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Procedural Justice, Police Legitimacy, and Public Cooperation with the Police Among Young Slovene Adults

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Purpose:

The purpose of this study is to test various research hypotheses derived from the process-based model of policing. More specifically, the effect of procedural justice judgments on perceived police legitimacy is empirically scrutinized. The influence of police legitimacy on a variety of forms of public cooperation with police is also adjudicated.

Design/Methods/Approach:

This study tests process-based model hypotheses using cross-sectional data from pencil-and-paper surveys administered to 683 individuals 18 years and older who were enrolled in 6 high schools located in Maribor and Ljubljana, Slovenia. A series of linear regression equations are estimated for purposes of hypothesis testing.

Findings:

The regression analyses show that procedural justice is a strong correlate of police legitimacy, and that the latter influences public cooperation, net of police effectiveness. However, when the public cooperation scale is disaggregated, the effect of police legitimacy varies across different cooperation outcomes. When the police legitimacy scale is disaggregated into its component parts, only the effect of trust in police is statistically significant. The impact of obligation to obey on public cooperation with police is effectively zero.

Research Limitations/Implications:

Future process-based model research should not only assess the effects of the different dimensions of police legitimacy (i.e., obligation to obey and trust in police), but also test the impact of police legitimacy on disaggregated public cooperation with police measures. Doing otherwise increases the risk of masking differential effects.

Practical Implications:

Results from this study underscore the utility of process-based policing practices. Police officials in Slovenia and elsewhere should seriously consider seeking out and/or developing training curricula that teach and promote fair and just practices.

Originality/Value:

This study extends prior research in two important ways. First, this study contributes to a small but growing body of literature that tests process-based model hypotheses in research settings outside the United States. Second, this study evaluates the effect of police legitimacy on different forms of public cooperation with police and ideas for further research.

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Keywords: procedural justice, police legitimacy, process-based model, police, Slovenia

Postopkovna pravičnost, legitimnost policijske dejavnosti in pripravljenost mladih ljudi za sodelovanje s policijo v Sloveniji

Namen prispevka:

Namen te študije je preverjanje raziskovalnih hipotez, ki izhajajo iz modela postopkovne pravičnosti policijskega dela. Gre za empirično preverjanje učinka mnenj o postopkovni pravičnosti na zaznano legitimnost policijskega dela. Študija obravnava tudi vpliv zaznave legitimnosti policijskega dela na različne oblike sodelovanja javnosti s policijo.

Metode:

Na podlagi podatkov, ki smo jih zbrali jeseni 2011 z metodo anketiranja na vzorcu 683 dijakov četrtih letnikov s šestih slovenskih srednjih šol v Ljubljani in Mariboru, starih 18 let in več, smo z linearnimi regresijskimi izračuni preverjali hipoteze v zvezi s postopkovno pravičnostjo.

Ugotovitve:

Rezultati regresijske analize kažejo, da je postopkovna pravičnost v močni korelaciji z legitimnostjo policijskega dela, pri čemer je najpomembnejša ugotovitev, da zaznava legitimnosti policijske dejavnosti vpliva na sodelovanje z javnostjo in prepričanje o učinkovitosti policijske dejavnosti.

Ko faktor sodelovanje z javnostjo razčlenimo, učinek legitimnosti policijskega dela variira glede na različne oblike sodelovanja. Razčlenjen faktor legitimnosti policijskega dela pokaže, da je statistično pomemben edino učinek zaupanja v policijo. Vpliv prepričanja o dolžnosti ljudi za upoštevanje pravil (zakonov) na sodelovanje javnosti s policijo ne obstaja.

Omejitve/uporabnost raziskave:

V prihodnje bi bilo potrebno v raziskavah o postopkovni pravičnosti policijske dejavnosti, poleg ocenjevanja učinkov različnih dimenzij legitimnosti policijskega dela (npr. dolžnost upoštevanja in zaupanje v policijo), preverjati tudi vpliv legitimnosti policijskega dela na sodelovanje z javnostjo skupaj s policijskimi ukrepi.

Praktična uporabnost:

Rezultati te študije poudarjajo pomembnost policijskih postopkov na oblikovanje stališč ljudi do policije in pripravljenost za sodelovanje s policijo pri preiskovanju kaznivih dejanj ter podporo pri drugih policijskih dejavnostih.

Rezultati raziskave kažejo na pomembnost vključevanja vsebin s področja postopkovne pravičnosti in legitimnosti v programe usposabljanj in izobraževanja policistov.

Izvirnost/pomembnost prispevka:

Študija razširja predhodno raziskovalno delo na dva pomembna načina. Prvič, prispeva k manjšemu, a naraščajočemu obsegu raziskav o preverjanju hipotez modela postopkovne pravičnosti v raziskovalnih okoljih zunaj Združenih držav Amerike. Drugič, ocenjuje vpliv legitimnosti policijskega dela na različne oblike sodelovanja javnosti s policijo v Sloveniji in ponuja izhodišča za novo raziskovanje.

