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# CORRELATING VIOLENCE AND SOCIO-ECONOMIC INEQUALITY: AN EMPIRICAL ANALYSIS

**BY**

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**Acknowledgements**

The present paper forms part of the outputs of a project on the *Analysis of the structural causes of violence, including torture, through a human rights perspective: the relationship between socio-economic and institutional factors* initiated by the World Organisation Against Torture (OMCT). This paper concerns the 'analysis of correlations' conducted by OMCT, in partnership with the InFocus Programme on Socio-Economic Security (IFP/SES) of the International Labour Organization (ILO) and the UN human rights mechanisms working on torture, forced disappearances, summary executions, violence against women and arbitrary detention. Appreciation goes to IFP/SES for allowing access to the People's Security Surveys (PSS) and project partners: the Centro de Estudios Legales y Sociales (CELS), Argentina; the Land Center for Human Rights (LCHR), Egypt; the Human Rights Institute of South Africa (HURISA), South Africa; the Legal Aid Society (LAS), Uzbekistan; and Rural Reconstruction Nepal (RRN), for their extensive data gathering. Special thanks go to Meghna Abraham (Programme Manager, OMCT), Jose Figueiredo (Senior Economist, IFP/SES, ILO), Todd Landman (Senior Lecturer, Department of Government, University of Essex) and Rana Crevier (Intern, OMCT) for their invaluable advice and technical support, and Nathalie Mivelaz (Centre on Housing Rights and Evictions) for her earlier comments. The author is solely responsible for the views expressed in the paper and errors that may have remained in it.

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## Executive Summary

It has been over a year since I prepared the draft Correlations paper for the OMCT. Although somewhat experimental, the study fulfilled its objective in ascertaining tendencies between incidents of violence and socio-economic inequalities in the hope of alerting bodies concerned with the general 'global' situation of human rights violations and the socio-economic context within which they occur. The paper brings together the 'who', 'why', 'what', 'when' and 'how' elements of the 'Analysis of Correlations' exercise. 'Who' we refer to are a total of 63 countries (including the 5 reference countries of Argentina, Egypt, Nepal, South Africa and Uzbekistan). The 'why' section justifies the examination of the relationship between socio-economic inequalities and violence from an empirical perspective, providing arguments in favour and against a statistical approach to the analysis of largely qualitative subject matter (please see the paper for elaboration). 'What' refers to the concepts undergoing measurement, the relevance, explanation and source of specific violence and socio-economic variables and composite indexes employed for the correlation exercise. The 'when' element concerns the timeframe of the 'analysis of correlations', that is, the use of data ranging from 1997-2002. The methodology section examines the measurement approach employed, explaining how violence and socio-economic variables are correlated, what is considered a significant find and how it can be interpreted for the purpose of this study.

After having carefully selected and correlated variables that represent or proxy state and non-state violence against socio-economic inequality, certain trends in the impact of socio-economic factors on the incidence of violence were observed – some affirming obvious global phenomena and others not:

1) Measures of non-state violence (homicides, major assaults) are highly correlated with measures of income inequality (Gini and GDP per capita) and economic development. In other words, income inequality and development are strong predictors of the level of non-state violence in and between countries e.g. non-state violence is higher in countries where a high proportion of people are economically deprived.
2) After income inequality, unemployment and youth (male) unemployment are the most consistent correlates of non-state violence measures e.g. non-state violence (homicides, major assaults) is higher in countries where unemployment, in particular youth (male) unemployment is higher.
3) Measures of state violence (Political Terror Scale, Torture Scale, incarceration rate) are highly correlated with broader composite socio-economic indexes, e.g. ISI, GDI, GEM, Economic Freedom Index and Vanhanen's Democracy Index. As a single powerful explanatory socio-economic variable, income alone has a great influence on state violence as well as non-state violence.
4) Gender-based measures are strong correlates of state violence measures e.g. female literacy rates, female labour force participation, GDI and GEM influence incarceration rates (see incarceration matrix). In other words, the greater empowerment and equality of women, the lower the state violence and vice versa.

5) The absence of a relationship can also be revealing - demographic variables (population density, population growth etc.) are not significant and not strong predictors of violence, whether state or non-state. However the variable 'males aged between 15-29 as a percent of the total population' is a consistent explanatory variable of state and non-state violence i.e. the higher the percentage of young males, the greater the likelihood of violence.

The use of raw data to indicate the existence, strength or absence of relationships contributes to the dissemination of information regarding human rights abuses. For example, relating to point 4, under 'incarceration rates', investing in education (measured by literacy rates) can influence female labour force participation, which in turn influences gender equality. Policy implications here point to the need to address inequalities in income and gender as a possible avenue for addressing levels of violence. There is no critical mass by which a country's socio-economic situation creates an ideal environment for specific forms of violence e.g. torture, yet as our findings demonstrate, there is a higher probability for such violence, the lower the level of development of a country and higher the income inequality.

The latter 'Micro-analysis' section of the paper provides an invaluable insight into the socio-economic breakdown of respondents who have or have not experienced violence (key findings can be found in the conclusion) and reinforces the observations made at the macro level regarding income inequalities, economic development and differences in gender empowerment in and between countries. It was completed before the individual country studies were ready, hence it does not directly refer or flow into the more qualitative assessment of the full context of violence and its subjective determinants.

The merits of the chosen correlation technique lie in its simplicity given that statisticians and human rights specialists rarely often understand each other. Moreover, what one sociologist believes is reliable in terms of indicator use and analysis methodology, another finds unreliable, take for example the Democracy index constructed by Vanhanen and Transparency International's Corruption Perception Index, which have been questionable since their inception. Correlations can't detect non-linear (curvilinear) relationships e.g. the relationship between democracy and human rights violations by the state is said to be an inverted U shape - with most violations occurring in semi-democracies - 'More Murder in the Middle' argument (see Davenport and Armstrong (2003) *Democracy and Violation of Human Rights: A Statistical Analysis from 1976-1996*). Nevertheless, correlations provide a recent empirical snapshot of important associations e.g. torture, which is illustrative since it is a manifestation of the aggravation of political, economic and social conflicts often in the context of unequal distribution of resources, so to understand it we combine standard based measures (e.g. Torture Scale) and its socio-economic characteristics.

This study can also act as a platform for a further stage of empirical analysis, which would involve using more sophisticated regression models. Although not originally planned, I generated simple linear regression coefficients of particular interest. The

benefit of doing this clearly lies in the fact that rigorous regression does enable one to draw causation between variables by predicting the value of Y (dependent variable - violence) at a given level of X (independent variable – socio-economic variable). For example the global regression coefficient between homicide and the Gini index was 0.66. The slope of 0.66 predicts 0.66 or 660 more homicides (per 100,000 people) for each additional point/percentage increase in the Gini index. A longer time frame with consistent time series data including politically-orientated societal behaviour (e.g. terrorism, strikes and guerrilla warfare) and state societal violent behaviour variables (e.g. civil war) spanning many decades would be required to get a complete in-depth causal picture of what, why, how and when variables influence state and non-state violence using multivariate techniques such as regression. This is clearly beyond the scope of this paper.

