extracted from the 2013 American Community Survey (ACS) 5-Year estimates, available from the US Census Bureau. The contextual-level data consist of zip code-level characteristics (e.g., zip code-level percentage of residents self-identifying as Hispanic). After excluding survey respondents who did not provide zip code information, a total of 1,665 individuals remained in the final sample.¹⁹ These individuals were nested within 229 zip codes in

¹⁹ Initially, a total of 23,925 telephone numbers were called seeking participation in the AZCVS. Of those, 7,962 were non-responsive (i.e., disconnected/nonworking) and 8,702 belonged to unoccupied homes. Of potential respondents reached, 5,139 declined to participate, and 244 completed a partial interview. The final sample included 1,878 completed survey interviews with Arizona residents, for a response rate of 7.8%. The response rate was calculated using Response Rate 5 (RR5), as suggested by the American Association for Public Opinion Research (AAPOR), because the project assumed that there were no eligible cases among the cases of unknown eligibility (The American Association for Public Opinion Research, 2016). Response rates for telephone interviews in social science research have declined since 1979 (Curtin, Presser, & Singer, 2005). After decades of decline, since 2012 response rates have plateaued below 10% (Keeter et al., 2017). Despite this, several studies have consistently found little evidence for a

Arizona. Table 4.1 shows sample descriptive statistics. The sample consisted of slightly more females (54.66%) than males and more non-Hispanic Whites (65.75%) than others, with an average age of about 55 years ($SD = 18.66$, range = 18 to 97). Approximately 34% of respondents reported having a bachelor's or post-graduate degree, 32.3% reported having some undergraduate college credit, and 30.3% claimed to have, at most, completed high school. In addition, 43.86% were employed and 57.04% were married. Respondents reported having lived, on average, about 12 months at their then-current address. The sample was comprised predominantly of US citizens (93.34%), with 86.7% stating that English was the language usually spoken at home.

relationship between response rate and nonresponse bias in survey research (Curtin, Presser, & Singer, 2000; Groves & Peytcheva, 2008; Hendra & Hill, 2019; Keeter et al., 2000, 2006; Pickett et al., 2018).

Table 4.1

Descriptive Statistics (n = 1,665)

Variable Name	Definition (items) and Coding	Mean/%	SD	Range	α
<u>Dependent variable</u>					
Willingness to call the police ^a	Call1: How likely it is that you would call the police to report a minor (misdemeanor) crime?*	3.39	0.79	1-4	0.81
	Call2: How likely it is that you would call the police to report a serious (felony) crime?*	3.81	0.47	1-4	
	Call3: How likely it is that you would call the police to report a theft/burglary where you were the victim?*	3.80	0.49	1-4	
	Call4: How likely it is that you would call the police to report a violent crime where you were the victim?*	3.84	0.45	1-4	
<u>Ethnic context</u>					
Percent Hispanic	Hispanic population size in 2013 (%)	33.46	23.08	0-99.56	
<u>Mediating variables</u>					
Perceived risk of victimization					
<i>Perceived risk of violent crime victimization</i>	Fear1: How safe do you feel in your community? ^b	1.79	0.83	1-5	0.67
	Fear2: How often are you fearful of being the victim of a violent crime? ^c	1.85	0.92	1-5	
	Fear3: Are you concerned about someone will break into your home while you are not there? ^{d*}	1.95	0.75	1-3	
<i>Perceived risk of property crime victimization</i>	Fear4: Are you concerned about someone will break into your home while you at home? ^{d*}	1.75	0.78	1-3	
	Fear5: Are you concerned about having your property vandalized? ^{d*}	1.78	0.76	1-3	
Actual victimization	In the last 12 months, were you the victim of a violent crime? (1 = yes; 0 = no)	5.32%			
Perceptions of police legitimacy					
<i>Obligation to obey^e</i>	OB1: You should accept police decisions, even if you think they are wrong*	2.45	0.72	1-4	0.67
	OB2: You should do what police tell you to do even if you disagree*	2.81	0.67	1-4	
<i>Trust in police^e</i>	TP1: They can be trusted to make decisions that are right for my community*	3.16	0.61	1-4	0.85
	TP2: Most police officers in my community do their job well*	3.21	0.55	1-4	
	TP3: They generally act professionally*	3.20	0.57	1-4	

Control Variables**Community-level:**

Percent Black	Black population size in 2013 (%)	3.93	2.97	0-18.25
Percent unemployed	Civilian population, 16 years and older, that is employed in 2013 (%)	10.47	3.81	0-28.39
Social support	A rate of social service support: number of employees who were in an occupation of community and social services divided by the zip code population over the age of 16 and in the labor force in 2013.	0.02	0.01	0-0.06
Residential mobility	A rate of households who have moved in current residence in 2010 or later divided by the total households in 2013	0.23	0.06	0-0.55

Individual-level:

Female	Respondent's sex (1 = female; 0 = male)	54.66%		
Hispanic	Respondent's ethnicity (1 =Hispanic; 0 = non-Hispanic white)	34.25%		
Age	Respondent's reported age in 2013 (years)	54.54	18.66	18-97
Education	Respondent's education			
	1 = Less than 12th grade	6.38%		
	2 = Completed high school	20.40%		
	3 = Obtained GED	3.67%		
	4 = Some undergraduate college degree	32.49%		
	5 = Bachelor's degree	21.18%		
	6 = Post-graduate degree	12.45%		
Employed	Respondent's employment status (1 = employed full time or part time, or self-employed; 0 = Otherwise)	43.86%		
Married	Respondent's marital status (1 = married; 0 = Otherwise)	57.04%		
Residential stability	Respondent's reported months that they have lived at their current address	12.14	11.63	1-85
Citizen	Respondent's citizenship status (1 = citizen; 0 = non-citizen)	94.34%		
English in home	Language that respondent usually speaks at home (1 = English; 0 = other languages)	86.70%		

^a Response set ranging from 1 = very likely to 4 = very unlikely.

^b Response set ranging from 1 = always safe to 5 = never safe.

^c Response set ranging from 1 = never to 5 = always.

^d Response set ranging from 1 = very to 3 = not at all.

^e Response set ranging from 1 = strongly agree to 4 = strongly disagree.

* Reverse scored.

Measures

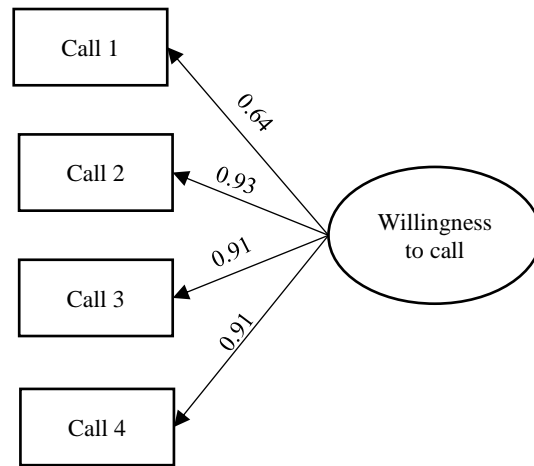
Dependent Variable

In this study, the dependent variable is *willingness to call the police*. Participants were asked four questions to assess the likelihood of their calling the police to report certain types of crimes: a minor (misdemeanor) crime, a serious (felony) crime, a theft/burglary where they were the victim, and a violent crime where they were the victim. The response options were on a Likert scale from 1 (very likely) to 4 (very unlikely). Their responses were reverse coded with higher values representing greater willingness to call the police. The Cronbach's alpha for this measure is high at .81, indicating a high level of congruence among the four items. In addition, these four items were entered into a confirmatory factor analytic model to identify the latent construct. Given that the survey items featured ordinal response sets, a robust weighted least-squares estimator was calculated using Mplus (i.e., WLSMV; Muthén & Muthén, 1998-2017). The model fit was evaluated against the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean-square error of approximation (RMSEA). Specifically, values higher than .95 for CFI and TLI indicate that the tested model provides a good fit to the data, as does the RMSEA value of less than .06 (Browne & Cudeck, 1992; Chen et al., 2008; Hooper et al., 2008; Bentler, 1990; Hu & Bentler, 1999; Marsh et al., 2004). Figure 4.2 shows sufficient standardized factor loadings ($> .64$) that significantly load onto willingness to call the police (all loadings are statistically significant at a level of $p < .001$). The model fit statistics are good (CFI = .999, TLI =

.998, RMSEA = .037), indicating that these four items in the data reliably represent willingness to call the police.