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Ključne besede: postopkovna pravičnost, legitimnost, policijska dejavnost, policija, Slovenija

1 INTRODUCTION

One of the most important developments in criminological research over the last two decades has been the increasing focus on normative considerations, such as perceptions of police legitimacy (see, e.g., Tyler, 2003). Traditionally, criminologists have preoccupied themselves with deterrence and the idea that people obey the law based on self-interested calculations about potential punishments and benefits (see, e.g., Klepper & Nagin, 1989; Sherman, 1990). But people are not only rational actors; they are also moral beings "whose interactions with each other depend on mutually recognizable patterns that can be articulated in terms of right versus wrong conduct, or of what one ought to do in a certain setting" (MacCormick, 2007: 20). They are therefore likely to obey the law and to cooperate with legal authorities on the grounds of deterrence and also for reasons of legitimacy (Beetham, 1991).

Starting with Tom Tyler's (1990) *Why People Obey the Law,* there has been an explosion of research on the antecedents and consequences of police legitimacy. The weight of the empirical evidence indicates that perceptions of police legitimacy are central to people's willingness to comply with the law, to accept the police decisions, and to help the police fight crime (Reisig, Bratton, & Gertz, 2007; Reisig, Wolfe, & Holtfreter, 2011; Sunshine & Tyler, 2003; Tyler & Fagan, 2008). This body of research also demonstrates that perceptions of legitimacy are based primarily on concerns about the fairness of processes that police follow when exercising their authority. This two-step framework is known as the process-based model of policing. Although there is a burgeoning literature that investigates hypotheses derived from the process-based model outside the United States (see, e.g., Murphy & Cherney, 2012; Reisig & Lloyd, 2009; Tankebe, 2009), much of what is known today is based primarily on data from the United States. Michael Tonry (2007: 4) suggested that the reason for this focus is because of America's "distinctive constitutional scheme premised on the notions of limited powers of government and entrenched rights of citizens, compared with the étatist traditions of Europe." Additional process-based policing research that is conducted in different socio-

political contexts is necessary to ascertain whether research findings from the United States merely reflect "local truths" or they have empirical validity across borders (Nelken, 2010).

The purpose of this study is to investigate whether and to what extent process-based model research hypotheses are supported in the Slovenian context. This study will focus on the factors that shape perceptions of police legitimacy, and the impact of police legitimacy on public cooperation with the police. Unlike prior research, the current study will assess the effect of police legitimacy on a variety of ways the public helps the police fight crime (e.g., report a stolen wallet and serve as a witness in a criminal court case). Evaluating the correlates of public cooperation with the police in this fashion will shed light on the explanatory scope of the process-based model of policing. Does police legitimacy influence whether people volunteer information to legal authorities when asked about a relatively minor criminal matter? What about when deciding whether to solicit police intervention in a more serious case that does not directly involve them? To accomplish these objectives, a series of linear regression models are estimated using cross-sectional survey data from a school-based sample of 683 young Slovene adults.

The article is structured into four main sections. First, a brief review of prior process-based model research is provided. The second section describes the research design, while the third section presents the empirical findings. Finally, the results are discussed in the light of prior studies and avenues for future research are identified.

2 THE PROCESS-BASED MODEL OF POLICING

A central concept in the process-based model of policing is legitimacy. The concept is neither new nor universally praised in the social sciences. In fact, legitimacy has been the subject of much criticism. It has been described as a "mushy" concept that is better avoided and yet crucial for understanding the maintenance of authority (Huntingdon, 1993: 46). The problem of legitimacy can be traced back to Aristotle's work on the mechanisms of compliance (Rothschild, 1977). However, its contemporary stature owes much to Max Weber, whose seminal work continues to frame social-scientific inquiry of legitimacy. Weber identified a threefold typology of legitimate authority – traditional, legal rational and charismatic – each of which is distinguished by the norms upon which it is considered valid. He argues that, in the modern State, legality is the dominant basis for legitimacy, a claim that has lead some scholars to argue that Weber equates legitimacy with "obeyed legality" (Lassman, 2000). Weber's analysis has attracted much criticism for a variety of reasons (see, e.g., Coicaud, 2002; Matheson, 1987). Beetham (1991), for example, argues that Weber places unnecessary emphasis upon people's subjective beliefs. Analysis of legitimacy, according to Beetham, should focus on the objective compatibility between the legal validity of power and the manner in which that power is exercised *and* the shared values of society.

