Why do people legitimize and cooperate with the police? Results of a randomized control trial on the effects of procedural justice in Quito, Ecuador

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Abstract

The present study employs a randomized control trial design to evaluate the impact of deterrence and procedural justice on perceptions of legitimacy and cooperation with law enforcement among individuals in Quito, Ecuador. Specifically, a sample of 308 premises where alcohol is sold were randomly assigned to one of two conditions: an experimental group (n = 156) in which officers received training in the implementation of a procedural justice-based script, and a control group (n = 152) in which officers were not provided with any specific instructions. Results indicate that the manipulation of procedural justice was associated with a significant enhancement in perceptions of legitimacy and a greater willingness to cooperate with the police.

Keywords Police legitimacy, Cooperation, Experiment, Policing, Deterrence

Introduction

Repeated criminological studies have consistently indicated that the efficacy of the police in addressing crime is dependent on the active engagement of the public (Bayley & Shearing, 1996; Newburn, 2005; Pate et al., 1976). Since Tyler's work in 1990, which posits that individuals comply with the law and cooperate with legal authorities due to perceptions of legitimacy rather than fear of punishment (Tyler, 1990), normative perspectives centred on legitimacy have increasingly marginalized instrumental perspectives that focus on deterrence, and these ones have also marginalized the normative perspectives in their attempt to explain cooperation with the police.

The normative perspective posits that citizens' intentions to cooperate with the police stem from their public justification of police power. This justification is based on perceptions that the police are effective, lawful, neutral, and above all, procedurally fair (Hough et al., 2013; Tyler & Fagan, 2008; Tyler, 1990). In contrast, the instrumental perspective argues that human rationality induces prosocial behaviour, such as cooperation with the police, based on the threat of sanctions (Nagin, 2013; Piquero et al., 2011).

A few experimental studies that have combined these two perspectives have reached limited agreement (i.e., Sunshine & Tyler, 2003; Tsushima & Hamai, 2015; Tyler & Fagan, 2008). As such, it is unclear whether individuals voluntarily assume the duty to obey authority because they recognise its moral fitness or because they fear punishment. Focused deterrence strategies have been proposed as theoretically and empirically grounded alternatives that can positively merge the normative and instrumental dimensions in real-world settings (Braga

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Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 2 of 19

& Kennedy, 2020; Kennedy, 2016). Research suggests that direct and fair police communication with offenders about the risks of penalties can enhance the belief that the police are legitimate and, therefore, that it is the public's duty to comply with their messages (Braga & Kennedy, 2020; Wallace et al., 2016).

While focused deterrence strategies have been shown to be effective in reducing serious crimes such as murder (see Braga et al., 2014), their effectiveness in most Latin American countries with high murder rates has not been proven. In Ecuador, for example, despite a concerning rate of intentional homicides (13.95 per 100,000 inhabitants), public safety policies to reduce these rates continue to rely on traditional deterrence strategies. In this regard, while 62% of murders in Ecuador (n = 1531) occur in the context of *sicariato* and robbery, the Cochapamba neighbourhood in Quito represents a different setting. Historically, this neighbourhood has witnessed higher rates of murders than the average in Quito due to interpersonal conflicts between alcoholics on the streets (National Direction of Crime Analysis, 2022). This situation led the police to limit the availability of liquor on the streets through police operations on liquor trading (henceforth, OPCL),[1] which aim to discourage irregular sales.

This study applies a randomized control trial to test the effects of procedural justice variables (i.e., dignity and respect, voice, trustworthy motives, and neutrality) with deterrence messages (i.e., knowledge of obligations, infractions, and sanctions) on legitimacy and cooperation perceptions in the context of OPCLs. The present study endeavours to investigate the impact of the real application of procedural justice on perceptions of procedural fairness, legitimacy, and cooperation with law enforcement among individuals in Cochapamba neighbourhood. Furthermore, we seek to empirically examine the factors postulated by extant literature as influencing perceptions of police legitimacy and cooperation with the police.

Theoretical framework
Police legitimacy and procedural justice
From the normative approach, compliance with the law and cooperation with officers are a result of public recognition of police legitimacy. Power 'is legitimate, and thus transformed into authority, when its use follows rules that are regarded as fair by both the power-holders and those over whom power is exercised, and when the latter confer their consent to the use of this power' (Hough, 2021). Citizen perceptions of the good intentions and competence of the police in fulfilling their responsibilities

are essential for inspiring public confidence and recognition of police authority (Hough, 2012; Jackson et al., 2013; Roché, 2019). Additionally, obedience to authority is influenced by the public's values, as these values may lead individuals to believe that deference to police authority is morally justifiable (Sunshine & Tyler, 2003; Tyler & Fagan, 2008; Tyler & Huo, 2002). In other words, police legitimacy is not solely dependent on the 'right to rule' but also on the 'public justification of power' by citizens (Jackson et al., 2013). For individuals to voluntarily agree to obey police instructions, the behaviours deemed appropriate by the police must also be judged to be morally valid by the public (Roché, 2019).

Criminological studies have primarily focused on identifying the factors that influence perceptions of police power. For example, research has found that perceptions of police legitimacy are associated with the equitable distribution of police resources (López, 2021; Tyler & Huo, 2002), law-abiding police behaviour (Sun et al., 2018) effectiveness in crime control (Bradford et al., 2012), and procedural fairness (Mazerolle et al., 2013b; Walters et al., 2019). However, the relative importance of each factor may vary depending on the cultural context in which police-citizen relations take place (Jackson et al., 2014; Tankebe, 2009).

This study focuses on the concept of procedural justice. The concept of procedural justice has been used to investigate the reasons why individuals obey and cooperate with authority without the need for coercion. Specifically, it has been examined in the context of conflict resolution in judicial decisions and police-citizen interactions. Experimental studies in real-world settings have found that procedural justice is a strong predictor of perceptions of police legitimacy (Langley, 2014; Mazerolle et al., 2013a; Sahin et al., 2017). This factor can lead citizens to comply with the law and be willing to cooperate with the police (Hough et al., 2013; Reisig et al., 2014; Tyler & Fagan, 2008).

Procedural justice improves the quality of police treatment and decision-making. The literature identifies four elements that define procedurally fair police behaviour: dignity and respect, voice, neutrality, and trustworthy motives (Mazerolle et al., 2012; Tyler & Blader, 2003). Police are considered to be behaving in a procedurally fair manner when they treat citizens with dignity and respect, allow citizens to express their concerns, views and discomfort before making a decision, demonstrate impartiality and objectivity without personal bias, and justify their intervention by showing trustworthy motives (Murphy, 2009; Tyler, 2003). This theory implies that the police are the main actors shaping public attitudes, therefore interactions between officers and citizens are

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[1] Acronym of the original version in Spanish, i.e., *operativos policiales de comercialización de licor* (OPCL).