As for the study at present, since the draft was written, revisions have been made to satisfy points raised by commentators. I made several omissions including references to the 'Relative deprivation thesis' since comparing the ability of states and individuals to mobilize and act violently is complex and too controversial to include in this study. Moreover I re-ran correlations without the outlier South Africa to see whether this country disproportionately drove the overall correlation coefficient result. South Africa did drive key results to a degree e.g. the coefficient (or 'r') fell from 0.53 to 0.44 between homicides and the Gini index used to measure income inequality. In other words, income inequality went from being a strong to moderate predictor of homicide, generally speaking. On the contrary, the omission of South Africa had little or no impact on the highly positively correlated relationship between the Political Terror Scale and the Income Security Index, and the highly negatively correlated relationship between the Torture Scale and Gender Development Index.

In the future, available time series data will enable an analysis of the influence of violence on socio-economic variables (as opposed to just socio-economic variables on violence in the draft study). Correlation is bi-directional in terms of inferring causality however observing the influence of socio-economic variables on violence remains the focus. Nonetheless to address concerns that the time period was too short to evaluate violence and socio-economic variables, I re-ran various correlations taking into consideration socio-economic data from as early as 1980 e.g. the correlation coefficient increased from $r = 0.41$ to 0.52 when youth male unemployment data (average from 1980) was used to correlate against major assaults, affirming and strengthening the association between the two variables, i.e. the number of major assaults is higher in countries where youth (male) unemployment is higher. This no doubt has implications for parties interested in the interplay between violence and unemployment.

Theoretically and empirically speaking, the study remains invariably ambitious in analysing different types of violence and socio-economic variables, which arguably, have no natural fit. However if the results are interpreted with caution, they provide a useful comprehensive analysis. The study does not tell you why violence occurs or which policies to employ to decrease violence, but it retains its importance by bringing together

a wealth of raw data in a unique and telling fashion. Due to this uniqueness and a plethora of related sociological fields of study, drawing references to subject matter in this area has not been straightforward, but remains something to be developed later on. In relation to the entire project, the correlations presented in the study do not replace the more in-depth country specific case studies but complement them by illustrating, measuring and predicting how and which variables of interest interact. Furthermore, the nature of the study renders it dynamic to updates, insertions, alterations and omissions according to varying needs and perspectives. By bringing together data compiled by NGOs, international organisations and human rights experts, this paper is a reference source for those interested in investigating general tendencies related to socio-economic inequalities and violence and aspires to contribute to broadening the global study on the interplay between inequality and violence. Ultimately, it is hoped that certain associations provided in this paper serve as access points relevant to specialist authorities, bodies and institutions seeking to study and/or decrease human rights violations.

## 1. Objective

The objective of this exercise is to ascertain tendencies between incidents of violence and socio-economic inequalities at the macro and micro level. With enough information on violence and socio-economic inequalities, the aim is to demonstrate that "there is a correlation between violence and socio-economic inequality and development which points to possible wider structural causes of violence globally"[1].

### 1.1. Why correlate violence and socio-economic inequalities?

Historically speaking, the use of statistical approaches for the measurement and analysis of human rights has been relatively undeveloped. From the outset, any attempt to quantify human rights violations is clouded in controversy. This is understandable given that by nature human rights is highly qualitative and conceptually, it does not render a definitional consensus *per se*. However these differences and difficulties provide a challenge to the study of human rights, not a deterrent. To narrow the gap between rhetoric and reality, and allocate resources effectively, one needs to know which rights are being violated, why, where and how frequently. A number can't capture the debasement of dignity experienced by victims of human rights violations nor can it seize the full context of fear generated by a regime, yet it can alert concerned bodies.

The added value of statistics lies in its ability to help people to understand and publicise the extent and character of human rights violations, to identify those most affected to the point of profiling the pattern of victimisation, and even clarify responsibility for violations. There exist a variety of techniques in statistical analysis that can serve numerous purposes. Some methods can help in making inferences, while others deal with probability, population description, correlation and causation, and random and non-random results. Furthermore, statistics can help researchers make generalizations about trends in a population or country, based on data samples collected, with a reasonably high degree of accuracy. More advanced techniques (regression) can make use of the relation between two or more quantitative variables, allows for predictions about one variable (dependent) to be made through an observed relationship and interaction with another (independent) variable. For example, if we are able to observe a relationship between GDP per capita and levels of violence in a country, we can predict levels of violence by regression analysis once the level of GDP per capita has been set. The identification of certain patterns allows for important conclusions to be drawn.

Statistical indicators are methodological tools that help researchers focus on using, understanding, and quantifying, various kinds of information. They help indicate where certain variables located, in comparison to others on a spectrum, with regard to one or more variables. When analysed over time, this allows researchers to observe the progress and evolution of countries, individuals, etc. with respect to certain criteria. In the human

[1] See section 2 on 'Concepts' for a definition of both violence and socio-economic inequality.

rights context, this allows for inferences, hypotheses, and various frameworks for analysis.[2]

This exercise attempts to utilise the reporting and fact finding missions of NGOs, contribute towards the dissemination of information concerning the abuse of human rights and perhaps provide policy relevant information. Collecting and analysing statistics is a complement not a substitute to the expertise and judgement of human rights organisations/institutions. Even the absence of statistics and/or fragmentary, anecdotal data, enable us to make inferences about the scale and severity of a country's human rights situation on a phenomenon known to exist. Furthermore highly dubious or distorted statistics can serve as an early indicator of human rights violations for it is clear that the more repressive the regime, the more difficult it is to access (quality) information on human rights violations in a country.

### 1.1.1. Limitations

Statistical approaches to measuring rights violations are not without their drawbacks. In terms of the nature of data used for this exercise, much emphasis is placed on crime statistics, which are invariably limited to offences detected, reported and recorded. The quality of reporting systems for both crime statistics and socio-economic variables vary considerably. Compounding this is the fact that the more repressive the regime is, the more difficult it is to obtain reliable, time series data for correlations. For this very reason, violence variables are limited in scope. Since obtaining data of this nature is difficult, every attempt was made to use existing reliable variables that are comprehensive in country coverage and years.

The indexes adopted for this exercise in both tables 1 and 2 (see below) are designed to capture either different angles of 'state' violence or socio-economic contexts by mixing both subjective and objective elements, yet exactly how these are mixed is arbitrary and thus open to bias and may mislead readers. 'State' violence indexes e.g. Rule of Law Index, are particularly tricky to use since it becomes increasingly difficult to keep human rights at the centre of measurement efforts as indexes tend to go beyond this to a more 'democratisation' focus. Much is left to the discretion of the author designing the study, who bases his or her choice of a particular measure on the time period covered and preferred statistical application etc. Careful interpretation of indicators is required, taking into account the motivation and mandates of different data providers.