In spite of the criticism, contemporary process-based model research relies heavily on citizens' subjective beliefs about the rightness or appropriateness of police

exercise of power. An explanation for this situation can be traced to contribution from the field of psychology, as evidence by the work of Tom Tyler, which continues to inform empirical assessments on the determinants and consequences of police legitimacy. Tyler (2003) argues that legitimacy describes situations where the influence an authority or institution exerts on people is not based on sheer capacity to muster force but rather because the decisions such an institution makes and the rules it enacts are seen as "right" or "proper" and therefore ought to be followed. One of the often-cited definitions of legitimacy is that it "represents an acceptance by people of the need to bring their behavior into line with the dictates of an external authority it has the right to dictate their behavior" (Tyler, 1990: 25). Because the present study specifically assesses hypotheses derived from the process-based model of policing, the social-psychological conception of legitimacy is adopted.

Extant process-based model research focuses on two key themes. The first concerns the antecedents of police legitimacy; that is, the factors that shape legitimacy perceptions of criminal justice institutions (e.g., the police). The second theme relates to the effect of police legitimacy on people's behavior (e.g., cooperation with police). The systematic evidence that relates to both of these themes will be reviewed in turn.

Tyler (1990) draws a distinction between two perspectives on the antecedents of police legitimacy: *instrumental* and *normative*. The instrumental perspective holds that the police are legitimate to the extent that they are effective in fighting crime and in preventing disorder. This perspective has been much discussed in the analysis of institutional legitimacy in communist societies, where rulers attempted to cultivate legitimacy through performance (Rothschild, 1977; Tankebe, 2008). The normative perspective stresses the importance of procedural justice. The argument here is that legitimacy is linked to the perceived fairness of the processes through which the police make decisions and exercise authority. More specifically, people expect the police to exercise their authority in a manner that is neutral, honest and consistent. When the police do otherwise, people conclude that they have been treated unfairly and this, in turn, leads them to call into question the legitimacy of the police. Conversely, a positive judgment of having been treated fairly enhances police legitimacy.

Procedural justice itself turns out to embrace two dimensions: "quality of decision-making" and "quality of interpersonal treatment" (Sunshine & Tyler, 2003). Quality of decision-making encapsulates a number of considerations, including the opportunity for people to present fully their case to the police, the neutrality of the police in the decision-making process, and the consistency of the police in applying the law (Paternoster, Bachman, Brame, & Sherman, 1997; Tyler, 2003). Quality of interpersonal treatment concerns public perceptions that the police treat them with politeness and dignity, and respect their human rights. While these considerations might seem minor aspects of police–public encounters, they powerfully influence individual judgments about the morality of power.

A number of studies have examined both of these perspectives, as well as the effects of police legitimacy on public willingness to cooperate with the police. Sunshine and Tyler's (2003) study of New York City residents found that

perceptions of police legitimacy were based on procedural justice judgments, and to a lesser extent on police performance in maintaining law and order. Further, they found that legitimacy influenced people's willingness to cooperate with the police. Tyler and Sunshine used data from before and after September 11, 2001 to adjudicate their hypotheses. During both time periods procedural justice remained the principal driver of police legitimacy. More recently, Tyler, Schulhofer, and Huq (2010) interviewed Muslim-Americans in New York and found that their views about police legitimacy were shaped by the fairness of the processes the police employed when interacting with the public. Those views, in turn, determined Muslim-Americans' willingness to alert the police about terrorist activities in their communities.

Drawing upon a nationwide sample of adults in the United States, Reisig, Bratton, and Gertz (2007) found that both procedural justice and distributive justice (i.e., the perception police resources are fairly distributed) were key correlates of police legitimacy. Consistent with Sunshine and Tyler's findings, procedural justice was the stronger correlate. Reisig and his colleagues also assessed the impact of the two legitimacy subscales – *trust* and *obligation* – on cooperation with the police. They found that trust in the police predicted cooperation with the police, but feelings of obligation to obey to police displayed no discernible influence. The present study will follow Reisig et al.'s lead and test the unique effects of trust and obligation.

Only a handful of researchers have sought to test process-based model hypotheses outside the United States. One the first was conducted by Hinds and Murphy (2007). Making use of survey data from adults residing in an Australian city, the authors found that procedural justice was the main antecedent of police legitimacy, with perceived police effectiveness playing a secondary role. In their study of Jamaican school children, Reisig and Lloyd (2009) reported that assessments of procedural justice increased the likelihood of cooperation with the police. Contrary to prior findings, however, the authors did not observe support for the legitimacy–cooperation association. This latter finding is consistent with Tankebe's (2009) Ghana study. Specifically, Tankebe observed that legitimacy did not explain cooperation with the police; what appeared salient in Ghana was perceived police effectiveness in fighting crime. It should be noted that the latter two studies operationalized police legitimacy as felt obligation to obey the police.

The evidence thus far from studies conducted outside the United States is inconclusive. There is a clear need for additional research that addresses whether process-based model hypotheses are empirically valid in different national contexts. That is one of the tasks of the present study. Support for process-based model hypotheses using survey data from Slovenia will suggest that the theoretical argument is not bound to a specific country. Evidence of this type may also call into question Tonry's (2007) assertion regarding the utility of legitimacy outside specific constitutional arrangements.