Figure 4.2

Confirmatory Factor Model of Willingness to Call the Police to Report a Crime



Note. Entries are standardized estimates. For model fit indices: comparative fit index (CFI) = .999, Tucker-Lewis Index (TLI) = .998, root mean square error of approximation (RMSEA) = .037

Independent Variable

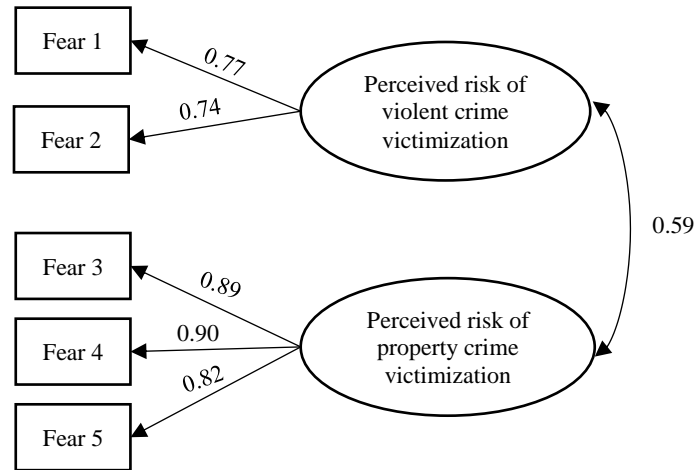
The independent variable for this study is an objective measure of ethnic context, *percent Hispanic*, which was operationalized as the zip code-level percentage of Hispanics in the population in 2013, as reported by the 5-year estimates of the ACS. On average, percent Hispanic population is 33.58 ($SD = 23.08$), ranging from 0 to 99.56%.

Mediating Variables

The minority threat perspective and social disorganization theory suggest that different mediating mechanisms are at work in the relationship between social context and informal social control. Given that, this study tests three separate mediating variables. The first mediating variable is perceived risk of victimization, measured by five items assessing respondents' fear of and concern about crime. When these five items are entered into an exploratory factor analysis, two factors emerge—that is, *perceived risk of violent crime victimization* (e.g., how often are you fearful of being the victim of a violent crime?) and *perceived risk of property crime victimization* (e.g., are you concerned about someone breaking into your home while you are not there?). The Cronbach's alpha for each factor is .67 and .84, respectively. In addition, five items are entered into a two-factor correlated confirmatory factor analytic model to verify scale structure. Figure 4.3 shows sufficient standardized factor loadings ($> .74$) that significantly load onto perceived risk of violent crime victimization and perceived risk of property crime victimization; all loadings are statistically significant at $p < .001$. The model fit statistics are good (CFI = .998, TLI = .995, RMSEA = .051), indicating that the two-factor correlated model reliably represents perceived risk of victimization in the data.

Figure 4.3

Two-factor Correlated Model of Perceived Risk of Victimization



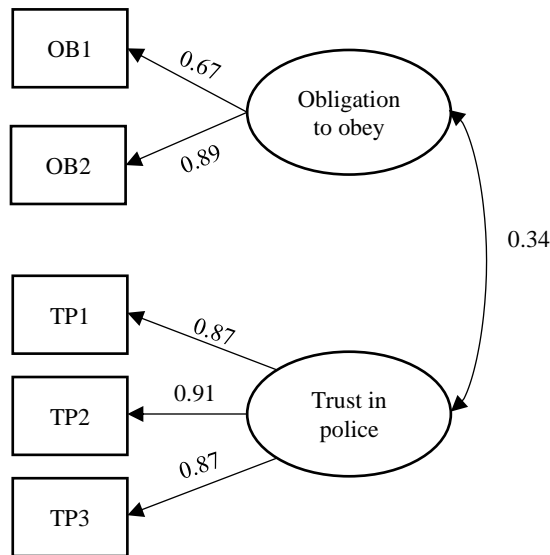
Note. Entries are standardized estimates. For model fit indices: CFI = .998, TLI = .995, RMSEA = .051

The second mediation variable is *actual victimization* experience, which is operationalized by respondents' self-reported violent victimization experiences within the past 12 months (1 = yes; 0 = no). The third mediating variable is *perceptions of police legitimacy*, which is measured using five items reflecting *obligation to obey* (e.g., one should accept police decisions, even if one thinks they are wrong) and *trust in police* (e.g., police can be trusted to make decisions that are right for my community). Responses are rated on a 4-point scale ranging from 1 (strongly agree) to 4 (strongly disagree), and reverse coded such that higher scores indicate more positive perceptions of police legitimacy. The Cronbach's alpha for obligation to obey is .67 and trust in police is

.85. Given that the perceptions of police legitimacy scale contains two distinctive subfactors, perceptions of police legitimacy is operationalized accordingly as two separate variables: obligation to obey and trust in the police. To verify the structure of the measures, those five items were entered into a two-factor correlated confirmatory factor analytic model. Figure 4.4 shows sufficient standardized factor loadings ($> .67$) that significantly load onto obligation to obey and trust in police (all loadings are statistically significant at $p < .001$). The model fit statistics are good (CFI = 1.000, TLI = .999, RMSEA = .025), indicating that the two-factor correlated model reliably represents individual perceptions of police legitimacy in the data.

Figure 4.4

Two-factor Correlated Model of Perceptions of Police Legitimacy



Note. Entries are standardized estimates. For model fit indices: CFI = 1.000, TLI = .999, RMSEA = .025

Control Variables

A number of control variables were included in the analyses to better isolate any potential associations found between Hispanic population size and willingness to call the police, and to help avoid model misspecification. At the individual level, this study includes a number of variables that may be closely related to individual willingness to call the police (see Hart & Rennison, 2003; Hickman & Sampson, 2003), including respondent's sex (1 = female, 0 = male), age (at the time of interview), ethnicity (1 = Hispanic, 0 = non-Hispanic White), educational attainment (a categorical variable ranging from 1 = less than 12th grade to 6 = post-graduate degree), employment status (1 = employed full time or part time or self-employed, 0 = otherwise), marital status (1 = married, 0 = otherwise), residential stability (number of months lived at current address at time of interview), citizenship status (1 = citizen, 0 = noncitizen), and language usually spoken at home (1 = English, 0 = other language).

The analysis also incorporates a series of relevant zip code-level controls, including Black population size (zip code-level percentage of Black population in 2013), percentage of unemployed individuals (zip code-level percentage of civilian population 16 years and older and employed in 2013), and residential mobility (zip code-level rate of households that had changed residence in 2010 or later in 2013). In addition, social service support was controlled to reflect the availability of social service assistance and support (see Xie, 2014). This variable was calculated as the number of employees who were in an occupation of community and social services (e.g., counselors, social workers,

religious workers, other community/social service specialists) divided by the zip-code population of those over age 16 and in the labor force.

Analytic Strategy

Before running the analyses, two decisions were made regarding missing data. First, missing data were assumed to result from one of two possible mechanisms producing two distinct patterns of missingness: missing at random (MAR) and missing not at random (MNAR) (Rubin, 1976). In this study, observations that had missing zip code data ($n = 58$, 3.09% of 1,878 who completed the survey) or that did not have zip codes that matched Census data ($n = 242$, 12.89% of 1,878) were treated as MNAR and dropped from the analysis. Second, all other missing data were assumed to be MAR; these observations were retained and their missing values were handled using multiple imputation with 20 imputed data sets as implemented in Mplus 8 (Asparouhov & Muthén, 2010).²⁰ In this study, the missing data for each variable ranged from 0% to 10.75%.

The analysis proceeds in two steps. First, correlation coefficients are calculated between all study variables to assess whether there are significant associations between them. Second, structural equation modeling (SEM) is conducted to assess the hypotheses when a model contains a measurement component. Specifically, to test the first set of hypotheses (hypothesis 1 and hypothesis 2), which are drawn from the minority threat

²⁰ Multiple imputation is considered one of the most preferred methods for handling missing data issues based on its ability to provide unbiased standard errors (Acock, 2005; also see Allison, 2000).

perspective, I assess whether Hispanic population size will increase perceived risk of violent crime victimization and perceived risk of property crime victimization. Then I assess whether perceived risk of violent crime victimization, perceived risk of property crime victimization, and actual victimization will increase resident willingness to call the police. To test hypothesis 3 and 4, which are drawn from social disorganization theory, I investigate whether Hispanic population size will decrease obligation to obey and trust in police, net of individual- and community-level characteristics, and then assess whether obligation to obey and trust in police will increase willingness to call the police. To test the last hypothesis, which integrates the minority threat perspective and social disorganization theory, I assess whether perceived risk of violent crime victimization, perceived risk of property crime victimization, actual victimization, obligation to obey, and trust in police will mediate the relationship between Hispanic population size and willingness to call the police. In addition, logistic regression, instead of SEM, is used when I test the effect of Hispanic population size on actual victimization, because this model does not contain a measurement component and its outcome variable is dichotomous.

