Pakistan Economic and Social Review
Volume 62, No. 1 (Summer 2024), pp. 1-31

MAPPING THE LANDSCAPE OF CRIME DYNAMICS IN THE GLOBAL CONTEXT: THE ROLES OF SOCIOECONOMIC, JUSTICE, AND POLITICAL FACTORS

GHULAM SHABBIR, MUHAMMAD AHMED AWAN, SHUJA WAQAR AND BABER AMIN*

Abstract. The transitory nature of trends in crime, politics, and socioeconomic conditions triggers the need to update and recalibrate the existing relationship, otherwise, crime prevention policies based on dated findings would be superseded and not produce the desired results. This study examines the role of the prevailing socioeconomic structure, functioning of the justice system, and political factors in the incidence of criminal activities, using the interdisciplinary conceptual framework The panel data modeling, and the Generalized Method of Moments estimation techniques are used to estimate the impact of policing, prison population, average income, education, urbanization, and rule of law on crime rate in the sample of 95 countries. For more insight, the study also estimates the influence of these factors for four different regions American, European, Asian, and African countries. The empirical findings of the study document a positive association of crime with economic incentives measured by average income and a negative association with education attainment. A similar relationship between these variables is also confirmed at the disaggregate level. The political factor measured by the rule of law has negatively influenced crime in the regional analysis and remains insignificant at the aggregate level. Likewise, the functioning and access of the justice system are considered to be negatively related to crime, as the coefficient of the policing is negative

*The authors are respectively Professor of Economics, M Phil Student, Lecturer in Economics at Department of Economics, Forman Christian College (A Chartered University), Lahore and Lecturer in Economics at School of Economics, International Institute of Islamic Economics, International Islamic University, Islamabad – Pakistan.
Corresponding author's e-mail: ghulamshabbir@fccollege.edu.pk

and significant in most of the cases. To craft a multilateral and effective crime prevention policy development, all three important factors need to be considered equally and not looked at in isolation.

Keywords: Crime, serious assault, theft, education, urbanization, rule of Law

JEL Classification: I2, J24, K42, P46

I. INTRODUCTION

Due to a lack of a concise and universally acceptable definition, the concept of crime has been interpreted through multiple dimensions and has come to signify a host of subversive actions that threaten the sanctimony of the social order. Generically, crime constitutes any socially deviant practice perpetrated with a clear intent to undermine the welfare of an individual, state or society, and is thus deemed reprehensible by law. The ambit of criminal analysis embraces a variant frame of reference the reason, its footprints are etched across miscellaneous academic fields of humanities and sciences; where each discipline markedly tackles some of the most burning queries latched to it. The prolific publication of Becker (1968) marked a watershed moment in social and economic history as in its contents, he craftily perfected the axiom for the study of crime to fraternally synthesize with the discipline of economics. In addition, Ehlrich (1977) solidified the viability of the economic model by ascertaining the behavioral responses of individuals to opportunities in the allocation of time and labor between legitimate and illegitimate activities through empirical testing. The analysis of various studies indicates that deliberation of crime through an economic behavioral perspective has comparatively proven to be much more substantial than other perspectives such as subcultural and demographic perspectives (Freeman, 1999; Neumayer, 2003; Fajnzylber, Lederman and Loayza, 2002; Goulas Zervoyianni, 2013; Tollez and Soler, 2023).

The major factor that aggravates crime within society is income distribution (Kelly, 2000; Noonan, 2024). There exists a sound body of evidence to suggest that nations with more egalitarian patterns of income distribution experience much lower incidences of crime than those

nations where inequality is more apparent (Sachsida et al., 2010). Education not only serves as a panacea to perpetuate constructive social change but also enhances the skills and faculty of the populace to a level that enables them to secure dignified occupations and realize their inner talent in the best possible manner. Gonzalez, (2015) and Barron et al., (2024) claimed that imparting and disseminating education could lead to positive results in terms of crime reduction The conjecture of unemployment serving to exacerbate crime intuitively has some pretty tangible basis as it makes people more prone to engage in criminal activity for purposes to compensate for income foregone due to loss and unavailability of a legitimate occupation. A substantial number of studies available in roughly equal magnitude validate both sides of the argument of whether unemployment incentivizes crime or not (Zaman, 2018; Imran et al., 2018).

As enshrined in the economic theory the purpose of punishment is to exude deterrence which could be harnessed through a tactical mobilization of the tools of law enforcement. Since times immemorial, imprisonment and policing have been the most perennial instruments at the state's behest for ensuring the provision of justice and preservation of law and order in any given politically organized regime. Keeping in toe with Becker's (1968), a reduction in investment in policing agencies will increase the probability of crime incidence (Lee and McCrary, 2017; Petersen et al., 2023) Housing and maintenance of prisons greatly proved as an optimal control tool against criminal activities (Liedka, Piehl and Useem, 2006).

The transitory nature of trends in crime, politics and socioeconomic conditions triggers the need to update and recalibrate the relationship among them to design crime prevention policies to get the desired outcomes. Disposition and conceivable trends toward criminal activities are likely to be discrepant across a group of geographical units with unique structural and institutional endowments. Therefore, the devisable research strategies should be privy to the task of ostracizing the impact of those factors that result in the proliferation of crime to differ across various country-wise jurisdictions. Thus, this study aims to investigate and contribute to the empirical literature on (i) how economic incentives influence criminal activities, (ii) how deterrence and incapacitation

impact crime, (iii) whether any improvement in sociopolitical institutional structure hurts the criminal actions and (iv) how regional differences contribute to above-mentioned factors to influence the crime. In this association, we have specified and estimated the model to reckon the influence of average income and education (economic incentives), policing and prison population (deterrence and incapacitation), and urbanization and rule of law (sociopolitical structure) on criminal activities measured by serious assault and theft.

The estimates of the Generalized Method of Movements (GMM) challenge the orthodox notions of crime control and instead push the policy narrative deeper into the center of a wider domain of socioeconomic and political considerations. For example, deterrence and incapacitation measured by the prison population promote criminal activities like theft and serious assault. On the other hand, an increase in the degree of policing significantly lowers the criminal rate measured by serious assault and these findings fairly correspond to previous research work, for instance, Haddad and Moghadam, (2011) for Iran, Han, Bandyopadhyay and Bhattacharya, (2013) for the United Kingdom and Wales, and Petersen et al., (2023) for the USA reported similar relationship between prison population and crime.

The economic incentives predict that a higher educational achievement lowers the degree of criminal activities whereas an increase in average income promotes these activities. This implies that a longer length of exposure to education for a person over the course of a lifetime has definite and fortified impacts on human behavior. It is also evident from the literature that the provision of educational facilities to prison inmates radically lowers the trend of recidivism (Steurer and Smith, 2003). The intriguing finding of the study is the positive association of average income with crime, which foretells that criminal activities pay more handsomely than legal occupations, so people are more inclined to allocate more time and effort towards these activities. In addition, a rise in average income can, under certain circumstances, be associated with a rise in theft and serious assault due to factors such as income inequality, urbanization, changes in the social fabric, materialism, inadequate social services, and cultural shifts. Social tensions, frustration, and disruptions in traditional community structures may contribute to criminal behavior. As empirical literature has unfolded some instances of assaults are

motivated purely on economic grounds (Cameron, 2014; Sugiharti et al., 2023). The rule of law and urbanization have no significant impact on both measures of crime (theft, and serious assault). The investment in policing has zero impact on theft but lowered the serious assault activities.