3 METHODS

3.1 Data

This study uses data from pencil-and-paper surveys administered to Slovenian high school students aged 18 years and older. The sample was generated by first sending a letter to all of the high schools in Ljubljana and Maribor explaining the study and requesting permission to survey their students. These cities were selected because a majority of the high schools in Slovenia are located in these two areas. Officials from six schools (4 in Ljubljana and 2 in Maribor) granted permission to conduct student interviews. Data collection took place in November and December of 2011. Students were first told about the study by their teachers. Project managers traveled to each research site and administered surveys in classrooms. Prior to filling out the questionnaire, participants received instructions on how to complete the survey, they were informed that their participation was voluntary, and were also guaranteed that their responses were completely anonymous. Most participants completed the questionnaire within 20 and 25 minutes. A total of 684 participated in the study. Similar response pattern imputation (or "hot-decking") was used to handle missing data. Information for 683 individuals was available after the completion of the imputation process. Given the nonrandom nature of the sampling strategy, the findings generated from this sample do not easily generalize to broader populations.

The sample consisted of more participants who attended a high school in Ljubljana (68.6%; $n = 469$) than Maribor (31.4%; $n = 215$). Concerning age (in years), 77.0% were 18 ($n = 526$), 16.0% were 19 ($n = 109$), 4.5% were 20 ($n = 31$), 2.5% were 21 or older ($n = 17$). The sample is comprised of more women (61.2%; $n = 418$) than men (38.8%; $n = 265$).

3.2 Measures

Public cooperation with police. The primary dependent variable reflects participants' willingness to cooperate with the police in a variety of situations, including instances of minor theft ("Imagine that you were out and saw someone steal another person's wallet. How likely would you be to call the police?" and "If the police were looking for witnesses in a case where someone's wallet was stolen, how likely would you be to volunteer information if you witnessed the theft?"), government corruption ("Imagine you had evidence that someone had bribed a government official in order to obtain a service that they would otherwise not have received. How likely would you be to report this behavior to the police?"), and a house or car being broken into ("How likely would you be to call the police if you saw someone break into a course or car?" and "How likely would you be to volunteer to serve as a witness in a criminal court case involving a crime that you witnessed?"). The closed-ended responses for these survey items ranged from 1 (*very unlikely*) to 4 (*very likely*). A principal-axis factoring model that featured all of the items used to construct the additive scales discussed in this section showed

that the cooperation items loaded on single latent construct (λ = 2.387, loadings > 0.40; see Table 1). The level of internal consistency exhibited by the scale exceeded conventional thresholds (Cronbach's α = 0.733; mean inter-item r = 0.359). *Public cooperation with police* is a summated scale coded so that higher score reflect a greater willingness among study participants to cooperate with legal authorities (M = 14.086, SD = 3.024). As noted previously, the five cooperation survey items will also be assessed separately in this study.

Police legitimacy. Prior research has conceptualized *police legitimacy* as a two-dimensional concept (Tyler, 2003; Sunshine & Tyler, 2003). Empirical research supports this contention (Reisig, Bratton, & Gertz, 2007). The first dimension, *obligation to obey*, is constructed using two items ("You should do what the police tell you to do even if you disagree" and "You should accept police decisions even if you think they are wrong") that are moderately correlated with each other (r = 0.528, $p < 0.001$). *Trust in police*, the second dimension, is also represented by two survey items ("The police in my community are trustworthy" and "I am proud of the police in this community"). The correlation between the two trust items is 0.653 ($p < 0.001$). These four items featured a 4-point response set that ranged from strongly disagree (coded 1) to strongly agree (coded 4). Results from the factor analysis confirmed that these four items load on the hypothesized factors (λ = 1.019 for obligation to obey and λ = 1.313 for trust in police, respectively). The present study operationalizes police legitimacy as a two-dimensional construct by combining the obligation to obey items and the trust in police items into a single summate scale (Cronbach's α = 0.632; mean inter-item r = 0.301). The scale is coded so that higher scores reflect higher levels of perceived police legitimacy (M = 9.824, SD = 2.302).

Procedural justice. Six survey items are used to construct the *procedural justice* scale. These items reflect personal judgments about how the police treat people ("The police are courteous to people they come into contact with" and "The police treat everyone with dignity") and the quality of the decisions they make ("The police make decisions based on the facts," "The police explain their decisions to the people they deal with," "The police make decisions to handle problems fairly," and "The police follow though on their decisions and promises they make"). The closed-ended response set for these items ranged from 1 (*strongly disagree*) to 4 (*strongly agree*). These items reflect a unitary latent construct (λ = 4.717, loadings > 0.40), and also exhibit a high level of internal consistency (Cronbach's α = 0.777; mean inter-item r = 0.369). The additive scale is coded so that higher scores reflect more positive procedural justice judgments (M = 14.876, SD = 3.142).