Concerning statistical techniques (see below), correlations can be interpreted as spurious given the fact that at best they only infer and not state causality. Results of this exercise are open to interpretation. Issues such as sampling errors and bias are common

[2] Maria Green, "What We Talk About When We Talk About Indicators: Current Approaches to Human Rights Measurement," *Human Rights Quarterly* 23 (2001), 1062-1097; Douglas A. Samuelson and Herbert F. Spirer, "Uses of Incomplete and Distorted Data in Inference About Human Rights Violations," in *Human Rights and Statistics: Getting the Record Straight* 71 (Thomas B. Jabine & Richard P. Claude eds., 1992).

depending on how one interprets the sample size, whether it is too small or unrepresentative etc. Undoubtedly the use of statistics for this exercise involves a trade off between quality and quantity. Carrying out a global study using numerous variables lacks the in-depth, more quality based analysis of case studies, yet case studies lack the coverage of a global study and selection bias is high in the process of choosing case studies.

## 2. Concepts

### 2.1. The Concept of Violence

Violence is a fluid and dynamic concept that does not render a definitional consensus *per se*. Generic definitions reduce violence to the use of physical force, which causes harm to others. One doesn't need to enter an in-depth discussion of terminology to recognise the importance of disaggregating violence as a concept and as a precursor to the following analysis of correlations exercise.

What really constitutes violence is based on one's interpretation, yet the infliction of harm on others remains crucial. For reasons of clarity and consistency, the OMCT has created a working definition of violence, which considers the varying dimensions of violence as a concept. At its narrowest, 'violence' has been defined as the unlawful exercise of physical force, at its broadest 'violence' has been understood to include harm caused by structural inequalities in society. We consider that each of these definitions has its individual merits and accept that diverse acts, including those that are a result of social injustice can be perceived as violence by the people affected by these acts. Our approach in the research is to come up with a working definition of 'violence', which is a limited interpretation, tailored to the research project rather than a comprehensive and exhaustive enumeration of the term. Violence is accordingly defined as:

*Physical, sexual and psychological abuse*[3] *(including threats of physical or sexual abuse) of an individual, group or community. The severe neglect of an individual or individuals in the care or custody of a person or institution would also fall within the definition.*

The following table illustrates the specific variables of violence, in effect, how violence will be interpreted in figures for the analysis of correlations exercise. The table groups the violence variables into two categories – 'Non-state' and 'State' violence. Included in the 'State' violence category are 4 'violence' variables, which combine subjective evaluations and objective criteria to score countries. Although these measures depend on

[3] The term abuse has been used to refer to the improper use of force and therefore injuries that are caused accidentally, in the course of lawful behaviour, would not fall within the notion of abuse. The term abuse is also used here to point towards a minimum threshold of severity that the physical or psychological force used must reach before inclusion within the research. This minimum level would be assessed taking into account the level of force used, the circumstances in which it takes place and the individual circumstances or characteristics of the person or persons harmed or affected by the use of force.

subjective evaluations in the sense that experts attribute a rank/score to a country based on their knowledge and experience, these measures directly concern state violence and are considered relatively unbiased and useful for international comparisons.

**Table 1. Explanation and source of violence variables**

| **1) Non-state violence** | | |
|---|---|---|
| Averages 1998-2000 or latest year available. | | |
| *Variable* | *Explanation* | *Source* |
| Intentional Homicide Rate | Recorded death purposely inflicted by another person, per 100,000 popn. | UN World Crime Survey, Seventh issue 1998-2000. Interpol International Crime Statistics 2000. |
| Intentional Homicide Rate (Firearm) | Recorded intentional homicides with the use of a firearm, per 100,000 popn. | Same as above |
| Major Assault Rate | Recorded deliberate attacks causing grievous bodily harm e.g. unconsciousness, broken bones, knife wounds etc., per 100,000 popn. | Same as above |

| **2) State violence (Violence committed by state agents and others acting with the compliance or consent of state officials against individuals)** | | |
|---|---|---|
| Averages 1998-2000 or latest year available. | | |
| *Variable* | *Explanation* | *Source* |
| Political Terror Scale | Countries scored according to the following criteria: *Level 1:* Under a secure rule of law, political murders and torture are rare. *Level 2:* Limited amount of imprisonment for non-violent political activity. Political murder is rare. *Level 3:* Extensive political imprisonment. Unlimited detention, with or without a trial for political views. *Level 4:* Practice of level 3 expanded to larger numbers. Murder, disappearance, and torture are common. *Level 5:* Terrors of level 4 expanded to whole popn. Leaders place no limits on means to pursue personal or ideological goals. | Mark Gibney, University of North Carolina |
| Torture Scale | Sections on torture in the US Department of State Country Reports on Human Rights were coded referring to requirements under torture treaties. A country's practices are coded by using key words identified in the reports to indicate the frequency of the use of torture. Draws on several data sources and cross checks her results against more than one source. Partially subjective measure ranging from 1-5 (5 representing widespread torture) | Oona A. Hathaway, Yale Law School |
| **Democracy, Good Governance and Rule of Law** | | |
| *Variable* | *Explanation* | *Source* |

| | | |
|---|---|---|
| Corruption Perception Index (CPI) | Aggregates the perceptions of well-informed people with regard to the extent of corruption, defined as the misuse of public power for private benefit. The extent of corruption reflects the frequency of corrupt payments, the value of bribes paid and the resulting obstacle imposed on businesses. 0 = perceived to be totally corrupt. 10 = perceived to be totally clean. For details on index construction see Appendix B. | Transparency International |
| Civil and Political Rights Violation (CPI) score | Summarises 8 different types of violations, reflecting the extent to which the states are willing and/or able to respect the rights formally and in practice. If all 8 types of violations (extra-judicial killings, torture and ill treatment, detention without trial, unfair trial, denial of political participation, denial of association, denial of expression and discrimination) exist, the total score is 8. High score indicates low govt. commitment and vice versa. | Hans-Otto Sano (Danish Centre for Human Rights) |
| Rule of Law Index | Reflects the statistical compilation of responses on the quality of governance given by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, non-governmental organizations, and international organizations. For details on index construction see Appendix B. | Daniel Kaufman, Aart Kraay, Massimo Mastruzzi |
| **Penal Conditions** | | |
| *Variable* | *Explanation* | *Source* |
| Incarceration Rate | No. of convicted adults admitted to prison, per 100,000 popn. | UN World Crime Survey, Seventh issue 1998-2000. Interpol International Crime Statistics |

## 2.2. The Concept of Socio-Economic Inequality and Development

For the purpose of this exercise, socio-economic inequality is defined as the manifestation of an unequal distribution of resources socially, economically and politically. The table below organises socio-economic variables according to what 'level of analysis' they are relevant e.g. macro and micro, and according to theme. Unlike violence variables in table 1, there is a general agreement on the definition of most socio-economic variables e.g. life expectancy or infant mortality etc. with some variables such as the ratio of richest to poorest useful for both intra and inter-country comparisons. Most socio-economic variables reveal the level of development of a country and thus on their own reveal little in terms of absolute inequality unless of course they are ratios etc, however cross-country comparisons will demonstrate that development variables can gauge relative inequality.

Among the different themes in the table below is a 'Composite Index' category which represents an array of indexes (or indices) composed of numerous separate variables feeding into one greater composite index. The United Nations Development Programme's (UNDP) Gender Development Index (GDI) is one such example. The GDI captures a range of gender related socio-economic information for each country from most 'themes' in table 2 and summarises the data in one index figure. These internationally comparable indexes are from highly accessible and credible secondary data sources.