For more insight, we divided the sample nations into four regions, American, European, Asian, and African countries. The impact of policing on theft is negative in American and Asian countries whereas a similar relationship holds between policing and serious assault in European and African countries. This implies that an adverse relationship between policing and crime exists, but the nature of crime may differ. The relationship between the prison population and average income with criminal activities is the same as it is at the aggregate level. Education has a negative relation with these criminal activities in almost all groups but is insignificant in the case of African countries. The interesting finding of this division of countries is that the coefficient of rule and law variable has a significant and negative relation with both types of criminal activities in all four groups except for serious assault in American nations. In addition, urbanization has positively contributed to theft and assault in American and European countries except it is insignificant for serious assault in the European group. For Asian and African regions, this relationship is negative but is significant only for Asian countries. These results predict that urbanization resulting from modernization has significantly disintegrated the social fabric and incubated the conditions that prove favorable for the promotion of crime. Thus, it can be concluded that policing, education, and the rule of law have played a significant role in lowering the crime rate almost in the entire disaggregated countries whereas, at an aggregate level, education holds similar findings, but only policing is significant for serious assault. The coefficients of the prison population and average income predict a similar relation with crime in both combined and divided sample cases.

As is evident from the results, the reformative impacts of education on human behavior foster and nurture over time. Exposure to education should be effervescent and widespread, capable of engaging students over a longer timespan to keep the rate of dropouts at primary and secondary levels at a minimum. This could be achieved by both ensuring

higher dividends to educational attainment by the formation of high-skill and specialized occupations and through the encouragement of a lifelong learning process in which apart from the material incentives the experience of education is inquisitively appealing and nourishing. We perceive a massive potential for education on crime reduction and there can be certain areas that should be a recipient of more attention from policy pundits. In this context, we have found a lack of comprehensive literature that compiles all potential contributors into a single model. This study, however, incorporates several key indicators and factors related to socioeconomic conditions, justice, and politics within the broader framework of crime analysis.

The rest of the study is structured as follows: section II provides details about the theoretical and empirical literature review, section III contains theoretical background, model specification, and data information, section IV includes the discussion on empirical results, and conclusions and policy implications are part of the last section V.

II. THEORETICAL AND EMPIRICAL REVIEW

Throughout recorded human history, there exists rarely a point in time when civilizations haven't been embroiled in the struggle to pacify the threat of imminent discord and conflict. The proximity to tackle such very predicament is what necessitated the formulation of legal codes in which enlisted procedures of trial and punishment for actions were considered detrimental to the preservation of social order such as the Tang Code in Ancient China (624ce), the Justinian Code in Ancient Rome (429-534ce), and the Hammurabi Code of Ancient Babylon (1790ce). The thematic foundations of the synergy between crime and economic incentives can be unearthed as far back as the writings of ancient Greek philosophers Plato (427-347ce.) and Aristotle (384 - 322ce.); since then, the motif has been around and can be discerned in remote corners of the academia albeit rudimentarily. With Becker's publication, 'Crime and Punishments' a massive interest was created in academicians and researchers (Becker, 1968). Ehlrich (1975) empirically documented the negative influence of law enforcement measures and the provision of economic incentives on crime. The economic perspective of crime is much more multilayered because it highlights some of the most rampant and pervasive aspects that infuse crime in a society like income

equality, poverty, and social exclusion (Freeman, 1999). Thus, empirical analysis to unpack the dichotomist relationship between crime and the economic outcome is essential, as most countries enjoying an increase in per capita income might observe an increase in property crime and a reduction in other crimes like homicide and manslaughter (Krohn and Wellford, 1977; Neumayer, 2006; Fajnzylber, Lederman and Loayza, 2002; Goulas and Zervoyianni, 2013).

Education not only serves as a panacea to perpetuate constructive social change but also enhances the skills and faculty of the populace to a level that enables them to secure dignified occupations and realize their inner talent in the best possible manner. A few studies documented that imparting and disseminating education could lead to positive results in terms of crime reduction (Heinemann and Verner, 2006; Gonzalez, 2015). Social disorganization theory confesses that social segregation in the urban environment creates fragile environments, which directly impacts crime rates (Cahil, 2004; Bjerk, 2009). A positive correlation between the rural environment and criminal behavior is also predicted by Albu, et al. (2013).

As enshrined in the economic theory the purpose of punishment is to exude deterrence which could be harnessed through a tactical mobilization of the tools of law enforcement agencies such as imprisonment, policing, and preservation of law and order. Keeping in toe with Becker's (1962), some empirical studies reported that either a deduction in expenditures devoted to the police or a reduction in police manpower will promote crime (Levitt, 1997; Imrohoroglu, Merlo and Rupert, 2000). The discourse on incarceration is less concerned with the absolute quantification of the responsiveness of crime to imprisonment and is more disposed to determine the optimal elasticity of crime to the size of the prison population. As a rule of thumb, large-scale studies using national data overestimate while small-scale studies using state-level data underestimate the impact on the prison population (Kovandzic and Vieraitis, 2006). More nuanced and refined inspections by Spelman (2008) and Lee and McCrary (2017) estimated the elasticity of crime to incarceration to be somewhere between -0.2 and -0.4 percent.

The political perspective perhaps occupies the most impoverished and underrated position on the spectrum of criminology. Criticisms

levelled in the past against a bespoke political theory of crime range from and are not confined to theoretical abstractionism and empirical inapplicability, the reasons the political narrative of crime retarded and failed to capture the imagination of the mainstream intelligentsia. As to the quandary of why the political narrative of crime sits on the backbenches today is commonly attributed to its almost deterministic posture to fit too neatly into the scheme of things to leave no room for any genuine inquisitiveness (Carlen, 2007). Concerns have been raised over traditionalist criminology's indifference to crime drop as to whether it signifies an actual decline in a crime or camouflages it with changes in social control (Mooney and Young, 2006). Lynch (2013) counters the criticism of the empirical shortcomings of the political perspective and argues that in an empirical analysis, it could perform much better than the traditionally specified models which tend to omit crucial pieces of information.

The above discussion not only provides details about the origin of the economic theory of crime but also explains the conceptual and empirical development of the theory. In addition, it illuminates criminal sociology through a brief and concerted review of the anomie theory of deviance, the social disorganization theory, the social control theory, the strain theory, the modernization theory, and the opportunity theory. From the existing literature on political legitimacy, political economy, and contractarian philosophy, we develop a corollary for the study to analyze the rule of law as a distinct political determinant of crime along with other socioeconomic factors such as policing, prison population, average income, education, and urbanization.