Police effectiveness. Four survey items that reflect judgments among the study participants for how well the police are dealing with crime and disorder in their neighborhoods were used to construct the *police effectiveness* scale. More specifically, participants were presented the following statements: "There are not many instances of crime in my neighborhood," "I feel safe walking in my neighborhood at night," "The police are doing a good job preventing crime in my neighborhood," and "The police do a good job maintaining order in my neighborhood." The factor analysis revealed that these items all load on the same factor (λ = 1.491, loadings > 0.50). The alpha coefficient for this summate scale is

0.708 (mean inter-item $r = 0.386$). The scale is coded so that higher scores reflect more positive judgments regarding police effectiveness at dealing with crime and disorder ($M = 10.395$, $SD = 2.671$).

Demographic variables. Two demographic variables are included in the analyses to help ensure that the observed estimates in the multivariate models are unbiased. *Age* is coded using categories ranging from 1 (*18 years*) to 5 (*22 years or older*) ($M = 1.332$, $SD = 0.712$). *Male* is a dichotomous measure (1 = *yes*). Male participants made up approximately 39 percent of the sample.

Table 1: Promax-Rotated Principal-Axis Pattern Loadings

		I	II	III	IV	V
1	Imagine that you were out and saw someone steal a wallet. How likely would you be to call the police?	0.050	**0.557**	-0.029	-0.049	-0.048
2	If the police were looking for witnesses in a case where someone's wallet was stolen, how likely would you be to volunteer information if you witnessed the theft?	-0.006	**0.748**	0.031	-0.011	0.047
3	Imagine you had evidence that someone bribed a government official. How likely would you be to report this behavior to the police?	-0.055	**0.465**	0.073	0.014	-0.025
4	How likely would you be to call the police if you say someone break into a house or car?	-0.029	**0.535**	-0.013	0.125	0.004
5	How likely would you be to volunteer to serve as a witness in a criminal court case involving a crime that you witnessed?	0.046	**0.699**	-0.041	-0.039	-0.009
6	You should do what the police tell you to do even if you disagree.	-0.051	0.002	0.031	0.032	**0.786**
7	You should accept police decisions even if you think they are wrong.	0.087	-0.031	-0.017	-0.019	**0.656**
8	The police in my community are trustworthy.	-0.020	0.033	0.057	**0.791**	0.001
9	I am proud of the police in this community.	0.154	-0.016	-0.068	**0.732**	0.014
10	The police are courteous to citizens they come into contact with.	**0.583**	0.034	-0.041	0.098	-0.040
11	The police treat everyone with dignity.	**0.665**	-0.036	-0.074	0.063	-0.038
12	The police make decisions based on the facts.	**0.497**	-0.044	-0.100	0.111	0.018
13	The police explain their decisions to the people they deal with.	**0.619**	0.046	0.027	-0.167	0.058
14	The police make decisions to handle problems fairly.	**0.633**	0.040	0.001	0.046	0.028
15	The police follow through on their decisions and promises they make.	**0.692**	-0.016	0.027	-0.085	0.011
16	There are not many instances of crime in my neighborhood.	-0.170	0.061	**0.614**	0.041	0.031
17	I fell safe walking in my neighborhood at night.	-0.081	-0.011	**0.572**	-0.081	0.011

18	The police are doing a good job preventing crime in my neighborhood.	0.184	0.016	**0.642**	0.044	-0.017
19	The police are doing a good job maintaining order in my neighborhood.	0.184	0.016	**0.642**	0.044	-0.017
Eigenvalue (λ) =		4.717	2.387	1.491	1.313	1.019
Note. Patten loadings greater than |0.40| are shown in boldface.						

3.3 Analytic Strategy

The analyses proceed in two stages. In the first part, the two hypotheses derived from the process-based model of policing are tested in a manner largely consistent with prior research. Doing so entails regressing the police legitimacy scale onto respondents' judgments of procedural justice, police effectiveness, and the two demographic variables. During this stage, the effect of police legitimacy on public cooperation is also evaluated in a regression context, net of police effectiveness, age, and male. The second stage breaks from prior research by investigating whether the effects observed to this point are sensitive to the operationalizations of two variables—police legitimacy and public cooperation. This is carried out in two ways. First, a series of regression models are estimated so that the effect of police legitimacy on the five component parts of the public cooperation with police scale can be evaluated, net of police effectiveness, age, and male. Next, the direct effects of the two domains of police legitimacy—obligation to obey and trust in the police—on public cooperation are subjected to empirical scrutiny.

Because the dependent variables in this study are treated as interval scale measures, ordinary least-squares (OLS) regression is used to test the hypotheses of interest. Preliminary analyses indicate the presence of heteroscedastic errors. Additionally, because students are nested in schools, the observations are not independent. These two features of the data can result in biased parameter estimates. To guard against these threats, Huber-White robust standard errors corrected for clustering on schools are used when estimating multivariate models.