The 'Survey' category falls under the 'Micro level of analysis'. This category concerns information collected by People's Security Surveys (PSS)[4] carried out in Argentina and South Africa by the InFocus Programme on Socio-Economic Security (IFP/SES) of the International Labour Office (ILO)[5]. Under this 'Survey' category is social, economic and demographic information on respondents, collected by the PSS (essentially household surveys). These surveys ask representative population samples (up to 3000 people) about their experiences, perceptions and opinions regarding selected offences over a given time. The PSS provides a realistic record of the population affected by violence, as crime rates based on official statistics are universally lower than survey-based victimisation figures. Furthermore the PSS asks how secure the respondent feels about their human rights situation, whether they feel their rights are under threat etc.

Survey-based data helps us explore how violence varies according to a number of socio-economic factors such as gender, age, ethnicity, income, education and occupation etc. – the typology of victims. This enables us to reveal and analyse the frequency and types of violence risks among different groups and if repeated, a measure of violence trends unaffected by changes in reporting behaviour of the victim or body recording the incident.

**Table 2. Explanation and source of socio-economic variables**

| ***Socio-Economic Variables*** | | |
|---|---|---|
| Averages 1997-1999 or latest year available. | | |
| **1) Macro level** | | |
| **a) Demography – proxies/represents resources stress** | | |
| *Variable* | *Explanation* | *Source* |
| Life expectancy at birth (total) | Indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| Popn density | Midyear popn divided by land area in square kilometres. | Same as above. |
| Population (female) | Female population is the percentage of the population that is female. | Same as above. |
| Popn growth rate | Annual popn growth rate. Popn is all | Same as above. |

[4] ILO (2003). *People's Security Surveys: A Manual for Training and Implementation*. Draft version. Geneva: IFP/SES.

[5] For more information on the PSS, please consult http://www.ilo.org/english/protection/ses/index.htm

| | | |
|---|---|---|
| | residents regardless of legal status or citizenship--except for refugees not permanently settled. | |
| Male popn aged 15-29 | Midyear popn of males aged 15-29 as % of total population. | U.S. Bureau of the Census, International Database |
| Urban popn | Share of total popn living in areas defined as urban, percent | Same as above. |
| Urban popn growth | Mid-year popn of areas defined as urban, annual percent | Same as above. |
| | | |
| **b) Inequality and Poverty – proxy for economic development in and between countries.** | | |
| *Variable* | *Explanation* | *Source* |
| Aid per capita | Includes both ODA and official aid, and is calculated by dividing total aid by the midyear population estimate. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| Daily newspapers | Daily newspapers refer to those published at least four times a week, per 1,000 people. | Same as above. |
| Electric power consumption | Measures the consumption of electricity (kwh) per capita | Same as above. |
| Employment (agriculture) | Percent of total employment working in the agricultural sector which includes hunting, forestry, and fishing | Same as above. |
| Employment (industry) | Percent of total employment working in industrial sector. Includes mining, quarrying (including oil), manufacturing, electricity, gas, water, and construction | Same as above. |
| Employment (services) | Percent of total employment working in the service sector. Includes wholesale, retail, restaurants, hotels, transport, storage, communications, financing, insurance, real estate, business and community services | Same as above. |
| Gini index | Measures extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals/households deviates from a perfectly equal distribution. An index of zero represents perfect equality, while an index of 100 implies perfect inequality. | UNDP Human Development Reports 2001 and 2003 |
| GDP (constant 1995 US$) | The sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| GDP growth | Annual percent growth rate of GDP at market prices based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. | Same as above. |
| GDP per capita (constant 1995 US$) | Gross domestic product divided by midyear population. | Same as above. |
| Illiteracy rate (adult female) | Percentage of females aged 15 and above who cannot, with understanding, read and write a short, simple statement on their everyday life. | Same as above. |

| | | |
|---|---|---|
| Illiteracy rate (adult male) | Percentage of males aged 15 and above who cannot, with understanding, read and write a short, simple statement on their everyday life. | Same as above. |
| Illiteracy rate (adult total) | Percentage of popn aged 15 and above who cannot, with understanding, read and write a short, simple statement on their everyday life. | Same as above. |
| Illiteracy rate (youth male) | Percentage of people ages 15-24 who cannot, with understanding, read and write a short, simple statement on their everyday life. | Same as above. |
| Information and communications technology (% of GDP) | IT expenditure ("tangible" products purchased by businesses, households, governments, institutions and "intangible" spending on software, capital depreciation), and spending on telecom and office equipment. | Same as above. |
| Labour Force (children) | Children 10-14 in the labour force is the % share of that age group active in the labour force. Labour force comprises all people who meet the ILO's definition of the economically active population. | Same as above. |
| Labour Force (female) | Female labour force as a percentage of the total, show the extent to which women are active in the labour force. | Same as above. |
| Poverty rate (national) | Percentage of the popn living below the national poverty line. National estimates are based on population-weighted sub-group estimates from household surveys. | UNDP Human Development Report 2003 |
| Ratio of richest 10% to poorest 10% | Percentage share of income or consumption is the share that accrues to subgroups of population indicated by deciles, expressed as a ratio. | UNDP Human Development Report 2001 and 2003 |
| Unemployment (total) | Percent share of the labour force that is without work but available for and seeking employment. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| Unemployment (male) | Percent share of the male labour force that is without work but available for and seeking employment. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| Youth unemployment (male) | Percent share of the male labour force (ages 15-24) without work but available for and seeking employment. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| | | |
| **c) Public Services – proxy of resource commitment by state** | | |
| *Variable* | *Explanation* | *Source* |
| Health expenditure | The sum of both public and private health expenditures as a percent of GDP. | World Bank's World Development Indicators (WDI 2002 & 2003) |
| Improved water source (total) | Percentage of popn with reasonable access (20 litres per person per day within 1 km of dwelling) to water from a household connection, public stand-pipe, borehole, protected well or spring, and rainwater collection. | Same as above. |

| | | |
|---|---|---|
| Public education expenditure | Consists of public spending on public education plus subsidies to private education at the primary, secondary, and tertiary levels. Expressed as a percent of GDP. | Same as above. |
| Physicians | Graduates of any facility or school of medicine who are working in the country in any medical field (practice, teaching, research). Per 1000 popn. | Same as above. |
| Ratio of girls to boys (education) | Percentage of girls to boys enrolled at primary and secondary levels in public and private schools. | Same as above. |
| Social security expenditure | Total government expenditure on social security contributions as percentage of GDP. | IMF Government Financial Statistics |
| | | |
| **d) Composite Indexes** | | |
| Indexes | *Explanation* | *Source* |
| Gender Development Index (GDI) | Summarises a range of gender-related socio-economic information covering all 'themes' above. The higher the figure, the higher the gender development of a country. | UNDP Human Development Report 2003 |
| Gender Empowerment Measure (GEM) | Composite index measuring gender inequality in 3 basic dimensions of empowerment – economic participation and decision-making, political participation and decision-making and power over economic resources. The higher the figure, the higher the female representation. | UNDP Human Development Report 2003 |
| Income Security Index (ISI) | Index score by how countries ratify Conventions related to income and how countries perform in reality with regards to income security issues. The higher the figure, the higher the income security. | InFocus Programme on Socio-Economic Security (International Labour Office) |
| Economic Freedom of the World Index | Ranks 123 countries according to components: 1) size of government, 2) legal structure and protection of property rights, 3) access to sound money, 4) freedom to exchange with foreigners and 5) regulation of credit, labour and business. | Frasier Institute |
| Index of Democracy | Ranks states' democratic status according to formula: (competition * participation)/100. Competition defined as subtracting the percentage of the votes won by the largest party from 100 and participation is percentage of the total population that actually voted, voter turnout. | Tatu Vanhanen, Tampere University, Finland |