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 3 of 19

an excellent opportunity to enhance or undermine their legitimacy (Oliveira et al., 2020).

As a result of fair and respectful treatment by the police, citizens are less likely to challenge officers and more likely to cooperate with them in maintaining order and public safety (see Dai, 2020; Wood et al., 2020). Lessons from procedural justice have led some law enforcement agencies to complement traditional police training –which prioritizes coercive tactics and self-defence– with training that promotes quality of service in community relations. Although the number of police procedural justice training programs is limited, some studies have revealed that, after training, officers display more positive attitudes towards procedural justice, better conflict resolution skills, and greater empathy for crime victims (Wheller et al., 2013). Furthermore, studies have found a positive impact of training on officers' behaviour, they become more fair, respectful, and polite to the public (Antrobus et al., 2019; Wood et al., 2020), choose to listen carefully to citizen's views (Dai, 2020), and use less force-based solutions to resolve conflict situations (Rosenbaum & Lawrence, 2017). Research has demonstrated that the implementation of procedural justice principles in police training can lead to a reduction in violent encounters between law enforcement and the public, as well as a decrease in complaints against officers and arrests. Additionally, citizens may be more inclined to cooperate with the police when they perceive that officers are treating them in a fair and respectful manner (Wood et al., 2020).

Deterrence and procedural justice

From an instrumental perspective, compliance with the law is motivated by the threat of severe, immediate and certain punishment. Police forces commonly employ deterrent tactics such as excessive control, repeated presence, threat, arrest and imprisonment to prevent criminal behaviour by instilling fear of potential punishment (Nagin et al., 2015) In the traditional understanding, the ultimate goal of deterrence is to modify the behaviour of potential offenders through the prospect of formal punishment (i.e., Klepper & Nagin, 1989). The effectiveness of deterrence is predicated upon the severity, swiftness, and credibility of the punishment, such that the costs associated with criminal activity are elevated, and the inclination to engage in criminal behaviour is diminished (Nagin, 1998; Paternoster, 1987), particularly when the likelihood of arrest is perceived as high. The offender, in accordance with these principles, recognizes that the avoidance of harm and pursuit of benefits are mutually exclusive and that the former should be avoided while the latter should be pursued and obtained (Kennedy, 2016). Deterrence implies that policing strategies should focus

on increasing the risk of arrest to reduce the prevalence of criminal behaviour.

Deterrence theory recognizes the offender as a rational being capable of assessing risks and maximizing benefits (Cornish & Clarke, 1986; Nagin, 1998). Thus, for these strategies to be effective, they must be perceived as valid and credible by offenders when assessing the risks of committing a crime (Stover & Brown, 1977). Research has shown that offenders primarily base their risk assessments on the behaviour of authority figures (Lum & Nagin, 2016; Nagin et al., 2015). If the police are perceived as lacking punitive credibility due to non-compliance with warned punishments, inaction on persistent criminal activity, weak control over criminal habits, and unfair enforcement of the law, the measures taken to ensure law enforcement may be viewed as unlikely, unpredictable, and even unfair and reprehensible by the public (Braga & Kennedy, 2020; Kennedy, 2016; Tyler & Fagan, 2008).

The concept of focused deterrence, in a non-traditional sense, is a novel approach to deterrence that emphasizes the utilization of varied sanctions to positively influence perceptions of risk, certainty of punishment, and ultimately, criminal behaviour and crime rates (Kennedy, 2011, 2016). This approach emerged as a set of fundamental principles that promote a more legitimate performance by authority figures while reducing the likelihood of criminal behaviour (Braga & Weisburd, 2012; Kennedy, 1997). Focused deterrence strategies are designed to address specific and recurrent issues of insecurity, and involve the collaboration of tactics from criminal justice actors, social service organizations, and the community (Levchak, 2021). Studies have shown that focused deterrence is effective in deterring specific forms of violent behaviour among chronic offenders, gang members, and those involved in street drug markets (Braga et al., 2014; Wallace et al., 2016).

This study centers on a type of focused deterrence strategy: the specific communication of punishment risks (Corsaro, 2013; Papachristos et al., 2007). This approach, as previously demonstrated (Braga & Kennedy, 2020; Wallace et al., 2016), is implemented by incorporating elements of procedural justice. The key element of focused deterrence strategies is the delivery of personalised and explicit deterrence messages to targeted offenders (Braga et al., 2018; Trinkner, 2019). The police identify individuals who pose a danger, are problematic, or symbolically significant, and hold one-on-one meetings with them to communicate the risks, penalties and police controls associated with their criminal behaviour. This approach aims to alter offenders' perceptions of punishment and motivate them to re-evaluate the risks

of continuing their criminal behaviour (Kennedy, 2016; Wallace et al., 2016).

In these police-citizen meetings, a procedurally fair approach is prioritised to ensure that the authorities' role is seen as legitimate and welcome, thereby encouraging offenders to avoid recidivism (Kennedy, 2011; Trinkner, 2019; Wallace et al., 2016). To be effective, these personalised interventions must be perceived as necessary, fair, and transparent by offenders, thereby promoting legitimacy and compliance with the messages (Braga & Kennedy, 2020; Papachristos et al., 2012). A face-to-face notification that impartially and transparently conveys the obligations and sanctions that the offender would face in case of non-compliance can prevent enforcement from being perceived as unfair and illegitimate (Braga & Kennedy, 2020).

In the context of direct interactions with offenders, compliance with the law is primarily driven by evaluations of the normative conduct of the authority, as opposed to evaluations of the costs associated with criminal activity (Papachristos et al., 2012; Wallace et al., 2016). Accordingly, although these one-on-one meetings convey a deterrent message (Trinkner, 2019), the incorporation of polite, proper, impartial, and trustworthy treatment serves to enhance the moral import of the message, thereby augmenting compliance with the law and cooperation with law enforcement (Fagan & Piquero, 2007).

Policing alcohol consumption in Ecuador
In Ecuador, the national police force –composed by 51,413 police officers– is decentralized into three systems: community policing, criminal investigation, and intelligence. Each system has distinct tactical objectives, including deterrence, reaction, and anticipation of criminal behaviour. However, all systems are ultimately intended to contribute to the reduction of crime and violence. To evaluate the performance of the police in this regard, the rate of intentional homicide is often employed as a metric.