It bears mentioning that each SEM includes both measurement (confirmatory factor analysis) and structural (regression) components. Since the indicators of the latent variables are ordinal, a robust mean and variance adjusted weighted least squares estimator are used, available in Mplus 8 (Muthén & Muthén, 1998-2017). In addition, AZCVS data are nested within zip code (i.e., residents in zip codes), which may result in

violations of the assumption of independent observations and can produce biased parameter estimates, deflated standard errors, and inaccurate measures of model fit (Julian, 2001). Therefore, I use a design-based approach and estimated cluster-robust standard errors using the CLUSTER command in Mplus 8 (Muthén & Muthén, 1998-2017).²¹

Results

Table 4.2 shows the results of bivariate correlations between all of the study variables. The results indicate that trust in police has the strongest positive association with individual willingness to call the police ($r = .22, p < .001$). In addition, obligation to obey ($r = .07, p < .001$) and perceived risk of property crime victimization ($r = .09, p < .001$) are positively associated with willingness to call the police. Individuals who have higher levels of trust in police, those who have higher levels of obligation to obey, and those who perceive a higher risk of property crime victimization are more willing to call the police. On the other hand, respondents who have experienced actual victimization ($r = -.07, p < .01$) are less willing to call the police. At the neighborhood level, relative Hispanic population size is negatively associated with willingness to call the police ($r = -.07, p < .01$). Perceived risk of violent crime victimization, however, is not significantly associated with individual willingness to call the police. Further, Hispanic population size is positively related to perceived risk of violent crime victimization ($r = .11, p < .001$)

and property crime victimization ($r = .17, p < .001$). On the other hand, relative Hispanic population size is negatively associated with obligation to obey ($r = -.07, p < .001$) and trust in the police ($r = -.12, p < .001$). Percent Hispanic, however, is not significantly associated with actual victimization.

Table 4.2

Inter-Correlations of All Variables (n = 1,665)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
1. Willingness to call	1																			
2. Percent Hispanic	-0.07**	1																		
3. Perceived risk of violent crime victimization	-0.02	0.11***	1																	
4. Perceived risk of property crime victimization	0.09***	0.17***	0.42***	1																
5. Actual victimization	-0.07**	0.01	0.22***	0.13***	1															
6. Obligation to obey	0.07***	-0.07***	-0.05*	0.00	-0.02	1														
7. Trust in police	0.22***	-0.12***	-0.14***	-0.01	-0.13***	0.25***	1													
8. Percent Black	-0.06*	0.32***	0.05	0.08**	0.04	-0.01	-0.08**	1												
9. Percent unemployed	-0.05	0.66***	0.13***	0.13***	0.01	-0.01	-0.14***	0.17***	1											
10. Social support	0.02	-0.13***	0.03	0.01	0.05	0.03	0.05	0.01	-0.04	1										
11. Residential instability	-0.01	0.23***	0.09***	0.05*	0.05*	-0.02	-0.05*	0.39***	0.21***	-0.08**	1									
12. Female	0.08**	0.05	0.09***	0.04	-0.09***	-0.03	0.03	-0.02	0.03	-0.02	0.04	1								
13. Hispanic	-0.11***	0.40***	0.07**	0.17***	0.06*	-0.06*	-0.09**	0.18***	0.27***	-0.02	0.08**	-0.01	1							
14. Age	0.11***	-0.18***	-0.09***	-0.09**	-0.14***	0.06*	0.13***	-0.12***	-0.07**	0.02	-0.12***	0.02	-0.26***	1						
15. Education	0.08**	-0.24***	-0.11***	-0.11***	-0.03	-0.03	0.07**	-0.07**	-0.20***	0.06**	-0.06*	-0.04	-0.26***	0.07**	1					
16. Employed	-0.01	0.02	0.02	0.03	0.06*	-0.07**	-0.01	0.05	-0.05*	0.00	0.01	-0.09***	0.06*	-0.43***	0.11***	1				
17. Married	0.10***	-0.11***	-0.02	-0.03	-0.08**	-0.03	0.07*	-0.08**	-0.13***	0.01	-0.12***	-0.11***	-0.03	0.14***	0.11***	0.04	1			
18. Residential stability	0.03	0.08**	0.02	0.05	-0.04	-0.04	-0.01	0.01	0.10***	-0.05	-0.03	0.05	0.03	0.42***	0.00	-0.19***	0.06*	1		
19. Citizen	0.03	-0.08**	-0.04	-0.06*	-0.03	0.05	0.04	-0.06**	-0.01	0.00	-0.06*	-0.01	-0.13***	0.12***	0.11***	0.04	-0.01	0.07**	1	
20. English in home	0.06*	-0.31***	-0.07**	-0.13***	0.00	0.06*	0.05	-0.12***	-0.20***	0.03	-0.07**	-0.03	-0.49***	0.15***	0.24***	0.01	0.01	-0.02	0.25***	1

* $p < .05$ ** $p < .01$ *** $p < .001$ (two-tailed).

Before running multivariate analyses, I conducted multicollinearity diagnostics to ensure there was no harmful level of multicollinearity in the models. The variance inflation factor (VIF) was within the threshold of 4 (O'Brien, 2007), and the correlations between variables were not highly correlated; thus, there was no critical issue regarding multicollinearity. Moving on to the multivariate analyses, Table 4.3 presents estimations of the effect of Hispanic population size on perceived risk of victimization and actual victimization, as well as the effects of perceived risk of victimization and actual victimization on willingness to call the police. Specifically, Models 1 through 3 focus on the direct effects of Hispanic population size on mediators (i.e., perceived risk of violent crime victimization, perceived risk of property crime victimization, and actual victimization) that test hypothesis 1—that is, Hispanic population size will be positively related to perceived risk of victimization and actual victimization. Model 4 examines the effect of these mediating variables on willingness to call the police and tests whether perceived risk of victimization and actual victimization will be positively related to individual willingness to call the police (hypothesis 2). Review of Table 4.3 shows several important findings. First, all models fit the data well. Second, Hispanic population size significantly increases perceived risk of property crime victimization ($\beta = .07$, $se = .04$, $p < .05$; see Model 1) but not perceived risk of violent crime victimization ($\beta = -.00$, $se = .04$, $p = .96$; see Model 2). In addition, Hispanic population size is not significantly associated with actual victimization ($\beta = -.00$, $se = .07$, $p = .45$; see Model 3). Thus, hypothesis 1 is partially supported. Third, perceived risk of violent crime victimization is

negatively associated with willingness to call the police ($\beta = -.12, se = .05, p < .01$), and perceived risk of property crime victimization is positively related to willingness to call the police ($\beta = .23, se = .04, p < .001$). Actual victimization, however, is not significantly related to individual willingness to call the police ($\beta = -.04, se = .03, p = .16$). Thus, hypothesis 2 is partially supported.

Table 4.3

Models for Relationship between Hispanic Population Size, Perceived Risk of Victimization, Actual Victimization, and Willingness to Call the Police to Report a Crime (n = 1,665)

Variables	Model 1			Model 2			Model 3			Model 4		
	Perceived risk of violent crime victimization			Perceived risk of property crime victimization			Actual victimization			Willingness to call the police		
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>
Independent variable												
Percent Hispanic	-0.00	0.04		0.07	0.04	*	-0.06	0.07		0.01	0.05	
Mediating variables												
Perceived risk of violent crime victimization										-0.12	0.05	**
Perceived risk of property crime victimization										0.23	0.04	***
Actual victimization										-0.04	0.03	
Observed covariates: community-level												
Percent Black	-0.02	0.04		0.03	0.03		0.00	0.05		-0.05	0.03	†
Percent unemployed	0.11	0.05	*	0.03	0.03		-0.01	0.06		-0.03	0.05	
Social support	0.07	0.03	*	0.04	0.02		0.11	0.05	*	0.03	0.04	
Residential mobility	0.08	0.04	*	0.01	0.02		0.09	0.06		0.03	0.04	
Observed covariates: Individual-level												
Female	0.12	0.03	***	0.04	0.03		-0.20	0.06	**	0.15	0.04	***
Hispanic	-0.05	0.04		0.09	0.03	**	0.09	0.06		-0.08	0.04	*
Age	-0.15	0.04	**	-0.07	0.04	†	-0.25	0.08	**	0.11	0.04	**
Education	-0.10	0.03	**	-0.06	0.03	†	-0.05	0.06		0.06	0.04	†
Employed	0.01	0.03		0.03	0.04		0.04	0.07		0.05	0.04	
Married	0.04	0.03		0.01	0.03		-0.14	0.06	*	0.10	0.04	**
Residential stability	0.07	0.04	†	0.08	0.03	*	0.07	0.07		-0.03	0.04	
Citizen	-0.02	0.03		-0.03	0.03		-0.05	0.04		-0.01	0.04	
English in home	-0.02	0.03		-0.04	0.03		0.09	0.06		0.00	0.03	
Model fit statistics												
CFI		0.999			0.997			n/a			0.962	
TLI		0.999			0.996			n/a			0.954	
RMSEA		0.004			0.019			n/a			0.033	

Note. Coefficients are all standardized, *se* = standard errors

Model fit statistics are not available for logistic regression model.