III. RESEARCH METHODOLOGY AND DATA

THEORETICAL FRAMEWORK

Determination of the correlates of crime can prove to be a cumbersome exercise as the phenomenon is inextricably woven and texturized with a multitude of diverse factors, which often intersect and interject with one another over the course of a continuum. The interlocking interface of criminological studies, although inquisitively genial begets with itself a lingering element of obscurity, which impedes the articulation of a cohesive framework. Following Becker (1968), Ehlrich (1973) sorted the

decision-making thought process of individuals for crime to a quintessential labor market overlay where crime reminisces any 'occupation' whose profitability is gauged based on the anticipated earnings it would procure minus the anticipated risks. The inference of crime based on occupation selection has gained immense traction among economists who have since adhered to and conjured in the process a host of subtle variants of the original template. An elemental delineation of the economic framework of crime posits rational individuals allocate time between legitimate and illegitimate activities through a utility-maximizing calculus that can be expressed through the following inequality:

$$(1-\pi)U(W_c) - \pi S > U(W_L) \qquad (1)$$

Under the cardinal principle, a rational individual tends to maximize his or her utility (U) by devoting time to the activity, which secures the maximum possible pecuniary gains. But, unlike a legitimate (W_L) activity engaging in an illegitimate (W_c) the activity involves risks of being apprehended (π) and sanctioned (S) by law enforcement which could later possibly expedite into punishment. From this behavioral pattern, we could dissect that individuals can focus on the fostering of viable opportunities such as job creation and commercial ventures from which people could earn a decent living and greatly dispel the allure of crime. Contrary, higher incomes could also induce criminal activity in the short run as it embellishes the value of the loot which makes crime profitable. Higher education attainment for adults could be more sustainable in this respect as it complements expectations to attain lucrative earnings in the long run and enables them to secure a more entitled and privileged position in the societal landscape (Buonanno and Montolio, 2008).

The purpose of the criminal justice system is to prevent the incidence of crime through law enforcement and the imposition of punishment and sanction (Draca and Machin, 2015). Thus, the presence of a sizeable, well-equipped, and vigilant police force makes detection more probable and significantly narrows the window for the perpetrator to evade capture. Urbanization is a structural determinant that encapsulates the friction between traditional and modernistic social structures, a condition

presumed to reverberate an increase in criminal activity (Krohn, 1976). Urbanization best exemplifies the opportunistic landscape which clusters factors to provide a fertile turf for crime and criminals to nest and nurture. Hence, sporadic rural-urban migration could create a dire situation in which finite resources start to dwindle and the racial and ethnic homogeneity is disturbed as the cities continue to swell with more people. Tussles over the attainment of resources and cultural tensions sow seeds of discontent and culminate into outbreaks of pogrom, violence, and crime (Sampson and Grooves, 1989).

For the rule of law to prevail in any nation, there should be a relationship of trust between the state and its citizens. Trust can be garnered by the state from its people by formulating policies that are egalitarian and people-centric and erecting a criminal procedure system that is transparent and gives requisite attention to due process so that any miscarriage of justice can be avoided. Crime would be less in countries where people conform to the legislation promulgated by the state as it means by and large the institution of the state is considered legitimate and its policies are viewed as bona fide to their interests.

THE MODEL

The model of the study is a conceptual synthesis that integrates the underpinnings of both the individualistic economic rational choice theory of crime and the holism of sociological and political theories of crime. As the microeconomic theory of crime assumes a consistent and universal rationalized behavior for all individuals, the static model could be expressed as an aggregate supply function of criminal offenses for a given country,

$$Crime = F(EC, OC, SI) \qquad (2)$$

Where (EC) is the vector of the expected costs of crime via justice-deterrence and incapacitation which contains variables of policing and imprisonment, (OC) is the vector of the opportunity costs of crime via economic incentives which contains variables of average income, and education attainment, (SI) is a vector which contains the structural and institutional variables of crime namely urbanization and the institutional quality in the form of the rule of law. The combination of education,

average income, and urbanization present the socioeconomic conditions and political structure of a country that can be gauged via the rule of law.

Panel data modeling methodology has almost become a norm in the research strategies of criminal inference. A two-dimensional cross-sectional array (i and t) of the panel matrix mean value of a given variable for a corresponding spatial unit (country, i = 1, 2…..N) is further assigned a temporal dimension (year, t = 1, 2…..T). Thus, the panel data estimation equation of the model shown in equation (2) for testing the hypothesis of crime being impacted by socioeconomic conditions, justice, and political factors is represented by the following equation (3).

$$Crime_{i,t} = \alpha_0 + \alpha_1 POL_{i,t} + \alpha_2 PRS_{i,t} + \alpha_3 AVGINC_{i,t} + \alpha_4 EDU_{i,t} + \alpha_5 URB_{i,t} + \alpha_6 ROL_{i,t} + \mu_{i,t} \quad (3)$$

Where crime shows the counts of crimes as theft and serious assault, POL is policing used to show the probability of apprehension, PRS is the prison population to highlight the severity of a criminal sanction to capture functioning and access to justice, whereas AVGINC, EDU, URB represents the average income, education attainment, and degree of urbanization to capture the socioeconomic effect. Lastly, ROL is the rule of law as the political empirics of crime. Based on criminology literature, it is predicted that crime responds negatively to intensive policing as it would minimize the success ratio of any criminal venture $(\alpha_1 < 0)$. Certainty of being subjected to severe criminal sanction would lower crime as potential offenders would be more concerned about their welfare and prefer not to expose themselves to high levels of risk $(\alpha_2 < 0)$. The responsiveness of crime to changes in average income is ambiguous as the theory suggests an increase in average income would guarantee a higher pecuniary benefit from both a legitimate occupation and an illicit activity and conversely lead to a decline in pecuniary benefits for both if the average income decreases. If $(\alpha_3 > 0)$ it would signify that crime pays more handsomely than legal occupations, so people are more inclined to allocate more time and effort towards criminal activities, and in an inverse scenario where $(\alpha_3 < 0)$, people are satisfied with the material benefits they attain from legal occupations and are less inclined towards devoting time and effort towards criminal activities. Crime responds negatively to educational attainment as it promises both

economic security and a robust social agency $(\alpha_4 < 0)$. Urbanization can increase crime through several factors: social fragmentation, scarcity of resources, underground economies, and strain on law enforcement to name just a few $(\alpha_5 > 0)$. The legitimacy of state institutions and government policies which strengthen the social contract between the state and its people would relate crime inversely with the rule of law $(\alpha_6 < 0)$.

ESTIMATION TECHNIQUE

By virtue of their design, the panel data analysis on crime is anticipated to be unencumbered with certain statistical complications which if left unattended would greatly undermine the consistency of the estimation procedure. Because measurement errors, omitted variables, and reverse causality are some of the key impediments which could contaminate the data with endogeneity bias. Even after controlling country-wise heterogeneity, there is little optimism regarding the purge of endogeneity and the condition of strict exogeneity to conform. Discernible reverse causality between crime and variables of law enforcement will probably correlate the regressors with the error terms which in turn generates biased estimates. Measurement errors in the data are random and, still, be exploited based on their variation between entities but if the measurement errors are systematically caused by underreporting of offenses contingent on the specific time-invariant non-observable attributes of each country, then it is a cause of concern as it could likely induce estimation bias. Moreover, after estimating the fixed and random effects, and inclination towards fixed effects as directed by the Hausman test still there was autocorrelation.