In 2021, 38% ($n=955$) of intentional homicides nationwide were related to interpersonal conflict, and 62% ($n=1531$) to criminal activities like robberies and *sicariato*. The Metropolitan District of Quito (DMQ) was one of the only two territories in Ecuador where interpersonal violence (65.9%; $n=95$) exceeded criminal violence (34%; $n=49$) at the time of the murders. The highest incidence of interpersonal conflicts occurred in the context of street fights, accounting for 42.25% of all conflicts (National Direction of Crime Analysis [DAID], 2022). This was particularly prevalent among individuals who had recently consumed alcohol, comprising 39.9% of such incidents. In an effort to prevent these types of

conflicts in public spaces, the National Police of Ecuador has implemented strategies such as limiting the irregular sale of alcohol and prioritizing the identification of individuals under the influence of alcohol during patrols, with the goal of requiring them to vacate the area.

As reported by the Integrated Emergency System ECU911 (2021), the removal of individuals under the influence of alcohol from the streets was the most common citizen alert attended to by the police (28.5%) in 2020. In an effort to decrease the availability of alcohol, the police have implemented targeted operations, such as the OPCL, which focus on various establishments, including bars, nightclubs, karaoke bars, and liquor stores. These operations involve visits by police to these establishments in order to discourage the sale of alcohol without a permit and outside of designated operating hours, as this contributes to an increased availability of alcohol in public spaces and, as a result, an increased likelihood of social conflict. Frequency of OPCL is often contingent upon the decisions of high-ranking managers, rather than the proactive initiative of individual officers. As a result, it is not uncommon for such operations to be infrequently implemented.

The field of criminology has consistently established a spatial correlation between the presence of alcohol-serving establishments and crime (Gmel et al., 2016). Studies have consistently demonstrated the relationship between alcohol availability and consumption and an increase in serious criminal offenses, such as homicide (Scribner et al., 1999). This relationship is further exemplified in the findings of Norström (2000) in Norway, who discovered that a 12% increase in the density of alcohol outlets corresponded with a 6% increase in reported instances of violence.

The current study
The objective of this study is to investigate the effects of a procedurally fair intervention on the perceptions of procedural fairness, police legitimacy, and cooperation with police among liquor traders. Specifically, the study aims to examine the impact of the intervention on perceptions of the certainty of punishment and its relationship with willingness to cooperate. Five hypotheses are proposed to guide this research:

H1: Managers of business premises in the experimental condition will exhibit a higher likelihood of perceiving the actions of the police as procedurally fair, in comparison to managers in the control condition.

H2: Procedural justice has the most significant influence on perceptions of legitimacy in comparison to legality, distributive justice, and effectiveness.
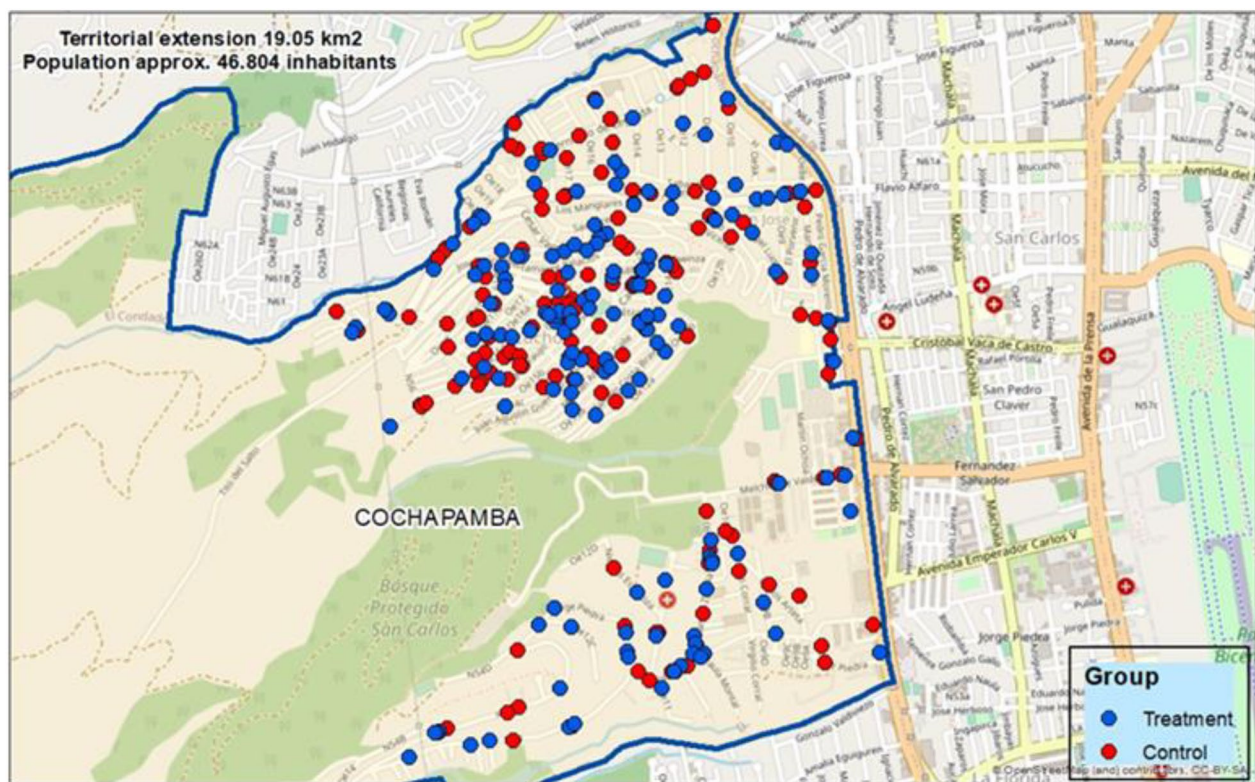
Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 5 of 19

Fig. 1 Geolocation of premises that sells alcohol in Cochapamba Neigborhood

H3: Perceptions of legitimacy shape the public's willingness to cooperate with the police, and its effect is greater than that of legality, distributive justice, effectiveness, procedural justice and punishment certainty.

H4: Managers of business premises exposed to the experimental condition are more likely to perceive higher levels of risks of punishment than managers in the control condition.

H5: Managers who perceive higher risks of punishment are more likely to be willing to cooperate with the police.

Methods and data

The premises selected for the study were the total population of premises selling liquor in the Cochapamba neighbourhood. The type of store, physical size, road accessibility and commercial affluence of each of 308 establishments were the covariates used in our randomized block design to divide the premises into two groups: 152 shops will receive traditional police operations and 156 operations adapted to the experimental condition. (Fig. 1). We use the *block_ra* function of the 'randomizr' package in R (Coppock, 2019).

In order to implement the study, the police chief selected 21 of the 48 available officers within her jurisdiction for assignment to the experimental condition and

27 for assignment to the control group. To mitigate the potential for experimental contamination, it was decided that officers from the control group would conduct their interventions prior to the initiation of training for officers assigned to the experimental group. The OPCL operations were planned to be conducted independently, during regular eight-hour patrol shifts. Prior to the start of each shift, officers in both groups were provided with a map outlining the number of establishments to be visited and their geographic locations (as depicted in Appendix 1).