| **2) Micro-level (Socio-economic variables/profile of survey respondents)** | *Explanation* | *Source* |
|---|---|---|
| Gender | Gender of the victim of state and non-state violence (respondent). | People's Security Survey (PSS), IFP/SES, ILO (2001) |
| Age | Age of the victim of state and non-state violence (respondent). | Same as above |

| | | |
|---|---|---|
| Ethnicity | Ethnicity of the victim of state and non-state violence (respondent). | Same as above |
| Education | Level of educational attainment of the victim of state and non-state violence (respondent). | Same as above |
| Income | Income of the victim of state and non-state violence (respondent). | Same as above |
| Occupation | Occupation of the victim of state and non-state violence (respondent). | Same as above |

### 2.2.1. Levels of Analysis

1) Macro-Level (observing links between violence and socio-economic inequalities at the national level using):
    - International sources e.g. UN Crime Survey and WDI
    - Partner NGO data

The macro-level of analysis concerns the correlation of violence and socio-economic inequality and development data that have been collected at the national level for all 63 countries e.g. all violence variables listed in table 1 and all socio-economic variables under number '1' in table 2.

2) Micro-Level (observing links between violence and socio-economic inequalities at the individual level using):
    - PSS data
    - Partner NGO data

The micro-level concerns the analysis of survey data (PSS) on victims of violence from Argentina and South Africa. Victims of state and non-state violence are analysed according to their socio-economic profile (gender, age, income, educational attainment and occupation – variables under number '2' in table 2) in search of trends.

### 2.2.2. A Note on Data

All violence and socio-economic variables were selected carefully and their selection based on theoretical reasons rather than convenience or taste. No attempt was made to provide an exhaustive measure of both, yet the variables under each heading seem to cover the meaning and underlying theoretical concepts fairly well. It must be noted here that under the 'Sources' column of both tables 1 and 2, there is heavy emphasis on the United Nations World Crime Survey ('violence' variables) and World Bank's World Development Indicators Databases ('socio-economic' variables). Since both sources rely on data gathering by official statistical organisations/ institutions in each country, they are naturally plagued with data quality issues. Datasets of this nature share numerous criticisms – concerns over differences in definition, interpretation errors, aggregation errors, sampling errors, double counting etc. which pose enormous difficulties for comparative measurement purposes. However the sources used for this exercise are highly credible and make all attempts to provide collectable, accurate and comprehensive

data in terms of series and coverage of years, enabling consistent comparisons of figures across many countries.

Given the inherent problems of collecting international crime statistics, attempts were made to verify UN World Crime Survey data with that of Interpol to check for inconsistencies and/or abnormal figures (outliers). As crime statistics are collected by the use of questionnaires sent to a single official statistical body representing a country, they are dependent on the accuracy of the body coordinating the data compilation. The differences in propensity to report in different countries will no doubt influence comparability of the amount of crime known by the police. Therefore rather than accepting all official crime statistics, emphasis was placed on specific salient forms of violence e.g. homicides and major assaults. These statistics are believed to be relatively reliable given the extreme nature of these crimes and subsequent necessity to record them. If one took international crime statistics at face value, then one would be falsely led to believe that New Zealand is the most crime ridden country in the world as total *recorded* crime in 2000 stood at 11,152.5 per 100,000 population (UN World Crime Survey 2000)[6].

Concerning measures of state violence such as the Torture Scale (table 1), emphasis was placed on capturing how countries fare in practice. Although it is intuitively expected that the ratification of torture treaties contribute to better conduct of the state, this is not necessarily true as shown by the Torture Scale. Hathaway's paper shows that countries that ratify conventions on torture do not always have better human rights ratings. The level of ratification of the universal Torture Convention has a relatively flat relationship to recorded levels of torture. Therefore a combination of both quantitative and qualitative analysis is needed. An obvious drawback of statistical inquiry is that the accuracy of the analysis depends on the accuracy of the data on which it rests, however to address this problem Hathaway draws on several different data sources and cross checks her results against more than one source[7].

The same can be said about other partially subjective measures such as the Income Security Index (ISI) in table 2. For 96 countries, this index combines data on International Labour Organisation ratifications e.g. Convention 102 on minimum standards for social security and its outcome in reality e.g. percent expenditure on social security. In other words, the ISI captures the theoretical underpinnings and practical aspects of income security around the world.

Originally a socio-economic variable on land inequality was included but later removed due to methodological problems. Land inequality as a variable features heavily in studies relating to violence and inequality since it is believed that the maldistribution of land is the key determinant of social unrest since land is the most important resource in rural societies. Its exclusion from this exercise is justified on the grounds that arguably, unrest

[6] UNODC (2000). *UN World Crime Survey (Seventh edition)*
http://www.unodc.org/unodc/en/crime_cicp_survey_seventh.html#responses
[7] Hathaway, O. A. (2002). Do treaties make a difference? *Yale Law Journal* 111, June 2002.

that can lead to violence, is more a function of national income inequality than landlessness and thus using various measures of income inequality for this exercise is sufficient enough. Secondly, most measures of land inequality focus on inequality of land holdings within the group of landowners, thus failing to capture inequalities across the landholders (small and large) and the landless in a country. What is preferred for future analyses, but presently beyond the scope of this exercise is an index of land inequality combining division of land holdings between smallholders and largeholders, share of total agricultural land dominated by the largest farms, landlessness and relative size of rural population.

Under the framework of the project, state violence at both the macro and micro level is of paramount interest given the challenges of collecting data of this nature. The five organisations in the field that are directly involved in the project as partners, the Centro de Estudios Legales y Sociales (CELS), Argentina; the Land Center for Human Rights (LCHR), Egypt; the Human Rights Institute of South Africa (HURISA), South Africa; the Legal Aid Society (LAS), Uzbekistan; and Rural Reconstruction Nepal (RRN), have played a crucial role in this respect.

The 5 partners carried out data gathering on 'state violence' between 1998 and 2002 via primary and secondary data sources in their respective countries and will be analysed for trends. These 5 countries were selected for the overall project and represent the regions of South America, North Africa, Southern Africa, Eurasia and East Asia. Their expertise and close proximity to these actual incidents of violence has been an asset to the analysis of correlations[8].