4 RESULTS

The analyses begins by evaluating the Pearson's r correlation coefficients. Doing allows a preliminary empirical assessment of the hypotheses of interest. Regarding the first step in the process-based model, the results clearly demonstrate that procedural justice judgments covary with perceptions of legitimacy in the hypothesized direction ($r = 0.521$, $p < 0.001$). This finding supports a key process-based model hypothesis. The bivariate correlations also show that the police legitimacy and the public cooperation scale are empirically linked. Although the two variables are related at the 0.05 level, the magnitude of the coefficient is relatively weak ($r = 0.081$). Nevertheless, this observation supports the second process-based model hypothesis. Overall, the Pearson's r correlation coefficients support both theoretical hypotheses. Although encouraging, more rigorous tests

that take into account the impact of third variables (e.g., police effectiveness) need to be conducted before conclusions can be drawn.

The correlation coefficients also provide a look at the relationships between the independent variables. Importantly, none of the coefficients exceed an absolute value of 0.50, which is below that conventional threshold for detecting harmful levels of collinearity (i.e., an absolute value of 0.70). To further investigate whether collinearity would bias the parameter estimates, tolerance tests were conducted for the regression models in Table 2. The results indicate that collinearity is not a concern (tolerance tests > 0.70).

Table 2: Police Legitimacy and Public Cooperation with Police OLS Regression Models

Variables	Police legitimacy			Public cooperation with police		
	B	SE	*t*-ratio	*B*	SE	*t*-ratio
Procedural justice	0.334	0.029	11.57**	---	---	---
Police legitimacy	---	---	---	0.076	0.028	2.71*
Police effectiveness	0.130	0.040	3.26*	0.058	0.020	2.85*
Male	-0.280	0.083	-3.39*	-0.384	0.272	-1.41
Age	-0.223	0.086	-2.59*	-0.161	0.188	-0.86
Constant	3.912	0.386	10.13**	13.098	0.424	30.92**
F-test	5050.30**			22.87*		
R^2	0.298			0.014		
Note. Entries are unstandardized regression coefficients (*b*), and robust standard errors that adjust for clustering on schools in parentheses.						
* $p < 0.05$, ** $p < 0.01$ (two-tailed test)						

In Table 2 the police legitimacy scale is regressed onto procedural justice, police effectiveness, and the demographic variables. The joint association test (*F*-test) indicates that the four-variable model provides more explanatory power than would be expected by chance alone. The coefficient of multiple determination (R^2) shows that the model explains nearly 30% of the variation associated with police legitimacy. Separate analyses reveal that the procedural justice scale accounts for a large portion (approximately 91%) of the explained variation. The *t*-ratio for the unstandardized partial regression procedural justice estimate in Table 2 is statistically significant at the 0.01 level. The test statistic for police effectiveness also achieves statistical significance, suggesting that perceptions of whether police successfully deal with neighborhood crime and disorder influences participants' legitimacy perceptions. Interestingly, however, the inclusion of the police effectiveness in the police legitimacy model only modestly attenuates the procedural justice effect (about a 12% reduction). This indicates that the observed effect of procedural justice is not spurious. Overall, the observations thus far are consistent with the bivariate results and support the process-based model tenet that police legitimacy is significantly influenced by fair and just interpersonal treatment by the police.

Also featured in Table 2 is the OLS equation for public cooperation with police. The *F*-test indicates that the four-variable model is superior relative to a constant-

only model. However, the amount of variation accounted for by the model is very modest ($R^2 = 0.014$). As expected, police legitimacy is significantly correlated with public cooperation. The police effectiveness scale also exerts a significant effect on the outcome. With regards to explanatory power, separate analyses reveal that police legitimacy accounts for nearly twice as much explained variation as the police effectiveness scale. The effect of police legitimacy, however, is attenuated by about 23% when police effectiveness is included in the model. In sum, the results support the process-based model hypothesis that police legitimacy and public cooperation covary directly. Nevertheless, the effect appears to be fairly weak, especially when police effectiveness is specified in the equation. The analyses continue by considering whether the effect of police legitimacy on helping the police holds when different variable operationalizations are considered. Such an investigation will shed light on the robustness of the police legitimacy effect.

In Table 3, the five individual survey items used to construct the public cooperation with police scale are regressed onto police legitimacy, police effectiveness, and the personal variables. This modeling strategy is used to determine whether the effect of police legitimacy is invariant across the different forms of cooperation. The *F*-tests in Table 3 are not encouraging. Only three of the five equations exert greater predictive power than a constant-only model. In two of the models with significant *F*-tests, the *t*-ratio for the police legitimacy estimate is not statistically significant. Interestingly, in one of the two models where the *F*-test fails to achieve significance at the 0.05 level, the *t*-ratio for police legitimacy is significant. This would appear at first glance to show that individuals who perceive the police to be legitimate are also more willing to call the police if they were to witness a car or home being broken into. However, because the *F*-test indicates that none of the predictors have a linear relationship with the outcome, interpreting the police legitimacy estimate as substantively meaningful would likely be a Type I error of inference. The only significant police legitimacy effect is observed in the model for volunteering information to the police who are looking for witnesses in a case involving a stolen wallet. Three features differentiate this indicator from the other public cooperation with police items. First, volunteering information to the police who are actively looking for witnesses requires less initiative than calling the police. That is, it is a fairly passive endeavor. Second, cooperating in such a manner also entails less of a time commitment than providing testimony in a criminal court case. Finally, a criminal case involving a stolen wallet is far less serious than a case involving government corruption or breaking into a house. In light of these findings, the OLS regression model presented in Table 2 appears to be misleading in that the effect of police legitimacy is not invariant across different forms of public cooperation. Table 3 demonstrates that the effect of police legitimacy is restricted to a narrow form of helping the police fight crime that requires relatively little from individuals and involves a comparatively minor criminal offense.