Control condition

Police officers in the control group were explicitly instructed to visit the assigned liquor premises, and to proceed in a habitual manner, as they were accustomed to doing. During operations aimed at promoting OPCL, traditional policing typically emphasizes the threat and punishment and undervalues key elements of procedural justice because they are unaware of their importance and effective implementation. However, in our research, officers, with the guidance of their supervisor, jointly agreed on an intervention that was exclusively deterrent in nature. During OPCLs, the protocol necessitated that police officers solicit and verify the permits from the

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 6 of 19

managers to ensure their compliance. In the event that the manager lacked the necessary licenses or the existing licenses had expired, the officer advised the correction of these deficiencies in a timely manner, in order to avert potential penalties. In contrast, the primary aim of the control condition was to deter the illicit sale of liquor through the utilization of a traditional, rapid, passive, and threatening intervention. The duration of these operations, on average, was 1 to 2 min for the officers involved. The 152 traditional operations were executed in the month of July 2021.

Training on procedural justice

The successful implementation of policing formats based on procedural justice has been found to require the presence of 'supervision' (Mazerolle et al., 2012; Sahin et al., 2017). However, another study, despite the presence of supervision, resulted in failure, possibly due to officers minimizing the effects of procedural justice, and perceiving its implementation as an imposition (Macqueen & Bradford, 2017). In light of these considerations, we decided to implement a training program on procedural justice. The objective of the training was to alter police officers' perceptions and attitudes towards employing the four components of procedural justice, so that they would be able to improve their autonomous performance in encounters with liquor traders.

In order to implement the training intervention, three groups of seven police officers were formed, each of which received 16 h of training spread over a two-day period. On the first day of the training, in addition to addressing theoretical concepts such as police effectiveness, the importance of service quality and legitimacy, focused deterrence, and interpersonal relationship skills, the officers also engaged in a discussion of the legal obligations of liquor traders and the operational capabilities of the police. This discussion served to jointly establish an action script containing key messages of procedural justice (as depicted in Fig. 2). The script was designed to be flexible and allow for improvisation while remaining consistent with the actual execution of the tactical aspects of the OPCLs. On the second day of training, the officers discussed and practiced a script execution style that emphasized empathy and conflict resolution through structured dialogue and the incorporation of traders' opinions and perceptions. The scripted messages were also memorized and rehearsed.

Experimental condition

Between August and September 2021, 156 OPCLs were conducted as part of an experimental condition. The interventions began with police officers politely introducing themselves and explaining the purpose of their presence, emphasizing dignity, respect, and trustworthy motives. The officers then described the procedure by which the premises had been selected, emphasizing transparency and the random nature of the selection process. The goal of this approach was to engender a sense of neutrality and to encourage the manager to perceive the officer's good intentions and to be more willing to engage in further communication.

During the intervention, the officers asked the manager whether or not liquor was being sold on the premises, unless the sale was clearly obvious. They were encouraged to engage in conversation without abruptly accusing the manager, in order to increase trust and provide an opportunity for the manager to express their perspective. When the sale of liquor was confirmed, the officer asked for the necessary permits and took a discretionary role in recommending and suggesting that they were in order. Additionally, the police officers facilitated the display of a poster outlining the legal obligations of liquor trading, in order to ensure awareness. They also described the penalties for non-compliance aloud and illustrated the same in Appendix 2 .

In addition to outlining the legal obligations and associated penalties for violations of liquor trading regulations, the poster displayed during the OPCL interventions also included a web reference providing information on how to obtain a permit in case the trader did not possess one. This was intended to demonstrate the officers' trustworthy motives and to provide a resource for traders to access. To further reinforce the trader's participation in the intervention and feelings of worthiness, the officer chose to solicit the trader's opinion on the potential impact of liquor consumption on the safety of the neighbourhood. For example, the officer might ask, '*What do you think is the impact of public alcohol consumption on the neighbourhood's safety?*' Their answer prompted the officer to hand out and partially describe a second poster that addressed this question in more detail.

This second poster featured a personalized density map that explicitly highlighted crimes that had been perpetrated in the vicinity of the business premises within a 200-m radius, as well as a set of figures describing the levels of social conflict and violence in the neighbourhood associated with the public consumption of liquor. This approach aimed to provide the trader with a sense of voice and to reinforce the officers' trustworthy motives (see Appendix 3).

Finally, the police officer would insist on asking if anything was pending to be resolved before saying goodbye and thanking the manager for the attention (respect and voice). The time spent on these operations was, on average, 6 to 9 min. Trained police officers, in contrast to those in the control group, employed more time as the

Remember :

Be neutral

Be respectful

Allow people to talk

Motivate confidence

Good morning. It is a great pleasure to be here. I am the (…*put your rank and name*). I work for (*write your police dependency*)…We have randomly selected this location from among others in the neighborhood... So today it is your turn, later on it will be your neighbor's turn and tomorrow another neighbor... We will be doing this for approximately a month... This procedure will be carried out for two specific purposes.

- We want to verify if liquor or beer is sold here/at this location; and (You could say "here," or "at this location.")
- We want to give you two bulletins that will guide you to a much more responsible alcohol marketing.

Regarding the first objective, please could you tell me if liquor or beer is sold here/ at this location…?

> *Review documents/ commend them if they have got the documents/ motivate to obtain them/ explain how to do it*

With regard to the second objective of our visit, we have brought you some informative flyers that aim to raise awareness of responsible liquor sale.

> *Deliver the 1st bulletin and partially describe it...*

> *When you're done it's important to ask them a question (interact).*

By the way, sir/.madam.., I would like to ask you:

> *Choose any*

According to you, what do you think is the impact of public alcohol consumption on the safety of the neighborhood?

Do you have knowledge about the crimes that could be committed due to liquor consumption on the streets?

> *While the citizen is speaking, the 2nd bulletin is delivered and they are interrupted very subtly.*

Look. (pointing a the map)... we are more or less here, and these are the crimes related to the consumption of liquor that have been committed within a 200m radius of your premises.

> *Continue with the partial description and highlight the spatial relationship between liquor and crime*

> *To finish: ... use any of the following:*

Would you like to recommend something?

Anything else you want to tell us?

Thank you very much, have a good day/afternoon/evening.

Fig. 2 Intervention script based on procedural justice (adapted from the original in Spanish)

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 8 of 19

construction of the procedural justice dose required a higher level of content. The experimental dose comprised of the four key aspects of procedural justice and one aspect of focused deterrence (personalized communication of the risks of sanctions: personalized information about obligations and penalties, and crimes associated with the sale and consumption of alcohol, respectively).