Originally it was planned to analyse the 5 countries both at macro and micro levels, however this was not possible for all countries due to the lack of consistent, time series data for the correlations and/or victimisation survey e.g. People's Security Survey (micro-level) data was not obtainable. Argentina and South Africa are analysed at both levels due to strength of data (PSS were carried out in these countries). Data for Uzbekistan is analysed at the macro level (correlations), but not the micro-level. Data for Egypt and Nepal is analysed in the context of country reports and are not analysed in the same format as Argentina, South Africa and Uzbekistan i.e. not analysed according to macro and micro levels. Raw data sent by the Land Center for Human Rights (LCHR), Egypt, and Rural Reconstruction Nepal (RRN) is analysed in the context of country reports i.e. not included in this report but feature in other parts of the project. However some data for Egypt features in tabular and graphical form (Appendix D).

### 2.3. A Human Rights Framework

Identifying and analysing the impact of socio-economic factors in isolation or in relation to institutional factors requires an approach based upon human rights (the human rights perspective) including economic, social, cultural, civil and political rights. In this respect, economic, social and cultural rights will allow for the investigation and

[8] A summary of the data gathered by partner NGO's in Egypt and South Africa is in Appendix D.

evaluation of issues related to rule of law, inequalities, access to basic services, marginalisation, vulnerability, etc. concerning a given population. Sustainable protection against torture and other forms of violence cannot be conceived without living conditions ensuring the respect of the economic, social and cultural rights of each individual.

The International Covenant on Economic, Social and Cultural Rights (ICESCR), as the main international instrument on economic, social and cultural rights, will constitute an important tool of reference.[9] The precise content of the rights listed in the ICESCR and the modalities surrounding their implementation is specified on the basis of the work carried out by the U.N. Committee on Economic, Social and Cultural Rights (review of State reports and interpretation of the ICESCR through General Comments); of the Limburg Principles on the Implementation of the ICESCR; and of the Maastricht Guidelines on Violations of Economic, Social and Cultural Rights.

The realisation of economic, social and cultural rights can be measured by employing numerous development indicators (table 2 above) as proxies/substitutes. Development indicators are seen as suitable proxy measures to capture the degree to which states are implementing rights obligations e.g. literacy rates and gender breakdown of educational attainment are seen as proxy measures of the right to education; daily per capita supply of calories and other nutritional rates are seen as proxy measures of the right to food; and under five mortality rates and numbers of doctors per capita are seen as proxy measures of the right to health[10]. Unfortunately from a statistical point of view, investigating the relative realisation of rights over an extended period of time or 'progressive realisation', is beyond the scope of this exercise given that the time frame we are dealing with is relatively short.

Theorising the causes of violence through a human rights perspective cuts across and is intrinsically related to the concepts of democracy, good governance and the rule of law. This exercise allows us to integrate human rights within the causes of violence, and within the concepts of democracy, good governance and the rule of law. The absence of democracy, good governance[11] and the rule of law have often been described as being important causes of violence. In this respect, the absence of corruption; a democratic, transparent, accountable and participatory system of public affairs, which addresses the needs of the populations; as well as differentials in the distribution of wealth and productive resources have been identified, amongst other features, as essential prerequisites allowing for the reduction of violence[12]. On the other hand, the absence of or failure to respect these prerequisites often engender causes of violence.

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[9] This does not excludes the other instruments - international or regional- entailing provisions related to economic, social and cultural rights

[10] Landman, T. and Hausermann, J. (2003). *Map-making and analysis of the main international initiatives in developing indicators for democracy and good governance*. Report submitted to Eurostat.

[11] The concept of good governance is to be understood as a participatory, equitable, gender-balanced, transparent, efficient and accountable management of public affairs

[12] NAFZIGER, W., *The Economics of Complex Humanitarian Emergencies: Preliminary Approaches and Findings*, The United Nations University/World Institute for Development Economics Research, Working Papers No. 119, September 1996.

### 2.3.1. Human Rights Indicators

The International Association for Official Statistics (IAOS) Conference on "Statistics, Development and Human Rights" in Montreux in September of 2000 was the first of its kind to seriously promote coordination and dialogue between three branches of experts in the international community: statisticians, development specialists and human rights practitioners. It helped propel the development of an international network of organisations whose goal it was to develop statistical methods, tools and indicators for use in assessing human rights conditions and standards.

Several projects have been undertaken since the conference, attempting to concretise the usage of statistical methods in the human rights context. In 2002, workshops held by the European Commission in Munich and Brussels convened on "Measuring Good Governance" and on "Statistics and Human Rights", and the Mexican Commission for Human Rights, the Swiss Development Co-operation Agency, and the Swiss Federal Statistics Office in Merida held a seminar on "Statistics and Indicators for National Human Rights Diagnosis". These seminars and workshops focused on the areas highlighted by the Montreux conference as well as on better defining conceptual approaches to monitoring rights and laying a more comprehensive framework for the development of statistical indicators. In keeping with the spirit of the Montreux and subsequent conferences, the project proposal METAGORA (Measuring Democracy, Human Rights and Good Governance), a two year pilot project, began in 2003. Its aim is to develop and test statistical methods, tools and indicators that would allow assessment of human rights and governance in multiple dimensions.

Indicators, in the human rights context, help categorize important actors and have allowed the international community to begin holding them accountable for their actions. The UNDP has identified several for human rights indicators: making better policies and monitoring progress; identifying unintended impacts of laws, policies and practices; revealing whether the obligations of these actors are being met; giving early warning of potential violations, prompting preventive action; enhancing social consensus on difficult trade-offs to be made in the face of resource constraints; and exposing issues that had been neglected.

Since the UNDP's publication of the Human Development Reports, in 1990, where a number of composite indices were presented e.g. the Human Development Index (HDI), the HPI, the GDI, and GEM – many human rights and democratic development indicators have been developed using both quantitative and qualitative measures. This dual approach has allowed the indicators to benefit from available statistical data as well as collected data on public beliefs and perceptions.

In 1996, the Organization for Economic Cooperation and Development (OECD) discussed the practicability of the introduction of confidence indicators as a means of evaluating trends and behaviours in the field. It had a goal of enabling the study of perceptions of actions and initiatives taken with regard to human rights and development.

Other centres have also been working on a large number of indicators, yet not without some degree of controversy: United States Agency for International Development (USAID), Freedom House (FH), International Centre for Human Rights and Democratic Development (ICHRDD), Norwegian Agency for Development Cooperation (NORAD), and International Institute for Democracy and Electoral Assistance (International IDEA).

### 2.4. Violence and Socio-economic Development

Patterns of violence are so complex in nature that to understand how and why some countries suffer more violence than others, we need to examine the relationship between violence and socio-economic inequality and development from a structural perspective. It is a given that violence and socio-economic inequality affects us all directly or indirectly, however how they interact is somewhat unclear.