Table 3: Disaggregated Public Cooperation with Police OLS Regression Models

Variables	Report stolen wallet		Volunteer information about stolen wallet		Report bribery of government official		Report house or car break-in		Volunteer as a witness in criminal court case	
	b (SE)	t-ratio	B (SE)	t-ratio	b (SE)	t-ratio	B (SE)	t-ratio	b (SE)	t-ratio
Police legitimacy	-0.002 (0.013)	-0.19	0.030 (0.011)	2.83*	0.002 (0.013)	0.16	0.033 (0.010)	3.34*	0.013 (0.011)	1.22
Police effecti-veness	0.007 (0.009)	0.76	0.022 (0.009)	2.30	0.018 (0.009)	2.02	0.003 (0.008)	0.44	0.009 (0.015)	0.58
Male	-0.147 (0.042)	-3.46*	-0.168 (0.085)	-1.99	0.165 (0.097)	1.70	-0.021 (0.056)	-0.37	-0.213 (0.049)	-4.37**
Age	0.020 (0.036)	0.56	-0.039 (0.043)	-0.89	-0.065 (0.070)	-0.92	-0.109 (0.052)	-2.09	0.032 (0.035)	0.89
Constant	2.570 (0.3127)	20.19**	2.254 (0.106)	21.17**	2.693 (0.117)	22.97**	3.276 (0.104)	31.41**	2.306 (0.208)	11.07**
F-test	8.85*		19.62**		2.64		3.89		17.53**	
R2	0.007		0.022		0.013		0.028		0.016	
Note. Entries are unstandardized regression coefficients (b), and robust standard errors that adjust for clustering on schools in parentheses.										
* $p < 0.05$, ** $p < 0.01$ (two-tailed test)										

The analyses in Table 4 address whether the two component parts of police legitimacy—obligation to obey and trust in police—exert similar effects on public cooperation with police. If they do not, then the findings reported above are potentially misleading in that they imply that both police legitimacy subscales are salient in explaining public cooperation. On the left-hand side of Table 4, the public cooperation with police scale is regressed onto obligation to obey, police effectiveness, male, and age. The *t*-ratio for the obligation to obey estimate is not statistically significant. This observation is counter to the prediction of the process-based model. It is plausible that police effectiveness is confounded with obligation to obey. However, separate analyses reveal that this is not the case. For example, the Pearson's correlation coefficient for obligation to obey ($r = 0.004$, $p = 0.927$) indicates no significant correlation with the public cooperation with police scale. In contrast, the model on the right-hand side of Table 4 shows that the trust in police estimate is in the predicted direction and the *t*-ratio is significant at the 0.05 level using a one-tailed test. These findings are consistent with prior research conducted in the United States (Reisig, Bratton, & Gertz, 2007). At a minimum, these findings call into question current measurement strategies relating to police legitimacy.

Table 4: The Effects of Police Legitimacy Subscales on Public Cooperation with Police

Variables	Public cooperation					
	B	SE	*t*-ratio	*B*	SE	*t*-ratio
Obligation to obey	-0.017	0.041	-0.41	---	---	---
Trust in police	---	---	---	0.204	0.099	2.05†
Police effectiveness	0.082	0.023	3.58*	0.036	0.020	1.73
Male	-0.416	0.263	-1.58	-0.329	0.292	-1.12
Age	-0.178	0.192	-0.93	-0.153	0.181	-0.85
Constant	13.715	0.256	53.61**	13.105	0.474	27.66**
F-test	46.82**			10.85*		
R^2	0.011			0.020		
Note. Entries are unstandardized regression coefficients (*b*), and robust standard errors that adjust for clustering on schools in parentheses.						
* $p < 0.05$, ** $p < 0.01$ (two-tailed test), † $p < 0.05$ (one-tailed test)						