†*p* < .1 **p* < .05 ***p* < .01 ****p* < .001

Table 4.4 presents results for the effect of Hispanic population size on perceptions of police legitimacy and the effect of perceptions of police legitimacy on willingness to call the police. Model 1 and Model 2 focus on the direct effects of Hispanic population size on two mediators, obligation to obey and trust in police, thus testing hypothesis 3—that is, Hispanic population size will be negatively related to perceptions of police legitimacy. Model 3 tests the effect of obligation to obey and trust in police on willingness to call the police, thus testing hypothesis 4—that is, perceptions of police legitimacy will be positively related to willingness to call the police. Two main findings emerged. First, Hispanic population size significantly decreases obligation to obey ($\beta = -.08$, $se = .05$, $p < .10$; see Model 1), but not trust in police ($\beta = .02$, $se = .04$, $p = .66$; see Model 2). This finding partially supports hypothesis 3. Second, review of Model 3 indicates that trust in police is significantly and positively associated with willingness to call the police ($\beta = .28$, $se = .03$, $p < .001$), but obligation to obey is not significantly related to willingness to call the police ($\beta = .03$, $se = .04$, $p = .37$). Thus, hypothesis 4 is partially supported.

Table 4.4

Models for Relationship between Hispanic Population Size, Obligation to Obey, Trust in Police, and Willingness to Call the Police to Report a Crime (n = 1,665)

Variables	Model 1			Model 2			Model 3		
	Obligation to obey			Trust in police			Willingness to call the police		
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>
Independent variable									
Percent Hispanic	-0.08	0.05	†	0.02	0.04		0.02	0.05	
Mediating variables									
Obligation to obey							0.03	0.04	
Trust in police							0.28	0.03	***
Observed covariates: community-level									
Percent Black	0.03	0.03		-0.05	0.03	†	-0.05	0.03	†
Percent unemployed	0.06	0.04		-0.12	0.04	**	-0.03	0.04	
Social support	0.01	0.03	†	0.05	0.03		0.03	0.04	
Residential mobility	-0.04	0.03		0.01	0.04		0.03	0.03	
Observed covariates: Individual-level									
Female	-0.03	0.04		0.06	0.03	*	0.15	0.03	***
Hispanic	-0.01	0.05		-0.02	0.04		-0.08	0.04	*
Age	0.06	0.04		0.18	0.04	**	0.12	0.04	**
Education	-0.06	0.03	†	0.03	0.03		0.06	0.03	†
Employed	-0.06	0.04		0.06	0.04		0.05	0.04	
Married	-0.05	0.03		0.03	0.03		0.11	0.03	**
Residential stability	-0.09	0.03	*	-0.05	0.03		-0.03	0.04	
Citizen	0.05	0.04		0.01	0.03		-0.01	0.03	
English in home	0.06	0.04		-0.03	0.03		-0.00	0.03	
Model fit statistics									
CFI		0.991			1.000			0.982	
TLI		0.979			1.000			0.978	
RMSEA		0.020			0.003			0.025	

Note. Coefficients are all standardized, *se* = standard errors

† $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Table 4.5 presents the direct and indirect effects of Hispanic population size on individual willingness to call the police through perceived risk of victimization, actual victimization, and perceptions of police legitimacy, thus testing hypothesis 5—that is, the relationship between Hispanic population size and willingness to call the police will be partially mediated by perceived risk of victimization, actual victimization, and perceptions of police legitimacy. Based on the results shown in Table 4.5, Figure 4.5 depicts direct and indirect pathways for the relationship between Hispanic population size and willingness to call the police. Review of Table 4.5 and Figure 4.5 suggests that the model fits the data well (CFI = .964, TLI = .946, RMSEA = .042) and that Hispanic population size significantly increases perceived risk of property crime victimization ($\beta = .07, se = .04, p < .05$) and significantly decreases obligation to obey ($\beta = -.07, se = .04, p < .10$). However, Hispanic population size is not significantly related to perceived risk of violent victimization, actual victimization, and trust in police. In addition, perceived risk of property crime victimization ($\beta = .25, se = .05, p < .001$), obligation to obey ($\beta = .12, se = .04, p < .01$), and trust in police ($\beta = .33, se = .03, p < .001$) significantly increase willingness to call the police, whereas perceived risk of violent crime victimization significantly decreases willingness to call the police ($\beta = -.15, se = .05, p < .01$). Actual victimization, however, is not significantly associated with willingness to call the police.

Table 4.5

Direct Effects of Hispanic Population Size on Perceived Risk of Victimization, Actual Victimization, Perceptions of Police Legitimacy, and Willingness to Call the Police to Report a Crime (n = 1,665)

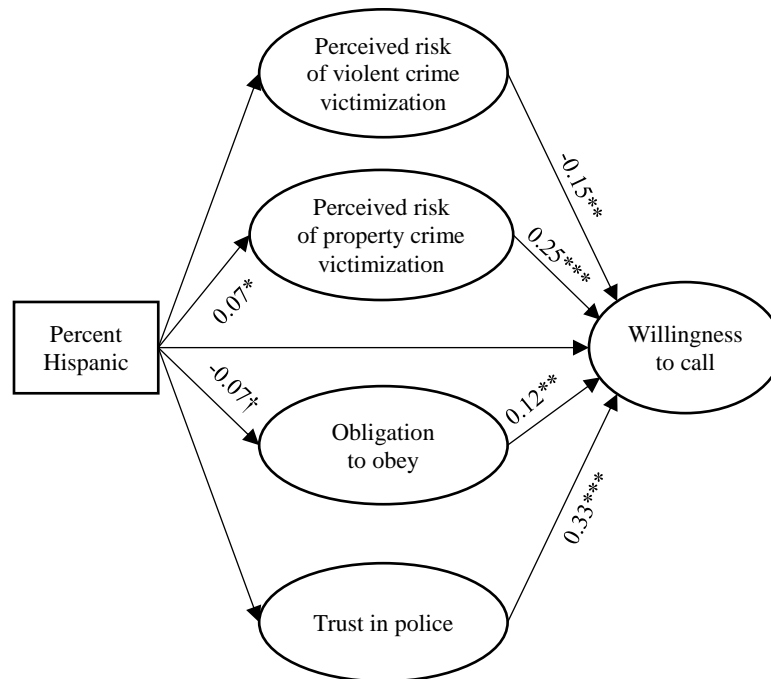
Variables	Perceived risk of violent crime victimization			Perceived risk of property crime victimization			Actual victimization			Obligation to obey			Trust in police			Willingness to call the police			
	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	β	<i>se</i>	<i>p</i>	
Independent variable																			
Percent Hispanic	-0.01	0.04		0.07	0.04	*	-0.05	0.08		-0.07	0.04	†	0.02	0.04		-0.01	0.05		
Mediating variables																			
Perceived risk of violent crime victimization																-0.15	0.05	**	
Perceived risk of property crime victimization																0.25	0.05	***	
Actual victimization																-0.08	0.06		
Obligation to obey																0.12	0.04	**	
Trust in police																0.33	0.03	***	
Observed covariates: community-level																			
Percent Black	-0.02	0.03		0.03	0.03		0.01	0.08		0.03	0.03		-0.05	0.03	†	-0.05	0.03	†	
Percent unemployed	0.11	0.04	*	0.03	0.03		-0.00	0.06		0.05	0.03		-0.12	0.04	**	0.02	0.04		
Social support	0.07	0.03	*	0.04	0.02		0.11	0.05	*	0.01	0.03		0.05	0.03		0.03	0.03		
Residential mobility	0.08	0.04	*	0.01	0.02		0.09	0.07		-0.03	0.03		0.01	0.04		0.05	0.04		
Observed covariates: Individual-level																			
Female	0.12	0.03	***	0.04	0.03		-0.18	0.06	**	-0.04	0.03		0.06	0.03	*	0.13	0.04	***	
Hispanic	-0.05	0.04		0.09	0.03	**	0.09	0.06		-0.01	0.04		-0.02	0.04		-0.10	0.04	**	
Age	-0.14	0.04	**	-0.07	0.04	†	-0.22	0.07	**	0.04	0.04		0.18	0.04	***	0.03	0.04		
Education	-0.10	0.03	**	-0.06	0.03	†	-0.04	0.06		-0.05	0.03	†	0.03	0.03		0.05	0.04		
Employed	0.01	0.03		0.03	0.04		0.04	0.06		-0.06	0.03	†	0.06	0.04		0.04	0.04		
Married	0.04	0.03		0.01	0.03		-0.13	0.05	*	-0.04	0.03		0.03	0.03		0.10	0.04	**	
Residential stability	0.07	0.04	†	0.08	0.03	*	0.06	0.07		-0.07	0.03	*	-0.05	0.03		-0.01	0.04		
Citizen	-0.02	0.03		-0.03	0.03		-0.05	0.05		0.04	0.03		0.01	0.03		-0.02	0.04		
English in home	-0.02	0.03		-0.04	0.03		0.08	0.06		0.06	0.03	†	-0.03	0.03		0.01	0.03		
Model fit statistics																			
CFI																			0.964
TLI																			0.946
RMSEA																			0.042

Note. Coefficients are all standardized, *se* = standard errors

†*p* < .1 **p* < .05 ***p* < .01 ****p* < .001

Figure 4.5

SEM Model of Direct and Indirect Effects of Percent Hispanic on Willingness to Call the Police to Report a Crime



Note. Entries are standardized estimates, and only statistically significant results are presented.