Generally it is believed that violence and socio-economic inequalities are positively correlated e.g. countries with *higher* levels of inequality experience *higher* levels of violence both state and non-state. Or in other words, the higher the inequality, the greater likelihood or probability of violence. Empirically, we can test whether or not violence can be explained by inequality and how strong the relationship between violence and socio-economic inequality is, without actually entering a discussion of cause and effect or adopting more complex regression (multivariable) statistical techniques. Much literature on violence and inequality usually centres around the discussion of the impact of inequality on violence, however it is methodologically unwarranted, within the scope of this research, to make causal inferences nor is it methodologically warranted to investigate the impact of violence on socio-economic inequality given that the focus of this study is recent violence data and comprehensive socio-economic data in series and years up to 2004 is not available yet. Rather, through the use of basic correlation techniques, we can illustrate that there is some effect in a predicted direction, that is the link between violence and socio-economic inequalities can be measured and total evidence can test, support and is compatible with the theory that there is a significant relationship between inequality and violence.

## 3. Methodology - how do you measure violence and socio-economic inequalities?

1) *Analysis at the Macro Level (Correlations)*

This first component of the analysis of correlations will focus on macro level data concerning violence and socio-economic inequality and development. Firstly, using trend data (averages) from 1998 to 2000, violence data (table 1) will be correlated against socio-economic variables (table 2) for an earlier period (averages from 1997 to 1999). The justification for using ‘older’ socio-economic data or in statistical terms ‘lagged’ socio-economic variables is two-fold. From a statistical point of view this lag avoids what is called auto-correlation, which is when unplanned correlations occur between two values of the same variable at different years. Lagging is used to detect non-randomness

in data and make our findings more robust. The exact number of years for which to lag data is arbitrary, though the lag chosen for this exercise was set based on whether or not meaningful results (robust correlations) could be achieved. A lag of 1 year for socio-economic data (data was collected and compiled from 1997) produced some good results in preliminary correlation trials and thus was adopted. From a theoretical point of view, this lag is used to support the notion that socio-economic variables have a lagged (delayed) effect upon the level of violence.

2) *Analysis at the Micro Level (for Argentina and South Africa)*

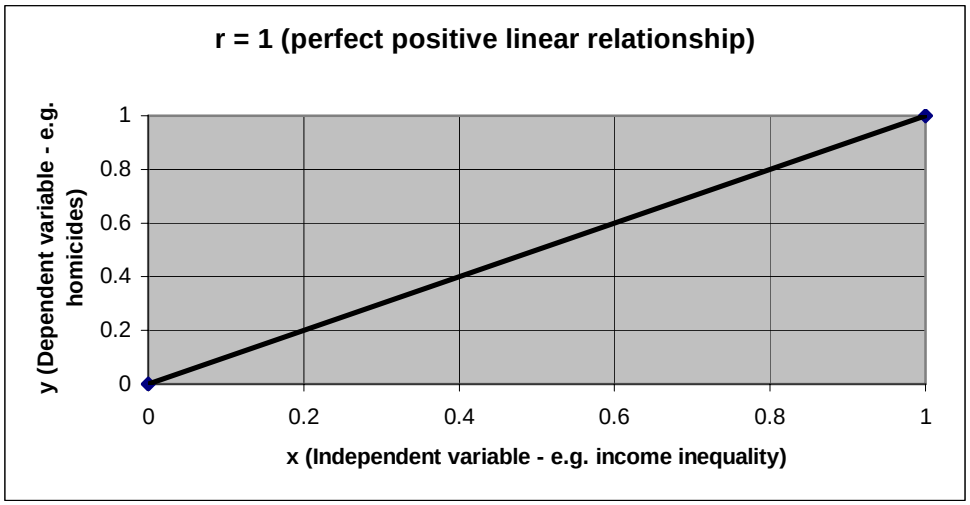
This is the second component of this exercise where data derived from the PSS provides the socio-economic profile of victims by categories of sex, age, ethnicity, educational attainment, region and occupation/status. For example, once the socio-economic profile (typology) of the victim has been revealed, then it is possible to demonstrate that violence in terms of frequency and type varies according to a number of socio-economic factors. Results are presented in graphical form following the correlations section ('Analysis at the Macro Level'). This information is available for Argentina and South Africa only, and not for Egypt, Nepal or Uzbekistan.

### 3.1. Statistical Techniques

The correlation between two variables represents the degree to which variables are related or associated – a quantitative functional relationship that measures the strength of association between two variables. "The more the x, the more the y" represents a positive correlation and "the more of x and the less of y", is a negative correlation.

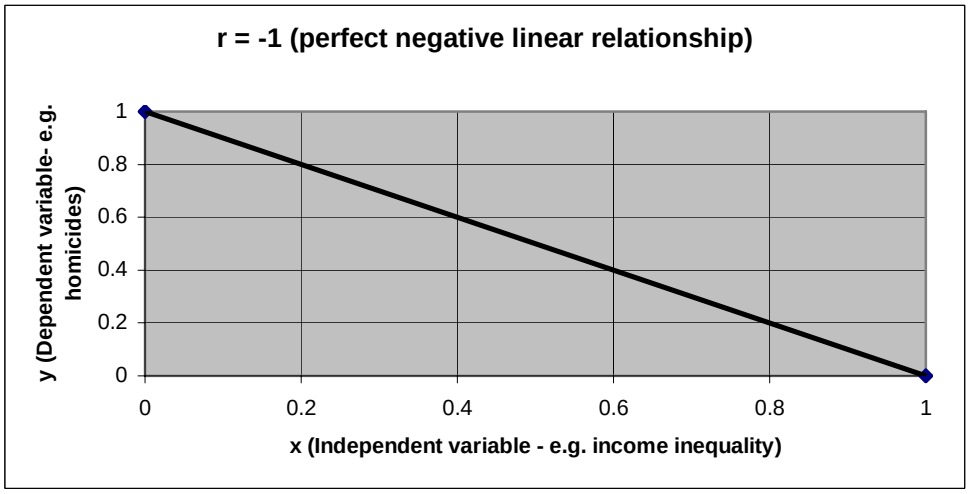
A numerical measure of correlation (called a coefficient 'r') between two variables is a measure of how closely one variable is proportional to the other. The values range from –1 to +1. A value of 0 means the two variables are entirely unrelated (random relationship) and this can be visualised as a scatter plot with data points put all over the graph at random with no line of best fit achievable. A value of +1 means that one of the variables is perfectly proportional to the other (perfect linear relationship – figure 1), and vice versa, and that an increase of one variable corresponds to an increase of the other. A value of -1 (perfect negative linear relationship – figure 2) means the same except that it means an increase of one corresponds to a decrease of the other.

**Figure 1. Perfect positive linear relationship**




For instance, statistical studies can show that increased levels of economic development are either associated with democracy or are caused by democracy.[13] These results show that as "economic development" increases, so does the tendency toward more "democratic" political life.[14] Statistics analysis helps to show the existence of a linear trend, i.e. as one variable increases, the other does at a constant rate and ratio. This does not mean that they both increase by exactly the same amount, only that any increase in one factor is met with the same proportional increase in the other, at any point in time and relative to any situation.

**Figure 2. Perfect negative linear relationship**




[13] Todd Landman, "Economic Development and Democracy: the View from Latin America," *Political Studies* (1999), XLVII, 607-626.

[14] One of the pitfalls of statistical analysis involving correlations is that correlation is often confused with causation. If one variable increases when the other does, the first is not necessarily causing the second to increase, or vice versa. There most likely exists a relationship between the two variables, but simple statistics cannot often provide evidence of a causality linking the two.