Data collection

Following the completion of both the control and experimental OPCL interventions, surveys were collected from all participating premises. These surveys were administered between the second and third days post-intervention in order to mitigate the possibility of any potential contamination of responses. In order to collect the surveys, we visited each participating premise and requested to speak with the individual who had interacted with the police officers during the planned operations. Participants were then invited to complete the questionnaire at their convenience and without disrupting their business activities. It was emphasized that the survey was anonymous and voluntary in nature. On average, we collected approximately nine surveys per day, and the mean survey completion time was approximately 20 min. Despite recommendations that both groups perform the OPCL in accordance with the study's plan, there were three cases in which the police officers were compelled to visit the sites before the designated date (one in the control group, two in the treatment group) to resolve minor conflicts, such as drunken patrons and customers in debt. However, at the time of conducting the survey, we ensured that the administrators were able to recall and assess the planned police control.

Sample and measures

The study was conducted in the Cochapamba neighbourhood, which has been identified as the area of Quito with the highest concentration of murders in the context of interpersonal violence between alcoholics (6.5%) since 2010. A cross-sectional survey was administered to the total population of liquor retailers located within this jurisdiction of the Cochapamba neighbourhood (N = 308). The response rate was balanced between the control group (*n* = 152) and the experimental group (*n* = 156). The participants had a mean age of 39 and 41 years, respectively. In terms of gender, 48.4% of the participants were men and 51.6% were women. The majority of participants identified as mixed race (81.1%), owned their store (59.1%), had completed high school (57.5%), and earned between $400 and $800 (45.5%). None of the demographic variables analysed demonstrated significant differences (p-value > 0.05).

The survey utilized in this study aimed to assess perceptions of the behaviour of police officers in relation to procedural justice, perceptions of legality, distributive justice and the perceived effectiveness of the police. Additionally, questions were formulated to gauge perceptions of legitimacy, willingness to collaborate with the police, and the perceived certainty of punishment for non-compliance with legal liquor sales regulations (Adapted from Mazerolle et al., 2013a; Sunshine & Tyler, 2003). Responses were measured using 5-point Likert scales, ranging from "strongly disagree" to "strongly agree" except for the variable of effectiveness which was measured with seven points, ranging from 'completely ineffective' to 'strongly effective'. Except for distributive justice, legality, and certainty of punishment all variables were transformed into latent variables through principal component analysis. Control variables, such as age and sex (0 = 'male', 1 = 'female') were also included. The experimental condition was coded as 0 = 'control' and 1 = 'treatment' (see Appendix 4 for further details).

Results

To ensure the validity of our scale, we employed principal component analysis (PCA) to determine the reliability and validity of the latent variables used to measure the theoretical construct, in order to avoid any potential impact on the empirical findings of our study (DeVellis, 2017). The PCA revealed the presence of four principal components with eigenvalues greater than one, which together explained 62.8% of the total variance. The results of the PCA were further supported by the overall Kaiser–Meyer–Olkin (KMO) measure (0.90), Bartlett's spherical test (p < 0.001), and visual inspection of the sedimentation plot, which recommended retaining four components for all items.

We then conducted the Mann–Whitney U-test to determine whether there are differences in perceptions of procedural justice between premises managers in the treatment and control groups. We decided to run this non-parametric test instead of the independent sample t-test because our data did not meet the assumptions of normality and homogeneity of variances (Table 1).

The results presented in Fig. 3 indicate a significant difference between the treatment and control groups in their perceptions of procedural justice, distributive justice, legality, legitimacy, cooperation, and certainty of punishment. The mean values for these key measures were found to be higher in the experimental group when compared to the control group. As such, the managers who participated in the experimental protocol were significantly more likely to express that the police actions were procedurally fair, distributively fair and legal when compared to the control group. Additionally,

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 9 of 19

Table 1 Principal component analysis

Item	Factor 1	Factor 2	Factor 3	Factor 4
Cooperation ($a = 0.89$)				
Reporting alcoholic public consumption	0.751			
Recommending not to consume alcohol in street	747			
Reporting street fights	0.730			
Working with the police to improve neighbourhood safety	0.706			
Reporting suspicious activity	0.691			
C alling the police to report a crime	0.666			
Not allowing people to consume alcohol next the premises	0.638			
Providing information to capture a suspect	0.610			
Procedural justice ($a = 0.89$)				
Being polite and cordial		0.793		
Letting them talk		0.793		
Listening		0.793		
Treating with respect		0.764		
Explain reasons		0.747		
Justify decisions		0.737		
Being neutral		0.302		
Effectiveness ($a = 0.90$)				
Maintaining public order			0.842	
Preventing crime			0.828	
Responding quickly to emergencies			0.815	
Dealing with problematic people			0.794	
Attending drug trafficking problems			0.787	
Legitimacy ($a = 0.79$)				
Sharing moral values				0.713
Defending moral values				0.652
Agreeing with what is good and wrong				0.651
Obeying the police because it is right				0.602
Obeying the police even if you don't want to				0.472
% Variance	38,780	10,690	9,050	4,770

administrators in the experimental condition were found to be significantly more likely to validate the authority of the police and to exhibit a greater willingness to cooperate with them. Furthermore, they were found to perceive higher levels of certainty of punishment. In contrast, no significant differences were found between the two groups in terms of perceptions of effectiveness ($U = 11.981$; $p = 0.873$).

Table 2 shows the associated variables for police legitimacy. In contrast to the possible predictors of sex, legality and effectiveness perception, the procedural justice variable was positively and significantly related to legitimacy to a greater extent than the other variables ($ß = 0.60$; $p < 0.0005$). In other words, perceptions of police legitimacy were higher among those who reported that the police had displayed a fair and correct behavior during the police control of premises. The same result was observed for those managers who perceived the police to be non-discriminatory ($ß = 0.15$; $p < 0.01$). Age also predicted police legitimacy ($ß = 0.08$; $p < 0.05$). Older shopkeepers were more likely to validate police authority during OPCLs. Overall, the regression model significantly predicted police legitimacy, $F(6, 301) = 59,13$, $p < 0.0005$, adjusted $R^2 = 0.53$.