For model fit indices: CFI = .964, TLI = .946, RMSEA = .042; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

In addition, Table 4.6 indicates total, direct, and indirect effects of ethnic context on willingness to call the police through perceived risk of victimization, actual victimization, and perceptions of police legitimacy. Inspection of this table reveals two findings. First, the indirect effect of Hispanic population size through perceived risk of property crime victimization is statistically significant ($\beta = .02$, $se = .01$, $p < .10$). In other

words, larger Hispanic population size in a neighborhood increases perceived risk of property crime victimization ($\beta = .07$, $se = .04$, $p < .05$), which increases resident willingness to call the police ($\beta = .25$, $se = .05$, $p < .001$). Second, indirect effects through perceived risk of violent crime victimization, actual victimization, obligation to obey, and trust in police are not statistically significant. Overall, hypothesis 5 is partially supported.

Table 4.6

Total, Direct, and Indirect Effects of Ethnic Context on Willingness to Call the Police to Report a Crime (n = 1,665)

Specific effects	β	se	p
Total effect	0.02	0.05	
Direct effect	-0.01	0.05	
Total indirect effect	0.02	0.02	
Specific indirect effect			
Indirect via perceived risk of violent crime victimization	0.00	0.01	
Indirect via perceived risk of property crime victimization	0.02	0.01	†
Indirect via actual victimization	0.00	0.01	
Indirect via obligation to obey	-0.01	0.01	
Indirect via trust in police	0.01	0.01	

Note. Coefficients are all standardized, se = standard errors

† $p < .1$ * $p < .05$ ** $p < .01$ *** $p < .001$

Discussion and Conclusion

Prior studies have made important advancements by incorporating social context into the investigation of various individual-level informal social controls; however, these studies have focused largely on formal social control outcomes (e.g., Kane et al., 2013; Wang & Mears, 2010a, 2010b) and attitudes toward criminal control policies (e.g., Welch

et al., 2011). Thus, it remains unknown as to how and to what extent neighborhood-level ethnic context may affect informal social control. Further, two prominent theoretical perspectives that can explain the relationship between social context and social control—the minority threat perspective (Blalock, 1967) and social disorganization theory (Bursik & Grasmick, 1993)—suggest competing arguments regarding the effect of Hispanic population size on informal social control. Specifically, according to the minority threat perspective, Hispanic population size may be positively associated with perceived risk of victimization and actual victimization, which in turn may increase individual willingness to call the police. Alternatively, social disorganization theory suggests that Hispanic population size may be related to negative perceptions of police legitimacy, which in turn may decrease individual willingness to call the police. Drawing from both theories, the current study contributes to the emerging literature on social context and informal social control research by examining the relationship between zip code-level Hispanic population size and individual willingness to call the police.

Specifically, I have developed five hypotheses with respect to the direct and indirect effects of Hispanic population size on individual willingness to call the police. The first two hypotheses are derived from the minority threat perspective, and they anticipate that Hispanic population size will be positively related to perceived risk of victimization and actual victimization (hypothesis 1) and that perceived risk of victimization and actual victimization will be positively related to willingness to call the police (hypothesis 2). The next two hypotheses are derived from social disorganization theory and expect that Hispanic population size will be negatively related to perceptions

of police legitimacy (hypothesis 3) and that perceptions of police legitimacy will be positively related to willingness to call the police (hypothesis 4). The last hypothesis integrates the minority threat perspective and social disorganization theory and predicts that the relationship between Hispanic population size and willingness to call the police will be partially explained by perceived risk of victimization, actual victimization, and perceptions of police legitimacy (hypothesis 5). I tested these hypotheses by analyzing the AZCVS data in combination with zip code-level data from the US Census.

The main findings of this study can be summarized as follows. With respect to the first two hypotheses (hypotheses 1 and 2), I find that zip code-level Hispanic population size is positively associated with perceived risk of property crime victimization, which in turn increases individual willingness to call the police. I also find that Hispanic population size is not significantly related to perceived risk of violent crime victimization which significantly decreases individual willingness to call the police. This unexpected finding suggests that residents in Arizona do not perceive Hispanic population as a threat of violent crime; however, those residents who do perceive a higher risk of violent crime victimization tend to be less willing to call the police. One possible explanation is that people who perceive a higher risk of violent crime victimization may fear reprisal or may want to avoid contact with offenders, and this may contribute to their unwillingness to call the police (see Singer, 1988; Felson et al., 2002). Actual victimization, however, is not significantly associated with Hispanic population size or individual willingness to call the police. Thus, the first set of hypotheses is partially supported. With respect to the next set of hypotheses (hypotheses 3 and 4), I find that Hispanic population size significantly

decreases obligation to obey but does not have an impact on trust in police. In addition, I find that trust in police significantly increases individual willingness to call the police, but obligation to obey is not significantly associated with willingness to call the police. Therefore, the second set of hypotheses is partially supported. Last, I find that the indirect effect of Hispanic population size on individual willingness to call the police is only significant through perceived risk of property crime victimization. The indirect effects of Hispanic population size on individual willingness to call the police via perceived risk of violent victimization, actual victimization, obligation to obey, and trust in police are not statistically significant. Therefore, hypothesis 5 is partially supported.

These findings have implications for the minority threat perspective and social disorganization theory. First, both the minority threat perspective and social disorganization theory offer unique social processes to explain the relationship between social context and social control. Specifically, the minority threat perspective suggests that the relationship between racial/ethnic context and social control may be explained by perceived risk of victimization, while social disorganization theory argues that the relationship between adverse neighborhood characteristics (e.g., economic deprivation, racial/ethnic heterogeneity, residential instability) and informal social control may be explained by perceptions of police legitimacy. Given this theoretical background, findings from this study imply that the unique social processes drawn from each theoretical perspective may respectively contribute to our understanding of the relationship between ethnic context and indirect informal social control, specifically, individual willingness to call the police. The findings of this study suggest that the

minority threat perspective may provide a more valid explanation of the relationship between Hispanic population size and willingness to call the police. Second, the minority threat perspective argues that perceived risk of victimization may explain the effect of racial/ethnic context on social control outcomes (Chamlin, 1989; Jackson, 1989; Jackson & Carroll, 1981; Liska & Chamlin, 1984). This study suggests that perceived risk of property crime victimization may be a significant factor in explaining the relationship between Hispanic context and individual willingness to call the police. This finding not only provides support for the argument that minority context matters for perceived risk of victimization (Eitle & Taylor, 2008; Liska et al., 1982; Covington & Taylor, 1991; Taylor & Covington, 1993; Thompson et al, 1992), but also presents new evidence supporting the importance of perceived risk of property crime victimization for understanding the relationship between ethnic context and individual willingness to call the police. Third, social disorganization theory suggests that perceptions of police legitimacy is an important factor affecting the relationship between neighborhood context and informal social control (Kubrin & Weitzer, 2003; LaFree, 1998; Sampson, 2002). Similar to Warner (2007), this study finds that Hispanic population size is not associated with trust in police. This study also finds that Hispanic population size significantly reduces obligation to obey, but obligation to obey is not significantly associated with willingness to call the police. Thus, it is not clear whether social disorganization theory can explain the relationship between Hispanic context and individual willingness to call the police.

The findings from this study have implications for future research. First, the AZCVS data were not collected for the specific purpose of this study, thus some important theoretical variables were not available for fully testing the minority threat perspective and social disorganization theory. In particular, Blalock's (1967) minority threat hypothesis suggests that perceived minority threat is a process variable for the relationship between minority context and social control. Further, a recent study conducted by Infante et al. (2019) found that the growing Hispanic population in the US has posed perceived threats to the dominant group, primarily Whites, and these include economic threat (e.g., Hispanics taking economic resources that should go to others), political threat (e.g., Hispanics running for too many elective public offices), criminal threat (e.g., Hispanic crime rates being a serious problem), and opportunity threat (e.g., Hispanics being given preferential access to higher education based on ethnicity). Including these specific dimensions of perceived threats posed by Hispanics may provide a more complete explanation for the relationship between ethnic context and individual willingness to call the police. Within the framework of social disorganization theory, in addition to perceptions of police, social ties (Bellair, 1997, Bursik & Grasmick, 1993, 1995; Sampson & Groves, 1989; Warner & Rountree, 1997) and social cohesion (Sampson et al., 1997) are also important process variables in explaining the relationship between social context and informal social control. Thus, future research may consider using all of these variables (i.e., perceived threats posed by Hispanics, social ties, and social cohesion) to examine the relationship between ethnic context and individual

willingness to call the police, thereby fully assessing the mediating mechanisms intimated by the minority threat perspective and social disorganization theory.

Second, this study highlights the importance of testing the mediating mechanism of the relationship between Hispanic context and willingness to call the police. For example, although the direct effect of Hispanic population size on individual willingness to call the police is not statistically significant, the indirect effect of Hispanic population size is statistically significant through perceived risk of property crime victimization. Thus, future research may want to continue to examine the indirect effect of ethnic context on individual willingness to call the police.