Thus, the study has used the Generalized Method of Moments (GMM) estimation technique, as it could provide an antidote to help steer clear of the endogeneity bias by using the lagged values of internal variables as instruments. GMM estimation could be beneficial in several ways as it controls for time-invariant characteristics, does away with the need for external instruments whose determination is inherently problematic, is demonstrated to return consistent estimators from data inflicted with measurement errors without any replication (Griliches and Hausman, 1986), and does not require complete comprehension of the

data distribution. Besides, the GMM estimator can procure a unique solution to the parameter vector even if the equations are over-identified by deriving those parametric estimates, which minimize the specified criterion function. To affirm the validity of the instruments subsumed in the GMM model one could rely on the widely popular Hansen J statistic test (or the Sargan test of over-identifying restrictions).

VARIABLE DESCRIPTION AND DATA SOURCES

On the basis of moderation of any systematic error through reporting bias in the estimation of crime data in a cross-national comparison, two particulate orders of crime namely serious assault and crime have been considered in the analysis. Serious assault is the category of crimes committed against a person accented by an unbridled violent impulse while theft is categorized as a sort of property crime impelled by a desire to procure a financial gain. The data for both types of crime is obtained from the database of the United Nations Office of Drugs and Crime (UNODC) and is expressed as counts of crime conducted.

Two perennial instruments of the criminal justice system are policing and imprisonment. The number of police personnel deputed signifies the probability of apprehension. The number of people held in prisons denotes the severity of punishment. Data on these variables is also obtained from the UNODC database. Average income indicates economic affluence and is measured by the natural logarithm of Gross National Income (GNI) per capita denominated in constant US dollars (2010). Mean years of adult schooling is an indicator of higher education attainment and is defined as the average number of years of education received by people aged 25 and older. The degree of urbanization is measured by the proportion of the total population residing in urban areas and cities. The Rule of Law Index will serve as a proxy for assessing the institutional quality of the political association between the state and its citizens. The Rule of Law Index is one of the six key aggregate indicators of World Governance Indicators (WGI) constructed based on expert survey reports to estimate the quality of governance in both developed and developing countries. The spectrum of the index ranges from 2.5 to -2.5, 2.5 signifies a strong satisfaction with the level of governance while -2.5 denotes a fragile and weak level of governance. More detail on

variables, variables' indicators, and relevant data sources is in Appendix Table A1.

IV. RESULTS

GLOBAL ESTIMATES OF THE MODEL

A strongly balanced panel set is conglomerated for 95 countries[1] with a continuous timeframe of seventeen years from 2003 to 2020. These countries have been selected based on the data available for crime. Table 1 records key empirical findings to determine the validity of the argument that criminal activity to be influenced by socioeconomic, judicial, and political factors to a substantial extent. The fixed effect and random effect models have been estimated to neutralize the impact of the unobserved heterogeneity whose existence is apparent by almost default in studies organized on similar perimeters and is further reinforced through diagnostic testing. Out of the two clearly, the fixed effect is a better alternative as endorsed by the statistically significant p-value of the Hausman statistic. However, the LM test shows that GMM should be employed to weed out the possibility of endogeneity bias. So, the interpretation and discussion of the findings that follow would be in consideration of the results obtained through GMM panel estimation.

Starting from the measures of law enforcement, the coefficient for policing is statistically insignificant and its magnitude is also minuscule for theft but significant in cases of serious assault that indicates an increase in police personnel lowers the cases of serious assault. On the other hand, the coefficient for the prison population is statistically significant in both cases of theft and serious assault. As per study estimates, the expected sign of policing is valid, policing negatively affects theft and serious assault although it is insignificant in theft cases. The prison population in both cases holds a positive sign which indicates that an increase in prison population can contribute to a rise in serious assault and theft through various interconnected factors. For example, the prison environment can facilitate criminal networking, promoting the exchange of criminal knowledge. Inadequate rehabilitation programs and social stigma against ex-convicts may result in a lack of reintegration

[1] For region and list of countries see appendix Table A2.

support, pushing individuals back into criminal activities. Additionally, the strain on law enforcement resources can divert attention from crime prevention efforts, allowing criminal behavior to persist. The results for policing fairly correspond to previous research work, for instance, Coarse, (1999) and, Fajnzylber, Lederman and Loayza, (2002) documented similar findings. Besides, Haddad and Moghadam, (2011) for Iran and Han, Bandyopadhyay and Bhattacharya, (2013) for the United Kingdom and Wales have found a similar relationship between prison population and crime.

TABLE 1

Socioeconomic, Justice, and Political Determinants of Crime in Global Context

Variables	Theft		Serious Assault	
	Fixed Effects	GMM	Fixed Effects	GMM
Policing	-0.098 (0.083)	-1.002 (0.931)	-0.089 (0.196)	-3.138** (1.643)
Prison Population	0.639*** (0.645)	1.119** (0.447)	1.086*** (0.127)	2.054** (0.842)
Average Income	-0.027 (0.134)	1.454*** (0.409)	-0.087 (0.277)	1.964** (0.807)
Education	-0.104*** (0.028)	-0.355*** (0.083)	-0.222*** (0.056)	-0.857*** (0.172)
Rule of Law	-0.021 (0.091)	-0.191 (0.475)	-0.501** (0.178)	-1.300 (0.902)
Urbanization	-0.001 (0.091)	0.002 (0.036)	-0.126*** (0.016)	0.094 (0.075)
Observations	948	948	923	702
AR(1)		0.890		0.117
AR(2)		0.381		0.056
Hansen Test		0.324		0.276

Note: Asterisks show level of significance, ***1%, **5%, *10%. In parenthesis, standard errors for each coefficient are reported.

As far as the coefficients of the economic incentives (average income and educational attainment) are concerned, education attainment holds a negative sign which is statistically significant for both theft and serious assaults. In contrast, the average income is statistically significant in both models, however, it holds a positive relationship in both models. An increase in average income can, under certain circumstances, be associated with a rise in theft and serious assault due to factors such as income inequality, changes in the social fabric, materialism, inadequate social services, and cultural shifts. The empirics of previous literature

show that some instances of assaults are motivated purely by economic grounds (Cameron, 2014). The benefits conferred through higher average income in the form of elevated living standards and invigorated consumption can be one of the reasons to incubate criminal activities. Some countries that are heavily reliant on tourism for economic growth fittingly depict this dilemma of the flip side of development where the influx of tourists from elsewhere jacks up the reported number of criminal offenses especially those underscored with an economic motive (Lisowska, 2017). Mean years of adult schooling proximate education attainment which according to Heinemann and Verner (2006) indicates a longer length of exposure to education for a person over the course of a lifetime and also further implies that the behavioral impacts as a result of education are more pronounced and fortified. It has also been demonstrated that providing education to prison inmates drastically reduces the trend of recidivism (Steurer and Smith, 2003).