Finally, we ran a multiple linear regression to predict self-reported cooperation with the police from the control and independent variables. Table 3 shows that none of the control variables were significant predictors, nor were legality and distributive justice. However, police procedural justice, effectiveness, legitimacy and certainty of punishment were a positive and significant predictor of cooperation with the police. Specifically, the people that reported high levels of procedural justice were more likely to want to cooperate with the police ($ß = 0.17$; $p < 0.01$). Our findings also suggest that an increased perception of the police's effectiveness in combating crime
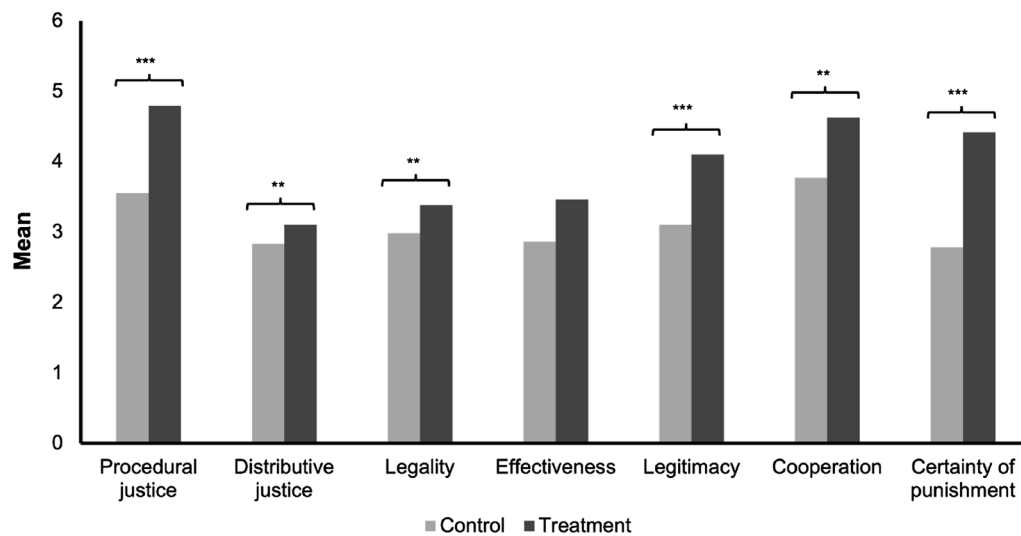
Fig. 3 Difference in means for study variables between control and treatment groups. $p < 0.01$** $p < 0.001$***. All variables were assessed utilizing a five-point Likert scale, with the exception of effectiveness, which was evaluated using a seven-point Likert scale

Table 2 Multiple regression predicting police legitimacy

Legitimacy	B	95% CI		SE	β	R^2	ΔR^2
		LL	UL				
Model						0.54	0.53***
Constant	0.58**	0.18	0.98	0.202			
Sex (female)	0.05	− 0.06	0.16	0.06	0.03		
Age	0.00*	0.00	0.01	0.00	0.08*		
Legality	0.06	− 0.03	0.14	0.04	0.07		
Procedural justice	0.051***	0.43	0.58	0.04	0.60***		
Distributive justice	0.12**	0.03	0.21	0.04	0.15**		
Effectiveness	0.04	0.18	− 0.00	0.08	0.08		

N 308, *B* standardized regression coefficient, *CI* confidence interval, *LL* lower limit, *US* upper limit, *SE* standard error, *β* standardized coefficient, R^2 coefficient of determination, ΔR^2 Adjusted R^2

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

is positively correlated with a heightened willingness to express support for their actions ($\beta = 0.18$; $p < 0.01$). We also found that cooperation with the police is associated mainly with legitimacy ($\beta = 0.36$; $p < 0.0005$). Thus, managers who reported that the police have values that match with those of the public and feel obliged to obey them were more willing to cooperate with the police. Similarly, the willingness to cooperate with the police was found higher among managers who perceive a higher risk of authority sanctions. Contrary to one's expectations, it was found that certainty of punishment perceptions where positively and significantly associated with the self-reported desire to cooperate with the police ($\beta = 0.13$;

$p < 0.05$). This regression model explained 40% of the variance in cooperation with the police $F(8, 298) = 26.58$, $p < 0.0005$.

Discussion

Our randomized control trial suggests that it is possible to improve public perceptions and willingness to cooperate with the police through fair and respectful policing practices, without relying solely on the influence of fear of punishment. These findings are consistent with previous research, which has demonstrated that citizens are more likely to comply with the law and cooperate with the police when they perceive officers to intervene in a

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 11 of 19

Table 3 Multiple regression predicting cooperation with the police

Cooperation	B	95% CI		SE	β	R^2	ΔR^2
		LL	UL				
Model						0.41	0.40[***]
Constant	7.31[**]	3.18	11.44	2.09			
Sex (female)	0.70	− 0.42	1.83	0.58	0.05		
Age	− 0.01	− 0.05	0.02	0.02	− 0.03		
Legality	− 0.21	− 1.13	0.70	0.46	− 0.02		
Procedural justice	1.33[**]	0.37	2.30	0.49	0.17[**]		
Distributive justice	− 0.27	− 1.20	0.64	0.46	− 0.03		
Effectiveness	0.80[**]	0.31	1.28	0.24	0.18[**]		
Legitimacy	3.32[***]	2.13	4.51	0.60	0.36[***]		
Certainty of punishment	0.64[*]	0.15	1.12	0.24	0.13[*]		

N = 308, *B* standardized regression coefficient, *CI* confidence interval, *LL* lower limit, *US* upper limit, *SE* standard error, *β* standardized coefficient, R^2 coefficient of determination, *Δ R^2* Adjusted R^2

[*] $p < 0.05$

[**] $p < 0.01$

[***] $p < 0.001$

fair and friendly manner (Hough et al., 2013; Murphy et al., 2008; Reisig et al., 2014; Tyler & Huo, 2002) rather than solely due to fear of punishment (Sunshine & Tyler, 2003; Tyler & Fagan, 2008). Even though the findings suggest that instrumental judgements can predict the self-reported perceptions of cooperation, these effects on cooperation at best are small when they compete hand in hand with procedural and legitimacy judgments.

Our results revealed that liquor traders who received the experimental intervention from police officers trained in procedural justice were significantly more likely to perceive that the officers acted with procedural fairness than those who received the control intervention, providing support for our initial hypothesis. This finding suggests that the behaviour of police officers trained in procedural justice can positively shape citizens' evaluations of their performance. Our results indicate that a proactive, fair, and respectful approach to policing is not only noticed by citizens, but also valued and recognized by them. In line with previous studies, we also found that police legitimacy is associated with public perceptions of police performance, such as crime control effectiveness (Bradford et al., 2012), distributive fairness (López, 2021) and procedural justice. Our findings contribute to the literature by exploring the predictors of police legitimacy in a tactical-operational, social and political setting not previously studied by criminology, specifically illegal alcohol trading and violence in a Latin American country. Our study demonstrates that public perceptions of police legitimacy are shaped mainly by the efficient, equitable, egalitarian, respectful, and neutral behaviour of the officers.