Third, this study focuses on one geographic location—that is, the State of Arizona. It is unknown whether research in other regions would produce the same findings with respect to the impact of ethnic context on individual willingness to call the police. Therefore, future research may want to examine the relationship between ethnic context and individual willingness to call the police in other regions of interest or with a nationally representative population sample.

In conclusion, this study contributes to the social context and social control research by assessing two competing theoretical perspectives to explain the effect of ethnic context on individual willingness to call the police. Drawing from the minority threat perspective and social disorganization theory, this study finds that in the State of Arizona, Hispanic population size significantly increases resident willingness to call the police because the state's residents tend to perceive higher levels of property crime victimization. It also finds that perceptions of police legitimacy is not a significant factor

for explaining the relationship between ethnic context and resident willingness to call the police. These findings suggest that the minority threat perspective may explain the relationship between ethnic context and willingness to call the police better than social disorganization theory, particularly in Arizona. That said, future research may need to continue to examine the mediating mechanisms facilitating the link between ethnic context and informal social control.

CHAPTER 5

GENERAL DISCUSSION AND CONCLUSION

The United States is becoming more racially and ethnically diverse, and this trend is projected to accelerate in the coming decades. In particular, the Hispanic population reached approximately 60.6 million in 2019, comprising about 18% of the US population (Krogstad, 2020). By 2060, the Hispanic population is projected to account for about 28% of the US population (Vespa et al., 2018). In addition to this population shift, the continuous influx of immigrants from Mexico and other Latin countries together with over-policing in Hispanic communities in this country have highlighted a clear need for studying Hispanic residents' relations with police in the United States.

Notably, prior studies have investigated the effect of ethnicity on outcomes related to the police. For instance, individual-level studies have found that Hispanics are more likely than non-Hispanic Whites to have negative perceptions of police, such as viewing police practices as racially biased and police officers as unfair and not satisfactory (see Buckler & Unnever, 2008; Garcia & Cao, 2005; Holmes, 1998; Langton & Durose, 2013; Lai & Zhao, 2010; Schuck & Rosenbaum, 2005; Webb & Marshall, 1995; Weitzer & Tuch, 2005; Wu, 2014). In addition, a few studies have investigated Hispanic willingness to call the police and have produced mixed findings (e.g., Nuño, 2018; Sunshine & Tyler, 2003; Tyler & Jackson, 2014; White et al., 2016). For example, Tyler and Jackson (2014) found that Hispanics were less willing to call the police when compared to their White counterparts, while Sunshine and Tyler (2003) found no significant differences between White and Hispanic residents in their willingness to call

the police (see also Nuño, 2018; White et al., 2016). At the contextual level, a few studies have examined the relationship between the relative Hispanic population size and police-related outcomes, such as police-caused homicides of minorities (Holmes et al., 2019), the per capita expenditures on policing and number of police officers (Holmes et al., 2008; Kent & Jacobs, 2005; Sever, 2001; Stucky, 2005). Overall, these studies found that relative Hispanic population size was significantly related to these police-related outcomes.

Although prior studies have significantly advanced scholarship, research regarding the ethnic effect on individual willingness to call the police has been limited, and important questions still remain. First, prior studies have found that Hispanics tend to have more negative perceptions of police legitimacy when compared to non-Hispanic Whites (e.g., Weizer & Tuch, 2005). Notably, these studies have been conducted with an underlying assumption that the measure being used—in this case, perceptions of police legitimacy—would function the same across ethnic groups. In other words, these studies assumed that the measurement structures of the perceptions of police legitimacy scale and survey items that make up the scale would be consistently valid across ethnic groups (i.e., measurement invariant). This assumption, however, has not been validated. This is a significant oversight because the perceptions of police legitimacy measure might not be equally valid for non-Hispanic Whites and Hispanics and the associations between the items that make up the scale may not be equivalent between the groups. If that is the case, quantitative comparison of latent factor mean scores—in this case, mean scores of the perceptions of police legitimacy scale—between non-Hispanic Whites and Hispanics

may be unwarranted because the latent construct of perceptions of police legitimacy is qualitatively different (e.g., different factor structures) between these groups. No research to date has examined whether the perceptions of police legitimacy measure is invariant across ethnic groups, thus little is known whether this measure functions the same for both non-Hispanic Whites and Hispanics.

Second, only a handful of empirical studies have examined the effect of ethnicity on individual willingness to call the police to report a crime, and those studies have produced mixed findings (e.g., Nuño, 2018; Sunshine & Tyler, 2003; Tyler & Jackson, 2014; White et al., 2016). In addition, most of these studies included ethnicity as a control variable without providing an explanation for why Hispanics are less willing to call the police than non-Hispanic Whites. Two theoretical perspectives, the group position thesis (Blumer, 1958) and Tyler's (1990) process-based model of policing, when combined may provide feasible explanations for the relationship between ethnicity and willingness to call the police. Specifically, the group position thesis (Blumer, 1958) argues that racial and ethnic minorities tend to have unfavorable attitudes toward the police because they view the police as an instrument for suppressing subordinate groups (Weitzer, 1995; Weitzer & Tuch, 2005). Such negative perceptions of the police, according to Tyler's process-based model of policing, may decrease individual willingness to call the police (Bolger & Walter, 2019). The possibility that these two perspectives can be combined to explain the relationship between individual ethnicity and willingness to call the police has not yet been fully tested, however, and little is known

about whether perceptions of police may be an important mediator that explains why Hispanics are less willing than their White counterparts to call the police.

Third, little attention has been paid to the neighborhood-level ethnic context and its effect on individual willingness to call the police to report a crime. Most of the existing research studying ethnic context focuses on formal social control such as sentencing decisions (e.g., Wang & Mears, 2010a; 2010b), police resource allocations (e.g., Holmes et al., 2008), and arrests (e.g., Kane et al., 2013). Although these outcomes have been insightful, it is also important to examine the effect of ethnic context on willingness to call the police because calling the police to report a crime, a form of informal social control, may also be associated with ethnic context. In addition, social context influences whether or not a crime victim reports an incident to the police (e.g., Baumer, 2002; Baumer & Lauritsen, 2009; Goudriaan et al., 2006), and by extension ethnic context may also affect whether residents are willing to report a crime to the police. Two prominent theoretical perspectives, the minority threat perspective and social disorganization theory, may explain the relationship between ethnic context and informal social control—in particular, individual willingness to call the police. Specifically, the minority threat perspective argues that a large minority population size may increase the threat posed by minority groups, which may lead dominant group members to intensify social controls to maintain their economic, political, and social dominance (Blalock, 1967). On the other hand, according to social disorganization theory, concentrated disadvantage in a neighborhood may be positively associated with negative perceptions of police, which may lead to lower levels of informal social control (Kubrin & Weitzer,

2003; LaFree, 1998; Sampson, 2002). Although both theoretical processes provide feasible explanations for the relationship between ethnic context and informal social control, prior research has not directly applied these perspectives, and it is unknown to what extent the minority threat perspective and social disorganization theory can explain this relationship.

Against this backdrop, the overarching goal of this dissertation is to provide an empirical assessment of individual willingness to call the police in relation to item-, individual-, and contextual-levels of ethnic effect. First, at the item level, Chapter 2 aimed to examine whether the measurement properties of perceptions of police legitimacy, a significant predictor of individual willingness to call the police, are invariant between non-Hispanic Whites and Hispanics. Second, at the individual level, Chapter 3 sought to assess the relationship between ethnicity and willingness to call the police by applying the group position thesis and Tyler's (1990) process-based model of policing. Specifically, Chapter 3 examined whether Hispanics are less willing to call the police and if perceptions of police legitimacy can at least partially explain the relationship between ethnicity and willingness to call the police. Third, at the contextual level, Chapter 4 investigated the extent to which theoretical arguments drawn from the minority threat perspective and social disorganization theory can be applied to explain the relationship between ethnic context and individual willingness to call the police. Specifically, Chapter 4 assessed whether perceived risk of victimization, actual victimization, and perceptions of police legitimacy can explain the relationship between Hispanic population size and individual willingness to call the police. To conduct these

studies, I used Arizona Crime Victimization Survey (AZCVS) data that were collected in 2013. In addition, to conduct the study discussed in Chapter 4, I merged the individual-level survey data with zip code-level data from the 2013 American Community Survey (ACS) 5-Year estimates. Below, I summarize key findings from each of these three studies and discuss the implications of these findings for theories, future criminological research, and policy.

Summary of Key Findings

Chapter 2 examined measurement invariance of the perceptions of police legitimacy scale across non-Hispanic White and Hispanic residents in Arizona. To my knowledge, no other study to date has assessed measurement invariance of the perceptions of police legitimacy scale. Consequently, little has been known about whether the two-factor model of perceptions of police legitimacy, suggested by Tyler (1990), functions in the same manner across non-Hispanic White and Hispanic groups. To address this gap, I tested measurement invariance of the hypothesized two-factor structure of perceptions of police legitimacy using a series of confirmatory factor analysis (CFA) models. The results of these CFA models suggested that the two-factor structure of perceptions of police legitimacy, consisting of two subfactors (i.e., obligation to obey and trust in police), fits the data well for both non-Hispanic White and Hispanic subsamples. In addition, the two-factor model of perceptions of police legitimacy showed equivalent estimates across two subsamples in terms of factor loadings, item intercepts, and residuals. Thus, these findings suggested that the two-factor model of perceptions of

police legitimacy is valid for both non-Hispanic Whites and Hispanics and that it functions consistently across these subsamples.