The impact of both urbanization and the rule of law on both criminal activities is insignificant. There is a mixed bag of evidence in the literature on urbanization's contribution to the increase in crime. Urbanization was incorporated to gauge the fidelity of a central argument in the sociology of deviance which postulates modernization to be culpable in the disintegration of the social fabric and thus incubate conditions that prove favorable for the growth of crime and deviance as by the sign of its coefficient although it is insignificant. Coarse (1999) Fajnzylber, Lederman & Loayza (2002), and Neumayer (2006) have also found crime to be insignificant to rates of urbanization on a cross-national level. The rule of law is negatively related to crime, although, in the global context, this effect is statistically insignificant. Our results are in line with Powell, Manish and Nair (2010) reckon the rule of law to be a potent explanatory indicator for property crimes.

REGION WISE ESTIMATES OF THE MODEL

Table 2 shows the region-wise results of the socioeconomic, justice, and political factors of crime. In the case of the functioning of justice, captured by the number of police and prison population, policing holds negative signs for all the countries in the selected regions except for theft in African countries. For theft, the magnitude of the effect of policing varies from 3.3% in Asian countries to a minimum of 0.09% in African

countries. As for serious assault, the magnitude varies from 2.4% in African Countries to 0.65% in Asian countries. Nonetheless, this indicates a negative causation of policing on theft and serious assault in all the countries. As far as theft is concerned, policing is statistically significant for American and Asian countries and the magnitude is also noteworthy. However, for European and African countries the coefficients are not statistically significant. As for the serious assault, the results are statistically significant in the case of European and African countries only. Therefore, policing is effective in reducing only theft in American countries and Asian countries, however, in European and African countries policing can be effective in reducing serious assaults. The prison population in African countries shows a negative relationship, however, in the case of American, European, and Asian countries it excels in crime of theft and serious assault. In most cases, it is significant and varies around 1% except for African countries.

The socioeconomic indicators including mean years of schooling have been effective in reducing theft and serious assaults in almost all the selected regions. It is pertinent to note that education's impact is statistically significant. The coefficients vary between 0.92% and 0.07% for theft in Asian and American countries, respectively. The coefficients for serious assault on the other hand vary between 1% (for both European and Asian countries) and 0.2% (for American countries). Average income holds a positive sign and is for all the countries significant which indicates that an increase in income also increases the likelihood of theft and serious assaults. The reason for this positive relationship has been discussed before. Urbanization on the other hand has shown mixed results. In the case of American countries, the impact has been positive and statistically significant for both theft and serious assaults indicating that urbanization leads to crimes. For the rest of the three regions, it holds a negative sign indicating that for crime in the form of theft and serious assault, urbanization is not a necessary determinant. These crimes can take place in countries where there is less urbanization. The rule of law which captures the effectiveness of the political system holds negative signs for both theft and serious assault. The coefficients are also statistically significant for all countries except one, serious assault in American countries. Therefore, a structured political system has the potential and the likelihood to reduce theft and serious assaults.

The regression results reveal notable regional variations in the impact of education, policing, prison population, average income, rule of law, and urbanization on theft and serious assault across American, European, Asian, and African countries. Education significantly reduces theft in Asian countries (-0.929), moderately in European countries (-0.313), and has negligible effects in American and African countries. These results can be attributed to several socioeconomic and cultural factors. Policing is most effective in reducing theft in Asia (-3.361) and American countries (-2.711), and it significantly reduces serious assaults in African countries (-2.411). The prison population positively affects theft in European (1.684) and Asian countries (1.656), while it has a negative impact on serious assault in African countries (-6.168). Average income shows a consistent positive impact on both theft and serious assault across all regions, with the strongest effects in Asian countries (3.901 for theft, 3.778 for serious assault). The rule of law consistently reduces theft and serious assault across all regions, with the most substantial effects in African countries (-3.027 for theft, -3.061 for serious assault). Urbanization increases theft in American (0.105) and European countries (0.067), but reduces it in Asian countries (-0.665), indicating significant regional differences in how urbanization influences crime rates. These results highlight the varying effectiveness of different factors in combating crime across different regions.

TABLE 2

Region-wise Socioeconomic, Justice and Political Determinants of Crime

Variables	American Countries		European Countries		Asian Countries		African Countries	
	Theft	Serious Assault	Theft	Serious Assault	Theft	Serious Assault	Theft	Serious Assault
Policing	-2.711*** (0.286)	-0.466 (0.805)	-2.063 (0.897)	-1.721* (1.024)	-3.361*** (0.497)	-0.655 (0.629)	0.097 (0.961)	-2.411*** (0.583)
Prison Population	0.501* (0.300)	0.072 (0.240)	1.684*** (0.519)	1.01** (0.465)	1.656*** (0.387)	-0.631 (0.526)	-1.351 (1.357)	-6.168** (2.361)
Average Income	1.856*** (0.194)	0.994** (0.368)	1.455** (0.649)	2.600** (1.083)	3.901*** (0.357)	3.778*** (0.520)	2.935* (1.523)	7.177** (2.287)
Education	-0.076 (0.166)	-0.208** (0.096)	-0.319** (0.129)	-1.017*** (0.286)	-0.929*** (0.134)	-1.073*** (0.073)	-0.707 (0.437)	-0.475 (0.661)
Rule of Law	-0.924* (0.500)	-0.113 (0.718)	-0.945* (0.545)	-1.497** (0.658)	-0.077** (0.033)	-1.621*** (0.371)	-3.027* (1.601)	-3.061*** (0.755)
Urbanization	0.105*** (0.030)	0.067** (0.032)	0.067* (0.041)	-0.003 (0.064)	-0.665* (0.375)	-0.105*** (0.026)	-0.085 (0.0784)	-0.031 (0.043)
Observations	182	181	574	565	145	133	47	48
AR(1)	0.240	0.680	0.473	0.134	0.221	0.482	0.278	0.265
AR(2)	0.597	0.383	0.491	0.232	0.315	0.395	0.556	0.682
Hansen Test	0.183	0.620	0.648	0.534	0.599	0.442	1.000	0.999

Note: Asterisks show level of significance, ***1%, **5%, *10%. In parenthesis, standard errors for each coefficient are reported.

V. CONCLUSION

The core drive of this study was to test and confirm the validity of three distinct hypotheses. It can be stated with some assurance that if the motivation behind a criminal offense is purely to obtain an economic benefit, then crime largely qualifies as an economic activity. The direct channel which predicates the role of economic incentives has proved to be much more substantial than the indirect channel which relates largely to punishment and law enforcement. For both contrast and insight, we included socioeconomic and institutional determinants in the analysis to make it more informative. The hypothesis that changes in social structure from traditional to modernistic contribute to crime is largely unsubstantiated. On the other hand, our analysis completely endorses the supposed correlation between criminal incidence and the rule of law which could subsequently have immense policy ramifications. By exploiting variations in determinants of crime across a wide array of countries we also conclude that nations that have a satisfactory level of political governance and better opportunities for educational attainment will incidentally experience lower levels of criminal activity. Our findings challenge the orthodox notions of crime control and instead, push the policy narrative deeper into the center of a wider domain of socioeconomic and political considerations.