5 DISCUSSION

Over the past decade, criminologists have assessed the causes and consequences of police legitimacy. Regarding the former, the empirical evidence consistently demonstrates that variation in police legitimacy is largely explained by people's procedural justice judgments (Sunshine & Tyler, 2003; Wolfe, 2011). As a predictor variable, police legitimacy has been used to explain compliance with legal statutes (Fagan & Tyler, 2005; Reisig et al., 2011; Tyler, 1990) and public cooperation with police (Reisig et al., 2007; Tyler & Fagan, 2008). Extant research also generally shows that police legitimacy is a consistent predictor of these two outcomes. The research that fails to support the legitimacy-cooperation link comes from studies conducted outside the United States. The current study sought to test these two general hypotheses using survey data from a school-based sample of young adults in Slovenia. Results from the regression analyses were largely consistent with prior research supporting the two key hypotheses derived from the process-based model. However, a more nuanced assessment revealed that one component of police legitimacy—trust in police—was a more stronger correlate. The effect of the other subscale (i.e., obligation to obey) on public cooperation was nil. Finally, this study extends prior research by investigating whether the effect of police legitimacy is invariant across different forms of cooperation. The results clearly demonstrate that it is not. More specifically, the only outcome variable that was affected by police legitimacy involved a fairly minor form of theft and a comparatively convenient way of assisting police officers. Overall, the findings from the study bear directly on three issues that require further discussion.

The first issue concerns the generality of the process-based model of policing. The relative merit of social scientific theories is evaluated on a number of dimensions, including the extent to which they are able to explain and predict phenomena of interest in different settings. As noted at the outset, the vast majority of research on the different aspects of the process-based model has been conducted in the United States. Studies based in developing nations, such as Ghana and Jamaica, suggest that aspects of the process-based model of policing may be limited to

industrialized democracies (see Reisig & Lloyd, 2009; Tankebe, 2009). The current study was conducted in a nation that clearly has a different political, economic, and social history when compared to the United States. However, one could persuasively argue that Slovenia is more similar to the United States along those three dimensions than Ghana and Jamaica. The results from the current analysis show that support for key propositions of the process-based model can be observed in a post-socialist state (also see Reisig & Meško, 2009). However, limitations were also noted. This brings us to another issue that requires elaboration.

A second point relates to the ongoing debate on how best to conceptualize and operationalize police legitimacy. The existing legitimacy literature is influenced heavily by work in the field of psychology. As a result, empirical analyses rely almost exclusively on data from people's subjective evaluations. Unlike Beetham (1991), we do not think subjective assessments are irrelevant to the study of legitimacy. However, there is the need for fresh methodological experimentation that draws upon both objective and subjective indicators. It is important to note that there are fundamental conceptual and measurement problems with the current approach. In the existing literature, police legitimacy is often measured by asking people about their feelings of obligation to obey police directives and about their trust in the police. Bottoms and Tankebe (2012) have argued that collectively and individually, trust and obligation are distinct concepts that should not be conflated with legitimacy. They contend that trust tends to be future-oriented and may be defined as "a positive feeling of expectation regarding another's future actions" (Barbalet, 2009: 375). Legitimacy, on the other hand, is a concept focused on the present; it is concerned with recognition of the moral rightness of claims to exercise power here and now, rather than in the future. On obligation to obey, it has been argued that is it the outcome of perceived police legitimacy; that is, people feel an obligation to obey the police when they view them to be legitimate (Tankebe, 2009). Moreover, legitimacy is only one of many reasons (e.g., apathy, fear, and powerlessness) why people might feel an obligation to obey the police, and therefore it would be a mistake to read every expression of obligation to obey the police as legitimacy. Drawing on Beetham (1991) and Coicaud (2002), Bottoms and Tankebe (2012) argue for police legitimacy to be operationalized with questions about the extent to which police activities are considered as legal and whether the laws the police enforce reflect the values of the society in question. These are arguments beyond the scope of the present article, but addressing them empirically is an urgent task.

Finally, the results from the present study inform police policy and practice. It has long been assumed among criminologists that the police can do little to reduce community crime rates. It is probably the case that focusing police attention on the correlates of crime, such as concentrated poverty, family disruption, and genetic predisposition, will not affect offending patterns. However, recent research has shown that some police strategies can impact crime rates (see, e.g., Braga & Bond, 2008; Cerdá et al., 2009). The current study showed that in dealing with crime the police can rely more on area residents if they cultivate legitimacy by exercising their authority in a fair and just fashion. Indeed, the research shows that individuals who perceive the police to behave in procedurally just ways are

not only more likely to perceive them as legitimate, but also are significantly more willing to get involved in crime prevention programs (Reisig, 2007). Given this amount of systematic support, police officials in Slovenia and elsewhere should seriously consider seeking out and/or developing training curricula that teach and promote fair practices.

Combined with prior research, this study demonstrates the general applicability of the process-based model of policing. Questions remain, however, as to whether procedural justice and police legitimacy have similar effects in other post-socialist countries in Europe. And other settings, such as industrialized democracies on the Asian continent, are equally intriguing potential research settings that have yet to be included among the growing roster of process-based model studies. Future researchers who conduct studies similar to the one presented here in the aforementioned sites could provide added insight into the generality of the process-based model of policing.

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