Chapter 3 focuses on the individual-level ethnic effect on individual willingness to call the police. Specifically, drawing from the group position thesis (Blumer, 1958) and Tyler's process model of policing (1990), I developed hypotheses that are relevant to the effect of ethnicity on perceptions and police legitimacy and willingness to call the police. Using a series of structure equation modeling (SEM), I found that Hispanics tended to have lower levels of trust in police when compared to non-Hispanic Whites, but I found no significant difference between non-Hispanic Whites and Hispanics in their opinions about obligation to obey the police. I also found that trust in police was positively associated with willingness to call the police, whereas obligation to obey was not. In addition, I found that trust in police partially explained the relationship between ethnicity and willingness to call the police. In other words, Hispanics tended to show a lower level of trust in police when compared to non-Hispanic Whites, which in turn resulted in their unwillingness to call the police. Overall, the findings from Chapter 3 partially support the notion that the group position thesis and Tyler's process-based model of policing can be combined to explain the relationship between ethnicity and individual willingness to call the police.

To investigate the contextual-level ethnic effect, Chapter 4 examines the relationship between the relative Hispanic population size and individual willingness to call the police. Three main findings can be summarized as follows. First, I found that a larger Hispanic population size significantly increased respondents' level of perceived

property crime victimization, which in turn increased their willingness to call the police; however, Hispanic population size was not significantly associated with perceived violent crime victimization and actual victimization. Second, I found that a larger Hispanic population size significantly decreased respondents' obligation to obey, but it was not significantly associated with trust in police. In addition, I found that a higher level of trust in police significantly increased individual willingness to call the police, but obligation to obey did not. Third, I found that the indirect effect of Hispanic population size on individual willingness to call the police was statistically significant, but only through perceived risk of property crime victimization. Perceived risk of violent victimization, actual victimization, obligation to obey, and trust in police did not explain the relationship between ethnic context and individual willingness to call the police. Therefore, these findings suggest that the minority threat perspective may explain the relationship between ethnic context and willingness to call the police better than social disorganization theory.

Implications for Theory

This dissertation has drawn from several theoretical perspectives to explain the ethnic effect on willingness to call the police at item, individual, and contextual levels. Specifically, Chapter 2 assessed measurement invariance of the perceptions of police legitimacy scale, as discussed in Tyler's process-based model of policing. Applying the group position thesis and Tyler's process-based model of policing, Chapter 3 examined the effect of individual ethnicity on willingness to call the police. Chapter 4 drew from the minority threat perspective and social disorganization theory and investigated the

effect of ethnic context on individual willingness to call the police. Findings obtained from these three separate studies have implications for Tyler's process-based model of policing, the group position thesis, minority threat perspective, and social disorganization theory, respectively.

First, findings from this dissertation have an implication for Tyler's process-based model of policing. Specifically, Chapter 2 confirmed the results of prior studies (Gau, 2011, 2014; Reisig et al., 2007) that perceptions of police legitimacy, as described in Tyler's process-based model of policing, consists of two distinct factors—obligation to obey and trust in police. In addition, Chapter 3 found a significant indirect effect of ethnicity on willingness to call the police, and ethnicity was significantly related to individual willingness to call the police only through trust in police. However, ethnicity was not significantly related to obligation to obey, which was not significantly related to individual willingness to call the police. These findings supported the notion that the perceptions of police legitimacy measure contains two distinct factors that may differently influence certain outcomes such as willingness to call the police. Therefore, these findings suggest that although obligation to obey and trust in police represent police legitimacy, they are distinct subfactors that may have different effects on outcome variables such as willingness to cooperate with the police and willingness to comply with the law. Future research may want to continue to assess the effects of obligation to obey and trust in police separately when testing Tyler's process-based model of policing.

Second, findings from Chapter 3 have implications for the group position thesis and Tyler's process-based model of policing. More specifically, Chapter 3 investigated

whether the group position thesis and Tyler's process-based model can be combined to explain the relationship between ethnicity and individual willingness to call the police. The findings of this study partially supported this possibility; I found that Hispanics were more likely to show lower levels of trust in police when compared to non-Hispanic Whites, which led to their unwillingness to call the police. Given these findings, it is possible to examine the willingness of other groups of people to call the police by applying both the group position thesis and process-based model of policing. In particular, since the group position thesis has been applied to explain how the police are viewed by Blacks (e.g., Weitzer & Tuch, 2005), Asians (e.g., Wu, 2014), and immigrants (e.g., Jung et al., 2019), future research may want to assess whether these groups are willing to cooperate with the police and why they are willing or unwilling to do so by applying the process-based model of policing.

Third, findings from Chapter 4 have implications for the minority threat perspective and social disorganization theory. Specifically, the minority threat perspective suggests that perceived risk of victimization may explain the effect of minority population size on social control outcomes (Chamlin, 1989; Jackson, 1989; Jackson & Carroll, 1981; Liska & Chamlin, 1984). However, Chapter 4 found that perceived risk of violent crime victimization and perceived risk of property crime victimization are distinctive factors, and only perceived risk of property crime victimization mattered for explaining the relationship between ethnic context and individual willingness to call the police. These findings suggest that perceived risk of property crime victimization and perceived risk of violent crime victimization may need

to be considered separately when future research tests the minority threat perspective and its applicability to explain the association between ethnic context and social control, such as willingness to call the police. In addition, social disorganization theory insists that social context may influence informal social control through individual perceptions of police legitimacy (Kubrin & Weizer, 2003; Sampson, 2002). However, Chapter 4 did not find that perceptions of police legitimacy can explain the relationship between ethnic context and individual willingness to call the police. Thus, it is still not clear whether citizens' perceptions of the police can explain the relationship between ethnic context and willingness to call the police. Overall, although the unique social processes drawn from each theoretical perspective may contribute to understanding the relationship between ethnic context and individual willingness to call the police, the minority threat perspective may provide the more valid explanation for this relationship. Future research may want to continue to explore the relationship between ethnic context and individual willingness to call the police, and assess if other possible pathways (e.g., perceived Hispanic threat and social cohesion) drawn from the minority threat perspective and social control theory can be used to explain this relationship.

Implications for Future Research

This dissertation has several implications for future research. First, future research may implement improved sampling frames and methodologies to help minimize noncoverage bias due to the exclusion of households that do not have a landline or cell phone number. Although adjusting the sample frame by including cell phone users was implemented in the AZCVS, which improved the demographic distribution of completed

survey data in this study, difficulties remained with capturing samples of low socioeconomic status (SES) and minority populations. In particular, low SES persons and minorities may be underrepresented in the current sampling frame because prepaid cell phone plans are not included (see Lifsher, 2013). According to Berzofsky and colleague (2019), individuals on a prepaid plan are significantly more likely to be a minority, to have an income less than 138% of the federal poverty level (FPL), and to experience household budget stress. Consequently, limited access to prepaid cell phone users may increase the chance of biased survey estimates for these populations. Future research may improve representation in telephone-based surveys by including prepaid cell phone users.

The second implication is related to the generalizability of the findings. Since the data used in this dissertation were collected from the state of Arizona, it is unknown whether the findings would produce the same results in different states. For example, Chapter 2 found that Hispanics are less likely to trust the police when compared to non-Hispanic Whites, which leads to their unwillingness to call the police. The same finding, however, may not emerge in places where the majority of residents are Hispanic (e.g., El Paso, TX, about 82% Hispanic) because in areas where the majority of police are also Hispanic, Hispanic residents may be more willing to call them. In this case, in-group preference may play a significant role in individual willingness to call the police. In fact, several scholars have found that when racial and ethnic minorities are better represented in police agencies, individuals are more likely to perceive that the police are legitimate, which ultimately could lead to greater willingness among residents to cooperate with the police (Theobald & Haider-Markel, 2009; Wang et al., 2019; Weitzer & Tuch, 2006).

Therefore, future research may want to use data collected from other states to assess the impact of ethnicity on individual willingness to call the police.