As is evident from our results, the reformative impacts of education on human behavior foster and nurture over the course of time. Exposure to education should be effervescent and widespread, capable of engaging students over a longer timespan to keep the rate of dropouts at primary and secondary levels at a minimum. We perceive a massive potential for education on crime reduction and there can be certain areas that should be a recipient of more attention from policy pundits. To craft a multilateral and effective crime prevention policy development, education, and politics all need to be in tandem and not looked at in isolation.

POLICY RECOMMENDATION

In America, policing has shown significant effectiveness in reducing theft, as evidenced by programs like New York's "Operation Impact," which targets high-crime areas with increased police presence and

community engagement. However, to address the statistically significant increase in serious assaults, there needs to be a focus on enhancing socioeconomic conditions, such as improving educational opportunities and addressing income inequality. Similarly, in Asia, where policing reduces theft significantly, policies should also promote education and equitable economic growth to further mitigate crime.

In Europe, where policing is more effective in reducing serious assaults, policies should continue to strengthen community policing initiatives and judicial reforms that emphasize rehabilitation, similar to Norway's approach. The significant role of education in reducing both theft and serious assaults indicates that policies should prioritize accessible and high-quality education as a long-term crime prevention strategy.

In Africa, the relationship between the prison population and crime reduction highlights the need for judicial reforms and improvements in prison conditions to ensure they contribute effectively to crime reduction. Policies should also focus on enhancing the rule of law and political stability, as these factors significantly reduce crime. Additionally, addressing urbanization's negative impact on crime, particularly in American countries, requires comprehensive urban planning that includes crime prevention measures, such as improved infrastructure, social services, and community programs.

Overall, these recommendations underscore the importance of a multifaceted approach to crime reduction that includes effective policing, robust prison systems, accessible education, economic equality, thoughtful urban planning, and strong political institutions. By tailoring policies to the specific needs and contexts of each region, governments can develop more effective strategies to reduce crime and enhance public safety.

REFERENCES

A. Heinemann & D.Verner (2006). Crime and Violence in Development: A Literature Review of Latin America and the Caribbean. (World Bank Policy Research Working Paper No. 4041). Available at SSRN: https://ssrn.com/abstract=938907

Baron, E. J., Hyman, J., & Vasquez, B. (2024). Public school funding, school quality, and adult crime. Review of Economics and Statistics, 1-46.

Becker, G. S. (1968). Crime and Punishment: An Economic Approach. Journal of Political Economy, 76(2), 169–217. http://www.jstor.org/stable/1830482

Becker, G.S., Ewald, F., & Harcourt, B.E. (2013). Becker and Foucault on Crime and Punishment. University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 654; University of Chicago, Public Law Working Paper No. 440; Columbia Law and Economics Working Paper No. 456. Available at SSRN: https://ssrn.com/abstract=2321912

Bourguignon, F. (1999). Crime as a social cost of poverty and inequality: a review focusing on developing countries. Revista Desarrollo y sociedad, (44), 61-99.

Brzezinski, M. (2013). Top income shares and crime. Applied Economics Letters, 20(4), 309-315. http://dx.doi.org/10.1080/13504851.2012.697117

Buonanno, P., & Montolio, D. (2008). Identifying the socio-economic and demographic determinants of crime across Spanish provinces. International Review of Law and Economics, 28(2), 89-97. https://doi.org/10.1016/j.irle.2008.02.005

Cameron, S. (2014). Killing for money and the economic theory of crime. Review of Social Economy, 72(1), 28-41. https://dx.doi.org/10.1080/00346764.2013.845336

Carlen, P. (2007). Editorial: politics, economy and crime. Criminal Justice Matters, 7(1), 3-4. https://dx.doi.org/10.1080/09627250708553675

Chalfin, A., & McCrary, J. (2017). Criminal deterrence: A review of the literature. Journal of Economic Literature, 55(1), 5-48. https://dx.doi.org/10.1257/jel.20141147

Chiricos, T. G. (1987). Rates of crime and unemployment: An analysis of aggregate research evidence. Social problems, 34(2), 187-212. https://dx.doi.org/10.2307/800715

Clinard, M. B. (1960). A cross-cultural replication of the relation of urbanism to criminal behavior. American Sociological Review, 25(2), 253-257. https://dx.doi.org/10.2307/2092631

Cook, P., Machin, S., Marie, O., & Mastrobuoni, G. (Eds.). (2013). Lessons from the Economics of Crime: What Reduces Offending? Cambridge: MA, MIT Press. Available at http://www.jstor.org/stable/j.ctt9qf8f7

DiIulio, J. J. (1996). Help wanted: Economists, crime and public policy. Journal of Economic Perspectives, 10(1), 3-24. https://dx.doi.org/10.1257/jep.10.1.3

Draca, M., & Machin, S. (2015). Crime and economic incentives. Economics, 7(1), 389-408. https://doi.org/10.1146/annurev-economics-080614-115808

Ehrlich, I. (1973). Participation in illegitimate activities: A theoretical and empirical investigation. Journal of Political Economy, 81(3), 521-565. https://dx.doi.org/10.1086/260058

Ehrlich, I., & Gibbons, J. C. (1977). On the Measurement of the Deterrent Effect of Capital Punishment and the Theory of Deterrence. The Journal of Legal Studies, 6(1), 35–50. http://www.jstor.org/stable/724188

Elgin, C., & Oyvat, C. (2013). Lurking in the cities: Urbanization and the informal economy. Structural Change and Economic Dynamics, 27, 36-47. https://dx.doi.org/10.1016/j.strueco.2013.06.003

Fajnzylber, P., Lederman, D., & Loayza, N. (2002). What causes violent crime? European economic review, 46(7), 1323-1357. https://dx.doi.org/10.1016/S0014-2921(01)00096-4

Feldman, Y. (2011). The complexity of disentangling intrinsic and extrinsic compliance motivations: Theoretical and empirical insights from the behavioral analysis of law. Wash. UJL & Poly, 35, 11.

Freeman, R. B. (1999). The economics of crime. In O. Ashenfelter & D.Card (Eds.), Handbook of labor economics, (pp.3529-5671).Amsterdam, NL: Elsevier. https://dx.doi.org/10.1016/S1573-4463(99)30043-2

Glaeser, E. L., & Sacerdote, B. (1999). Why is there more crime in cities? Journal of Political Economy, 107(S6), S225-S258. https://dx.doi.org/10.1086/250109

Gonzalez, A. (2015). Education: the secret to crime reduction. (Unpublished thesis draft), New York University, NY, United States.