Our findings reveal that effectiveness does not have significant effects on legitimacy. Nevertheless, this does not necessarily mean that police performance evaluations are irrelevant. On the contrary, our findings suggest that the belief that the police is more effective in preventing crime contributed to predicting police cooperation. Yet, in our opinion, it did not have an effect on legitimacy because the police can sometimes be effective in controlling crime being morally questionable. Thus, police effectiveness carried out without moral aptitude stops having normative capacity to influence legitimacy judgments. Concurrently, our study found that while the effects of distributive justice on police legitimacy perceptions were significant, procedural justice variables had a more substantial influence, supporting our hypothesis H2. One potential explanation for this result may be that, in a context of deep public concern about public safety and strong criticism of the police—such as is currently the case in Ecuador—the population may expect officers to effectively prevent crime. However, this expectation should not be interpreted as a license for the police to employ procedures that violate civil rights and fundamental social values. It's clear that citizens not only assess the police results, but also substantially evaluate the way in which the officers perform their job. This was observed in the reactions of people towards police officers trained in procedural justice during the OPCLs. Direct communication about the legal and social consequences of irregular liquor sales, conducted in a friendly, trustworthy, neutral, and accessible manner, earned these officers civic recognition of their authority. The effects of these normative judgments on public perceptions recognizing police

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 12 of 19

power as morally right were more influential than their assessment of police performance outcomes.

Our findings are consistent with previous research, which demonstrates that individuals are more inclined to cooperate with the police when they perceive officers as legitimate authorities (Fagan & Piquero, 2007; Sunshine & Tyler, 2003; Tyler, 1990, 2006), thereby lending support to our H3. Furthermore, willingness to cooperate is enhanced when individuals perceive that police officers are effective in combating crime and when interactions with officers align with principles of procedural justice (Murphy, 2009; Sunhine y Tyler, 2003; Sun et al., 2017). These results imply that evaluations of police effectiveness in terms of citizen protection are positively correlated with intentions to cooperate with the police, and are primarily influenced by the recognition of social values such as legitimacy. The positive and direct effect of procedural justice and legitimacy on cooperation perceptions represents a strong message to police agencies that the correct and just treatment, as well as deference to authority, encourages public willingness to help the police in controlling crime. Thus, we agree with what Professor Tankebe, (2013: 127): "[N]ormative considerations are crucial when analyzing cooperation with legal authorities".

Finally, we posited that there is a relationship between the quality of police treatment and decision making and higher levels of certainty of punishment (H4), which in turn, would influence citizens' intentions to cooperate (H5). Our results lend support to H4 and H5. The experimental group's positive results appear to have portrayed the police as more fair, accurate, and "professional", thereby increasing the credibility of deterrent messages regarding the possibilities of punishment. In our view, the concatenation of visiting commercial establishments, personal interaction, and the dissemination of specific obligations and penalties may have engendered the perception that the police were earnest in their efforts. Even though the results generally suggest a direct and significant effect of certainty of punishment on cooperation, this effect is smaller compared to the effects of normative judgments. This makes us believe that it is mainly the moral and social content implicit in police officers' discourse, conveyed with procedural justice during the operations, that incentivized the normative engagement of managers (i.e., Langley, 2014). The certainty of punishment inspires good instrumental reasons for motivating cooperation, but they are not morally sufficient to persuade the willingness to cooperate as the result of the moral duty to do so.

As previously noted in the introduction, the police require public cooperation in order to effectively manage security, and the mere threat of punishment may not be sufficient to achieve this end. The findings of this study indicate that deterrence can be an effective motivator of public cooperation, although not solely through the certainty of punishment. It is important to recognize that deterrence does not always operate through the threat of certain and severe punishment, nor does its application result in benefits for the enforcing authority and losses for the potential offender alone.

Our research contributes to a growing body of evidence on good policing that proposes a theoretical and practical shift in thinking about deterrence by incorporating key elements of procedural justice and fostering police legitimacy (Braga & Kennedy, 2020; Braga et al., 2018; Kennedy, 2016). On the one hand, this change does not underestimate the susceptibility to punishment that people have by replacing the key element of deterrence (the certainty of punishment). On the contrary, it passively complements the certainty of punishment by articulating the key elements of procedural justice in such a way that the perceived risks of punishment are increased without this meaning harm and loss for people (i.e. sanctions, arrests). Similarly, citizens who experience this new policing approach are more likely to perceive the police as a more legitimate institution and, as a result, are more inclined to comply with the law and cooperate with officers (without pressure, threats, or punishment).

Our findings contradict the instrumental approach, which posits that individuals will inevitably obey authority if punishment is perceived as certain. They also do not suggest that individuals are indifferent to police performance outcomes. In contrast, perceptions of effectiveness were found to have positive effects on perceptions of public willingness to cooperate with the police.

The lack of significant improvement in perceptions of effectiveness in the experimental group, in our opinion, may suggest that for sellers of alcohol, expectations of police suitability hold particular importance, particularly in relation to their commercial activity and economic interests which may be threatened by neighbourhood criminals. These expectations may only be met when the police demonstrate competence in addressing local security issues, rather than through perceptions of fair and cordial treatment from the police. Additionally, perceptions that the police work within the law to provide equal and non-discriminatory security services were also found to be relevant in this study.

Our findings indicate that the deterrent effects are more likely to be effective when the prospect of punishment is perceived as legitimate and less oppressive. In our view, it is not the fear of punishment that serves as a deterrent for disobedience, but rather the disconnection with authority and the low levels of perceived justification of their actions and intentions. This suggests that

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 13 of 19

building a sense of trust and legitimacy the actions of law enforcement may be a more effective means of promoting compliance with legal regulations. This was achieved through police officers trained in the procedural justice-based script. The direct and personalized contact with liquor traders relied on the principles of fairness and justice to convey, on the one hand, deterrent messages that raise awareness of the risks of detection and punishment and, on the other hand, non-threatening messages that allow the managers to internalize the social and legal values about alcohol sales.

In light of the results of our study, we recommend the effective implementation of procedural justice within police operations, by institutionalizing its components and integrating them into the doctrine, training and tactical framework of police organizational culture. This organizational change would motivate police officers to apply procedural justice as it can lead to benefits in crime control. Furthermore, we argue that procedural justice can serve as a strong guidance for police officers in fulfilling their duty correctly. Internalizing the instrumental and social significance of procedural justice would encourage its genuine and effective application without the need for excessive supervision, which could be perceived as restrictive or detrimental to police officers' autonomy.

Limitations of the current study

Firstly, it is important to note that our sample is composed of shopkeepers from a small neighbourhood in Quito, Ecuador, thus these results cannot be generalized to the entire country. Secondly, the variable used to measure the certainty of punishment was based on a single question, which suggests that the role of deterrence in the analysis model could be more robustly measured with the use of multiple indicators in future studies. Thirdly, is possible that the police officers in the control group may have perceived the three or four extra daily operations as an additional workload, which may have negatively impacted their commitment and professionalism during the operations and, as a result, also affected the public's perceptions. However, this effect is unlikely for trained police officers, as they were made aware of the importance of these operations and were only required to carry out a maximum of two or three per day.