Third, the AZCVS data were not collected for the specific purpose of this dissertation, thus some important variables were not available for examining the relationship between ethnicity and individual willingness to call the police and for fully testing the theoretical perspectives that were discussed in this dissertation. For instance, studies have found that racial and ethnic minorities are more likely to be stopped by the police when compared to their White counterparts (Alpert et al., 2007; Novak & Chamlin, 2012; Smith & Petrocelli, 2001), and that people who have more frequent police contacts are less willing to call the police to report a crime (Carr et al., 2007; Tyler et al., 2014), especially when they feel systematically targeted (Rengifo & Peter, 2017). In addition, several studies have found that people who hear negative stories about police from their friends, family, or the media are more likely to perceive that police officers are unfair and disrespectful (Browning et al., 1994; Gallagher et al., 2001; Warren, 2011; Weitzer & Tuch, 2006). Learning about the police through the experiences of others may influence one's perception of the police, which may then influence individual willingness to call the police. However, prior direct and vicarious contacts with law enforcement are not available in the AZCVS data. Overall, future research may want to consider additional factors, such as prior police contact and vicarious experience with the police, to provide a better understanding of the relationship between ethnicity and individual willingness to call the police.

In addition, there are some theoretical variables that may need to be considered for testing the minority threat perspective and social disorganization theory to explain the relationship between ethnic context and willingness to call the police. In particular, Blalock's (1967) minority threat hypothesis suggests that perceived minority threat is a process variable for the relationship between minority context and social control. Further, a recent study conducted by Infante et al. (2019) found that the growing Hispanic population in the US has posed perceived threats to the dominant group, primarily Whites, and that these perceived threats can be categorized by four types: economic threat, political threat, criminal threat, and opportunity threat. Including these specific dimensions of perceived threat posed by Hispanics may provide a more complete explanation for the relationship between ethnic context and individual willingness to call the police. Within the framework of social disorganization theory, in addition to perceptions of police, social ties (Bellair, 1997, Bursik & Grasmick, 1993, 1995; Sampson & Groves, 1989; Warner & Rountree, 1997) and social cohesion (Sampson et al., 1997) are also important process variables in explaining the relationship between social context and informal social control. Thus, future research may consider using all of these variables (i.e., perceived threats posed by Hispanics, social ties, and social cohesion) to examine the relationship between ethnic context and individual willingness to call the police, because doing so will allow a full assessment of the mediating mechanisms intimated by the minority threat perspective and social disorganization theory.

Fourth, Chapter 3 and Chapter 4 highlight the importance of testing the mediating mechanism of the relationship linking individual-level (Chapter 3) and contextual-level (Chapter 4) ethnicity with individual willingness to call the police. Specifically, Chapter 3 found that the relationship between ethnicity and willingness to call the police through trust in police and trust in police seemed to explain about 18% of the original ethnic effect on willingness to call the police. In addition, in Chapter 4, although the direct effect of Hispanic population size did not produce a significant effect on individual willingness to call the police, the effect of Hispanic population size was significant in this respect through perceived risk of property crime victimization. Therefore, future research could continue to examine the indirect effect of ethnicity on individual willingness to call the police and mediating mechanisms of this relationship. Doing so will allow us to better understand the relationship between ethnicity and willingness to call the police.

Implications for Policy

The continuing growth of the Hispanic population and discriminatory policing practices targeting Hispanics (see Alang, 2018; Lopez et al., 2010; Martínez, 2007) have placed important demands on researching the relationship between the police and Hispanics in the US. Given this background, a finding from Chapter 3 has direct implications for police policy and practices with respect to better understanding how Hispanic residents might be less willing to cooperate with the police. Specifically, Chapter 3 documents that trust in the police is a significant factor in Hispanic willingness, or unwillingness, to call the police. This finding suggests that to effectively engage Hispanic residents in collaborative crime control efforts and encourage witnesses

to report a crime, the police first need to elevate the level of resident trust. In addition, this finding has the potential to inform strategies for improving the relationship between law enforcement agencies and Hispanic communities (see Kirk & Papachristos, 2011; Kirk & Matsuda, 2011; see also Drakulich, 2013).

In addition, Chapter 4 suggests that higher perceived risk of violent crime victimization and negative perceptions of police legitimacy may decrease individual willingness to call the police, regardless of one's ethnicity. This finding may signal concerns about the "dark figure of crime" (President's Commission on Law Enforcement and Administration of Justice, 1967). People with a higher perceived risk of violent crime victimization and negative perceptions of police legitimacy may be unwilling to call the police to report a crime, which may produce under-reported crime rates. Inaccurate crime rates may mislead crime prevention strategies, operational planning, budgeting, and proper resource allocation by police forces (Black, 1970). Consequently, police would fail to formally resolve local crime problems that might inhibit maintaining community safety. Therefore, policy makers and police agencies may want to develop effective strategies to address the factors that affect individual willingness to call the police (i.e., perceived risk of violent victimization and perceptions of police legitimacy), which ultimately may increase residents' willingness to call the police to report a crime.

Improving the correlates of perceived risk of violent victimization and perceptions of police legitimacy may provide guidance for developing effective strategies to increase resident willingness to call the police to report a crime. Notably, a large body of literature has documented important variables that are associated with perceived risk of violent

victimization and perceptions of police legitimacy. Specifically, studies have found that prior victimization (e.g., Ferguson & Mindel, 2007; Gainey et al., 2011; Skogan & Maxfield, 1981), neighborhood disorders (e.g., Bolger & Bolger, 2019; Hinkle & Weisburd, 2008; LaGrange et al., 1992; Skogan & Masfield, 1981; Wilson & Kelling, 1982), and low level of social integration (e.g., Gibson et al., 2002; Hunter & Baumer, 1982; Sampson et al., 1997; Sampson & Raudenbush, 2004) may increase individual perceived risk of victimization. Thus, decreasing victimization experiences by crime reduction efforts, removing neighborhood disorders (e.g., vandalism and abandoned cars), and increasing residents' involvement in community activities may help decrease their perceived risk of violent victimization. In addition, regarding perceptions of police legitimacy, studies have found that people who perceive that the police do not perform their duties in a procedurally just manner are less likely to believe that the police are legitimate (Bolger & Walters, 2019; Walters & Bolger, 2019). Consequently, establishing residents' positive perceptions of procedural justice of the police through positive police-citizen contacts may improve residents' positive perceptions of police legitimacy. Hence, prior research about the correlates of perceived violent victimization and perceptions of police legitimacy along with the findings obtained through this dissertation may contribute to discussions about effective police practices for improving resident willingness to call the police to report a crime.

Related to this, police tactics commonly associated with community-oriented policing services (COPS) may be helpful to reduce people's perceived risk of violent victimization and to foster their positive perceptions of police legitimacy, which may in

turn improve individual willingness to call the police to report a crime. COPS has been promoted by the federal government since the 1960s, and police administrators and policing scholars have implemented it in a variety of forms across the United States. COPS tactics attempt to alleviate community problems and crimes by working with the community to build resilience, collective efficacy, and social infrastructure for the co-production of public safety (National Academies of Sciences, Engineering, and Medicine, 2018). In addition, COPS involves problem-solving processes that draw upon citizens' expertise in identifying and understanding social issues that create crime, disorder, and fear (Trojanowicz et al., 1998). A growing body of research has produced supportive evidence that COPS can improve residents' perceived risk of violent victimization and perceptions of police legitimacy (Gill et al., 2014; Weisburd & Eck, 2004; Zhao et al., 2002). Given the benefits associated with COPS strategies, law enforcement agencies may be able to increase citizens' cooperation with the police by addressing the challenges that residents are facing in their communities and to strengthen community members' connections with the police.

This dissertation also emphasizes the impact of ethnic context on individual willingness to call the police. Specifically, Chapter 4 suggests that although ethnic context may not have a direct impact on individual willingness to call the police, it may be indirectly associated with individual willingness to call the police through perceived risk of property crime victimization. This observation has particular implications for resident willingness to call the police to report a crime in ethnically diverse communities. Specifically, residents who live an area with more Hispanics are more likely to perceive a

higher risk of property crime victimization because they may consider Hispanics to be a threat of victimization. This biased perception may lead to a greater willingness to call the police to report a crime, which may lead to over-reporting a certain crime type (i.e., property crime). Hence, although greater willingness of residents to call the police is desirable, police officers may need to be aware of the indirect effects of ethnic context on resident willingness to call the police to report a crime and develop appropriate strategies to effectively handle potentially over-reported crimes in ethnically diverse communities.

Conclusion

The purpose of this dissertation is to advance research into the relationship between ethnicity and individual willingness to call the police by conducting three distinct but interrelated studies. These three studies highlight the importance of examining different levels of ethnic effect on willingness to call the police and testing relevant mediating mechanisms drawn from different theoretical perspectives. Specifically, Chapter 2 emphasizes the importance of testing measurement invariance of the latent construct of perceptions of police legitimacy across different groups before conducting a group comparison study. Chapter 3 stresses the significant ethnic effect on willingness to call the police through trust in police and examines the possibility of using the group position thesis and process-based model to explain the relationship between ethnicity and individual willingness to call the police. Chapter 4 emphasizes the significant effect of ethnic context on willingness to call the police through perceived property crime victimization and suggests that the minority threat perspective may be better able than social disorganization theory to explain the relationship between ethnic

context and individual willingness to call the police. Although this dissertation contributes to the scholarship on ethnicity and individual willingness to call the police by addressing important questions from existing literature, future research may need to expand on these findings to continue to investigate different levels of ethnicity's effect on individual willingness to call the police.

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