Goulas, E., & Zervoyianni, A. (2013). Economic growth and crime: does uncertainty matter? Applied Economics Letters, 20(5), 420-427. https://dx.doi.org/10.1080/13504851.2012.709596

Haddad, G. K., & Moghadam, H. M. (2011). The socioeconomic and demographic determinants of crime in Iran (a regional panel study). European Journal of Law and Economics, 32(1), 99-114. https://dx.doi.org/10.1007/s10657-010-9152-4

Han, L., Bandyopadhyay, S., & Bhattacharya, S. (2013). Determinants of violent and property crimes in England and Wales: A panel data analysis. Applied Economics, 45(34), 4820-4830. https://dx.doi.org/10.1080/00036846.2013.806782

Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. Econometrica: Journal of the Econometric Society, 1029-1054. https://dx.doi.org /10.2307/1912775

Imran, M., Hosen, M., & Chowdhury, M. A. F. (2018). Does poverty lead to crime? Evidence from the United States of America. International Journal of Social Economics, 45(10), 1424-1438.

Kelly, M. (2000). Inequality and crime. Review of Economics and Statistics, 82(4), 530-539. https://dx.doi.org/10.1162/003465300559028

Kovandzic, T. V., & Vieraitis, L. M. (2006). The effect of county-level prison population growth on crime rates. Criminology & Public Policy, 5(2), 213-244. https://dx.doi.org/10.1111/j.1745-9133.2006.00375.x

Kraska, P. B. (2007). Militarization and policing—Its relevance to 21st century police. Policing: a journal of policy and practice, 1(4), 501-513. https://dx.doi.org/10.1093/police/pam065

Krohn, M. D. (1976). Inequality, Unemployment and Crime: A Cross-National Analysis. The Sociological Quarterly, 17(3), 303-313. https://dx.doi.org/10.1111/j.1533-8525.1976.tb00984.x

Krohn, M. D. (1978). A Durkheimian analysis of international crime rates. Social Forces, 57(2), 654-670. https://dx.doi.org/10.1093/sf/57.2.654

Krohn, M. D., & Wellford, C. F. (1977). A static and dynamic analysis of crime and the primary dimensions of nations. International Journal of Criminology and Penology, 5(1), 1-16. Retrieved from https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=41419

Lee, D. S., & McCrary, J. (2017). The deterrence effect of prison: Dynamic theory and evidence. In Regression discontinuity designs: Theory and applications (pp. 73-146). Emerald Publishing Limited.

Lemke, T. (2007). An indigestible meal? Foucault, governmentality and state theory. Distinktion: Scandinavian Journal of Social Theory, 8(2), 43-64. https://dx.doi.org/10.1080/1600910X.2007.9672946

Lessing, B. (2017). Counterproductive punishment: How prison gangs undermine state authority. Rationality and Society, 29(3), 257-297. https://dx.doi.org/10.1177%2F1043463117701132

Levitt, S. D. (1996). The effect of prison population size on crime rates: Evidence from prison overcrowding litigation. The quarterly journal of economics, 111(2), 319-351. https://doi.org/10.2307/2946681

Levitt, S. D. (2004). Understanding why crime fell in the 1990s: Four factors that explain the decline and six that do not. Journal of Economic Perspectives, 18(1), 163-190. https://dx.doi.org /10.1257/089533004773563485

Levitt, Steven D. (1997). Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime. American Economic Review 87, 270-290.

Liedka, R. V., Piehl, A. M., & Useem, B. (2006). The crime-control effect of incarceration: does scale matter? Criminology & Public Policy, 5(2), 245-276. https://dx.doi.org/10.1111/j.1745-9133.2006.00376.x

Liska, A. E., Krohn, M. D., & Messner, S. F. (Eds). (1989). Theoretical integration in the study of deviance and crime: Problems and prospects, New York, NY: State University of New York Press

Lisowska, A. (2017). Crime in tourism destinations: Research review. Turyzm, 27(1), 31-39. https://dx.doi.org/10.1515/tour-2017-0004

Lochner, L. (2004). Education, work, and crime: A human capital approach. International Economic Review, 45(3), 811-843. https://dx.doi.org/10.1111/j.0020-6598.2004.00288.x

Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. American Economic Review, 94(1), 155-189. https://dx.doi.org /10.1257/000282804322970751

Lynch, M. J (2013) Political economy and crime: an overview, Journal of Crime and Justice, 36(2), 137-147. https://dx.doi.org/10.1080/0735648X.2012.752250

Marvell, T. B., & Moody, C. E. (1994). Prison population growth and crime reduction. Journal of Quantitative Criminology, 10(2), 109-140. https://dx.doi.org/10.1007/BF02221155

Marvell, T. B., & Moody, C. E. (1996). Specification problems, police levels, and crime rates. Criminology, 34(4), 609-646.https://doi.org/10.1111/j.1745-9125.1996.tb01221.x

McDonald, L. (1976). The sociology of law and order. London, UK: Routledge.

Messner, S. F., & Tardiff, K. (1986). Economic inequality and levels of homicide: An analysis of urban neighborhoods. Criminology, 24(2), 297-316. https://dx.doi.org/10.1111/j.1745-9125.1986.tb01497.x

Mocan N, Billups S, Overland J. 2005. A dynamic model of differential human capital and crime. Economica, 72, 655–81

Mooney, J., & Young, J. (2006). The decline in crime and the rise of anti-social behavior. Probation Journal, 53(4), 397-407. https://dx.doi.org/10.1177/0264550506069364

Moore, M & Morris, M.B (2011). Political Science Theories of Crime and Delinquency, Journal of Human Behavior in the Social Environment, 21(3), 284-296. https://dx.doi.org/10.1080/10911359.2011.564953

Neumayer, E. (2003). Good policy can lower violent crime: Evidence from a cross-national panel of homicide rates, 1980–97. Journal of Peace Research, 40(6), 619-640. https://dx.doi.org/10.1177/00223433030406001

Newman, G. (2008). The punishment response. New York, NY: Routledge

Noonan, R. (2024). Income Inequality. In Capitalism, Health and Wellbeing: Rethinking Economic Growth for a Healthier, Sustainable Future (pp. 49-57). Emerald Publishing Limited.

Parker, R. N. (1989). Poverty, subculture of violence, and type of homicide. Social Forces, 67(4), 983-1007. https://dx.doi.org/10.1093/sf/67.4.983

Patterson, E. B. (1991). Poverty, income inequality, and community crime rates. Criminology, 29(4), 755-776. https://dx.doi.org/10.1111/j.1745-9125.1991.tb01087.x

Petersen, K., Weisburd, D., Fay, S., Eggins, E., & Mazerolle, L. (2023). Police stops to reduce crime: A systematic review and meta-analysis. Campbell systematic reviews, 19(1), e1302.

Pollock, J. M. (1997). Prisons: Today and tomorrow. Burlington, VT: Jones & Bartlett Learning.