Fourthly, it is important to note that while our experimental dose implicitly contains elements of procedural justice and focused deterrence, it is uncertain to what extent these factors influenced administrators in the experimental group to have a greater perception of certainty of punishment and higher levels of legitimacy and willingness to cooperate with the police. It is believed that by communicating the risks of punishment based on procedural justice in a face-to-face encounter, trained police officers were able to provide reasonable grounds for administrators to believe that the police were serious, which in turn raised their perception of certainty of punishment. Additionally, by providing explanations for the necessity of obtaining a permit to sell liquor and the associated criminal consequences of public consumption, the police officers were able to not only legitimize their authority, but also elicit a willingness to cooperate from the administrators. It can be argued that the quality of the police officers' actions, decision-making, and risk communication pushed the fear of punishment into the background, thus allowing for the legitimization of their authority and an assessment of willingness to cooperate. Finally, future research should continue to explore these relationships and the effects of focused deterrence based on legitimacy to clearly differentiate the role of these two sources of normative compliance (Braga & Weisburd, 2012). Future studies could also explore the impacts on crime.

Conclusions

Our study highlights the importance of procedural justice in policing and its role in fostering legitimacy and cooperation. Our findings suggest that traditional deterrent strategies, such as over-surveillance and harsh arrest methods, may actually impede the ability of police to effectively fulfil their mission. Instead, we advocate for a shift towards focused, procedurally just tactics that prioritize transparency and fairness in order to foster a moral bond with the public. This study posits that the adaptation of classical deterrence strategies to focused, procedurally just ones can contribute to an effective approach to crime fighting. By fostering a moral bond with the public through transparent intentions and actions, the police may elicit cooperation even in the presence of fear of punishment and an increased likelihood of punishment. This is because the duty to defer to authority becomes superimposed upon the fear of the consequences of not cooperating.

Another important conclusion is that a short training based on procedural justice (16 h) can improve the ability of police officers to act fairly and properly with the public. As Hough, (2021), nowadays it is difficult to imagine a police curriculum that does not incorporate the principles of procedural justice. In an era where trust in the police is increasingly vital, it is crucial that we continue to explore and implement strategies that promote legitimacy and fairness in policing.

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 14 of 19

Appendix
Appendix 1
See Fig. 4

FECHA: Jueves, 22 de julio del 2021

TURNO: primero

RESPONSABLE:

NÚMERO	283		
TIPO DE LOCAL	Tienda		
NOMBRE DEL LOCAL	Víveres Paulita		
DIRECCIÓN	Oe19A		
COORDENADAS	Y	-0,128489	X	-78,516385
DESCRIPCIÓN DEL LOCAL	Dos pisos hacia abajo, obra gris		
REFERENCIAS			

Fig. 4 Information sheet on the premises

Appendix 2
See Fig. 5

Fig. 5 Information Sheet on penalties for the illegal sale of alcohol. Each of these were personalized depending on the type of premise

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 16 of 19

Appendix 3
See Fig. 6

Fig. 6 Fact sheet on social conflict and neighborhood violence associated with public liquor consumption. Each of these were personalized depending on where the premise was located

Appendix 4

Questionnaire

Proucedral justice ($M = 29.28$; $SD = 5.85$; $\alpha = 0.89$). 'Being $1 =$ "strongly disagree" and $5 =$ "strongly agree", in your opinion, the police officer…:

- … when he selected my premises, selected it indiscriminately (randomly) from among the other premises'
- … gave me the opportunity to express my views'
- … listened to me during the operation'
- … was polite and cordial'
- … treated me with respect'
- … clearly explained to me the reasons for the control'
- … explained to me the reasons for the decisions taken during the control operation'

Legality ($M = 6.38$; $SD = 1.72$; $\alpha = 0.75$). 'Being $1 =$ "strongly disagree" and $5 =$ "strongly agree", in your opinion, …:

- … the police always behave in accordance with the law when dealing with people in my neighborhood'
- … if the police were to sanction me, they would do it in accordance with the law'

Distributive justice ($M = 5.9$; $SD = 1.77$; $\alpha = 0.70$). 'Being $1 =$ "strongly disagree" and $5 =$ "strongly agree", in your opinion, the police …:

- … in their procedures, ensure that citizens receive the consequences they deserve in accordance with the law'
- … provide their services to all citizens equally'

Effectiveness ($M = 15.81$; $SD = 7.14$; $\alpha = 0.90$). 'Being $1 =$ "completely ineffective" and $7 =$ "strongly effective", to what extent the police are effective in…:

- … responding when calling the police in order to report a crime'
- … responding when suspicious or dangerous activity is reported'
- … information is provided to assist in finding a suspected criminal'
- … participate with the police in initiatives that improve neighborhood security'
- … recommending that people do not consume liquor in public spaces'
- … responding when alcohol on the streets is reported'
- … responding when street fights are reported'

- … preventing people from setting up inside or on the sidewalk of their premises or house to consume liquor'

Legitimacy ($M = 21.76$; $SD = 4.29$; $\alpha = 0.78$). 'Being $1 =$ "strongly disagree" and $5 =$ "strongly agree", in your opinion, …:

- … in general, I obey the police willingly because I feel it is the right thing to do'
- … there are some occasions when it is best to disobey the police[*]
- … I must obey police decisions, even if I do not agree with them'
- … the police advocate the moral values that are important to me'
- … the moral values of most police officers are similar to mine'
- … generally, good police performance is consistent with what I think is right, and bad performance is consistent with what I think is wrong'

*ACP exclude this item.

Cooperation ($M = 32.77$; $SD = 6.85$; $\alpha = 0.89$). 'Being $1 =$ "unwilling" and $5 =$ "very willing", if the following situation were presented to you, how willing would you be to…?

- … call the police in order to report any crime'
- … report suspicious or dangerous activity to the police'
- … provide information to help find a suspected criminal'
- … participate with the police in initiatives that improve neighborhood security'
- …advise people not to consume liquor in public spaces'
- … report alcohol consumption on the streets to the police'
- …reporting street fights to the police'
- …prevent people from installing themselves on the sidewalk of their premises to consume liquor'

Certainty of punishment ($M = 3,61$; $SD = 1,35$). 'Being $1 =$ "very unlikely" and $5 =$ "very likely", in your opinion, how likely is it that you will be penalized if you fail to comply with these obligations?'.

Anrango Narváez *et al. Crime Science* 2023, **12**(1):9

Page 18 of 19

Declarations

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