Published as "Politik als Beruf," Gesammelte Politische Schriften (Muenchen, 1921), pp. 396-450. Originally a speech at Munich University, 1918, published in 1919 by Duncker & Humboldt, Munich. From H.H. Gerth and C. Wright Mills (Translated and edited), From Max Weber: Essays in Sociology, pp. 77128, New York: Oxford University Press, 1946.

Roberts, D. E. (2003). The social and moral cost of mass incarceration in African American communities. Stan. L. Rev., 56, 1271-1304

Sachsida, A., de Mendonça, M. J. C., Loureiro, P. R., & Gutierrez, M. B. S. (2010). Inequality and criminality revisited: further evidence from Brazil. Empirical Economics, 39, 93-109.

Sampson, R. J., & Groves, W. B. (1989). Community structure and crime: Testing social-disorganization theory. American journal of sociology, 94(4), 774-802. https://dx.doi.org/10.1086/229068

Soares, R. R. (2004). Development, crime and punishment: accounting for the international differences in crime rates. Journal of Development Economics, 73(1), 155-184. https://dx.doi.org/10.1016/j.jdeveco.2002.12.001

Spelman, W. (2008). Specifying the relationship between crime and prisons. Journal of Quantitative Criminology, 24(2), 149-178. https://dx.doi.org/10.1007/s10940-008-9042-x

Stern, B.V (2007) Creating criminals: a recipe for an insecure world? Criminal Justice Matters, 70(1), 5-6, https://dx.doi.org /10.1080/09627250708553676

Steurer, S. J., & Smith, L. G. (2003). Education Reduces Crime: Three-State Recidivism Study. Executive Summary. Correctional Education Association. Available at http://www.ceanational.org/documents/EdReducesCrime.pdf.

Sugiharti, L., Purwono, R., Esquivias, M. A., & Rohmawati, H. (2023). The nexus between crime rates, poverty, and income inequality: A case study of Indonesia. Economies, 11(2), 62.

Torres-Tellez, J., & Montero Soler, A. (2023). After the economic crisis of 2008: Economic conditions and crime in the last decade for the case of Spain. American Journal of Economics and Sociology, 82(3), 223-239.

Vasquez Escallon, Juanita (2015): When too much punishment decreases legality. The case of coca-reducing policies in Colombia, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2015: Ökonomische Entwicklung - Theorie und Politik - Session: Foreign Aid and Sanctions, No. F15-V3, ZBW - Deutsche Zentralbibliothek für Wirtschaftswissenschaften, Leibniz-Informationszentrum Wirtschaft. Retrieved from http://hdl.handle.net/10419/113156

Wacquant, L. (2010, June). Crafting the neoliberal state: Workfare, prison fare, and social insecurity. Sociological Forum, 25(2), 197-220. https://dx.doi.org/10.1111/j.1573-7861.2010.01173.x

Wansbeek, T. (2001). GMM estimation in panel data models with measurement error. Journal of Econometrics, 104(2), 259-268. https://dx.doi.org/10.1016/S0304-4076(01)00079-3

Weiss, D. B., & MacKenzie, D. L. (2010). A global perspective on incarceration: how an international focus can help the United States reconsider its incarceration rates. Victims and Offenders, 5(3), 268-282. https://dx.doi.org/10.1080/15564886.2010.485910

Wellford, C. F. (1974). Crime and the dimensions of nations. International Journal of Criminology and Penology, 2(1), 1-10.

Wilson, J.Q. (1995) Crime and Public Policy. In Q.J. Wilson and J.R. Petersilia. Crime. San Francisco: CA, Institute for Contemporary Studies.

Wolf, P. (1971). Crime and development: An international comparison of crime rates. Scandinavian Studies in Criminology, 3, 107-120.

Wu, D., & Wu, Z. (2012). Crime, inequality and unemployment in England and Wales. Applied Economics, 44(29), 3765-3775. https://dx.doi.org/10.1080/00036846.2011.581217

Yates, Arthur L., "Thomas Hobbes on Punishment" (2012). Electronic Thesis and Dissertation Repository. 550. Retrieved from https://ir.lib.uwo.ca/etd/550

Zaman, K. (2018). Crime-poverty nexus: an intellectual survey. Forensic Res Criminol Int J, 6(5), 327-329.

APPENDIX

Table A1: Variable Indicators and Data Sources

Variable	**Indicator**	**Source**
Property Crime	Theft (In Counts)	United Nations Office of Drugs and Crime (UNODC)
Interpersonal Crime	Serious Assault (In counts)	United Nations Office of Drugs and Crime (UNODC)
Policing	Police Personnel (per 100,000 people)	UNODC
Prison Population	Prison Population (per 100,000 people)	UNODC
Average Income	Gross National Income (GNI) per capita	World Development Indicators (WDI), World Bank
Education Attainment	Mean Years of Adult Schooling	Human Development Reports (HDR), United Nations Development Program (UNDP)
Urbanization	Urban Population (% of the total population)	WDI
Rule of Law	Rule of Law Index	World Governance Indicators (WGI), World Bank

Table A2: Region and Countries in the dataset

Region	Country
Oceania	New Zealand
	Australia
Eastern Europe	Belarus
	Bulgaria
	Czechia
	Hungary
	Poland
	Republic of Moldova
	Romania
	Russian Federation
	Slovakia
	Ukraine
Northern Europe	Denmark
	Estonia

Region	Country
	Finland
	Iceland
	Ireland
	Latvia
	Lithuania
	Norway
	Sweden
	United Kingdom of Great Britain and Northern Ireland
Southern Europe	Albania
	Croatia
	Greece
	Italy
	Malta
	Montenegro
	Portugal
	Serbia
	Slovenia
	Spain
	The former Yugoslav Republic of Macedonia
Western Europe	Austria
	Belgium
	France
	Germany Luxembourg
	Netherlands
	Switzerland
Northern America	United States
	Canada
	Mexico
Central America	Belize
	Costa Rica
	El Salvador
	Guatemala
	Mexico
	Panama
South America	Argentina
	Bolivia
	Brazil
	Chile
	Colombia

Region	Country
	Ecuador
	Paraguay
	Peru
	Uruguay
Central Asia	Kazakhstan
	Kyrgyzstan
	Tajikistan
Eastern Asia	China
	China, Hong Kong Special Administrative Region
	China, Macao Special Administrative Region
	Japan
	Mongolia
	Republic of Korea
South East Asia	Indonesia
	Philippines
	Singapore
	Thailand
South Asia	India
	Maldives
	Sri Lanka
	Pakistan
Western Asia	Armenia
	Azerbaijan
	Cyprus
	Georgia
	Israel
	Lebanon
	State of Palestine
	Turkey
Eastern Africa	Burundi
	Kenya
	Madagascar
	Mauritius
	Mozambique
	Rwanda
	United Republic of Tanzania
	Zimbabwe
Middle Africa	Cameroon
	Algeria
	Egypt

Region	Country
	Morocco
	South Africa
	Swaziland
Western Africa	Nigeria
	Cabo Verde
	Burkina Faso
Caribbean	Bahamas
	Barbados
	Grenada
	Jamaica
	Saint Vincent and the Grenadines
	Trinidad and Tobago