Jacob Cohen has written considerably on this topic, suggesting a little ambiguously, that a correlation of 0.5 is large, 0.3 is moderate, and 0.1 is small[15]. The usual interpretation of this statement is that anything greater than 0.5 is large, 0.5-0.3 is moderate, 0.3-0.1 is small, and anything smaller than 0.1 is insubstantial, trivial, or otherwise not worth worrying about.

It is important to keep in mind that correlation does not necessarily mean causation. Of course, since correlation is bidirectional, $r^2$ is also the percent of the dependent accounted for by the independent. That is, the researcher must posit the direction of causation, if any, based on considerations external to correlation, which, in itself, cannot demonstrate causality but can infer it.

**Table 3. Interpreting the size of correlation coefficients:**

| | |
|---|---|
| R = 0.5+ | Large |
| R = 0.5 – 0.3 | Moderate |
| R = 0.3 – 0.1 | Small |
| R = <0.1 | Insubstantial, negligible |

Four aspects of statistical relationships:

1) Existence – if no relationship between two variables is said to exist then the other three aspects are irrelevant.
2) Direction – positive or negative.
3) Strength – determined by size and significance of coefficients.
4) Nature – how does the knowledge of a relationship between two variables help us understand and predict outcomes of the dependent variable (violence).

Before employing correlation techniques, preliminary scatter plots will be constructed where violence data for each country is plotted on a vertical scale ('y' axis) and then socio-economic data for the corresponding country is fed on a horizontal axis ('x' axis). Scatter plots enable one to see if there is a linear relationship and how strong the relationship is between violence and socio-economic variables. The vertical scale represents one measurement (conventionally, the dependent variable) and the horizontal the other (independent variable). Once scatter plots have been carried out and basic observations are made, then one is able to progress onto bivariate/two variable correlations between violence and socio-economic variables using SPSS (Statistical Package for the Social Sciences) [16].

[15] Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). New Jersey: Lawrence Erlbaum.

[16] The correlation calculation (for a population sample) returns the covariance of two variables divided by the product of their standard deviations:

$$\text{Population } x,y = \frac{\text{covariance } (x,y)}{\text{standard deviation of } x * \text{standard deviation of } y}$$

One can then analyse these correlations for positive, negative or absence of relationship at 1% and 5% levels of significance (level of significance is denoted by an asterix beneath correlation matrixes). It is possible to have a correlation coefficient ('r') that is statistically significant (at 1% or 5% significance) **and** weak. In plain words, no or very weak relationship (coefficient = <0.1) between two variables can be important for our analysis and conversely, strong correlation coefficients (0.5+) also signal validity in a relationship between two variables.

1% and 5% levels of significance or in statistical terms 'P values', represent probability - the maximum probability (possibility) that the seeming relationship between a variable (e.g. homicide rate) and a possibly predictive variable (e.g. income inequality) could be just a result of chance. That is, it is the maximum possible probability that there is **not** a true relationship between the two variables. If p = 0.01 (1%), for example, there is only one chance in a hundred that there is not a true relationship (correlation) between the two variables. Low values of "p" are therefore desirable, and 5% is typically considered the maximum acceptable as an indication of statistical significance (validity). For example, if the level of significance is 5%, then any result with a p value of less than 0.05 is significant. A value of 0.05 (5%) means the associated finding is significant at the 95 percent level of confidence, or that one can be 95 percent confident that the finding is true.

**Matrix 1. Violence Variables Correlation Matrix**

| | Homicide rate | Homicide rate with firearm | Major assaults rate | Political Terror Scale | Torture scale | CPR | CPI 2003 | Incarceration rate | Rule of law index |
|---|---|---|---|---|---|---|---|---|---|
| Homicide rate | 1 | .89** | .48** | 0.36** | .25 | -.04 | -.27* | .22 | -.36** |
| Homicide rate with firearm | .89** | 1 | .66** | 0.27 | .20 | -.06 | -.21 | .25 | -.24 |
| Major assaults rate | .48** | .66** | 1 | 0.44** | .10* | -.20 | -.02 | .35* | -.01 |
| Political Terror Scale | 0.36** | 0.27 | 0.44** | 1 | 0.72** | 0.67** | -0.39** | 0.48** | -0.42** |
| Torture scale | .13 | .12 | .31* | 0.72** | 1 | .69** | -.43** | .59* | -.44* |
| CPR | -.04 | -.06 | -.20 | 0.67** | .69** | 1 | -.51** | -.13 | -.64** |
| CPI 2003 | -.27* | -.21 | -.02 | -0.39** | -.65** | -.51** | 1 | -.19 | .94** |
| Incarceration rate | .22 | .25 | .35* | 0.48** | .34* | -.13 | -.19 | 1 | -.30* |
| Rule of law index | -.36** | -.24 | -.01 | -0.42** | -.71** | -.64** | .94** | -.30* | 1 |

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

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The coefficient 'r' is often reported in terms of its square ($r^2$), which is called the coefficient of determination, interpreted as a percent of variance (the squared mean of standard deviations) in the dependent variable explained by the independent. For instance, if $r^2$ is .25, then the independent variable (e.g. socio-economic variable) is said to explain 25% of the variance in the dependent variable (e.g. violence). Standard deviations are a measure of dispersion from the mean of a population sample.

The matrix above illustrates the strength of relationships and reveals some interesting facts about the variables. The homicide rates above are weakly correlated with other 'rate' data derived from the latest UN World Crime Survey e.g. major assaults, incarceration etc. However, generally speaking, these other 'rates' are highly correlated with one another and highly correlated with indexes or scales, which are partly based on human rights expert evaluations. Many are falsely led to believe that correlation implies interchangeability of variables, in other words, if one violence variable is highly correlated with another violence variable then it is deemed reliable and therefore safe to use in further correlations with, for example, socio-economic inequality variables. The assumption that if measures are highly correlated with each other, then findings don't depend on the particular measure is a common pitfall of correlation exercises. The variables above are not substitutes for one another but complements. Before moving onto results and analysis, it is important to look at the correlation matrix above as it gives the reader a feel for which violence variables exert a strong or weak relationship with each other, and space for interpretation or alternative conception based on one's understanding.

## 4. Results and Analysis

### 4.1. Analysis at the Macro Level (Correlations)

#### *a) Non-state violence*

The following analysis is conducted for 63 countries, depending on data availability[17]. Concerning the 'violence' variables, the United Kingdom excludes Scotland and Northern Ireland whereas for socio-economic variables, they are included. England and Wales carry out separate crime surveys to Scotland and Northern Ireland, and hence exclude victims of terrorist violence in Northern Ireland. The five countries of special interest, Argentina, Egypt, Nepal, South Africa and Uzbekistan are highlighted when possible. Unfortunately, as already mentioned, due to the lack of time series data for Egypt and Nepal, these countries do not feature in our correlations.

Each of the following matrixes illustrate significant correlations (with varying strengths) and some interesting insignificant correlations between one 'violence' variable and 'socio-economic' variables.

**Matrix 2. Homicides and socio-economic correlations**

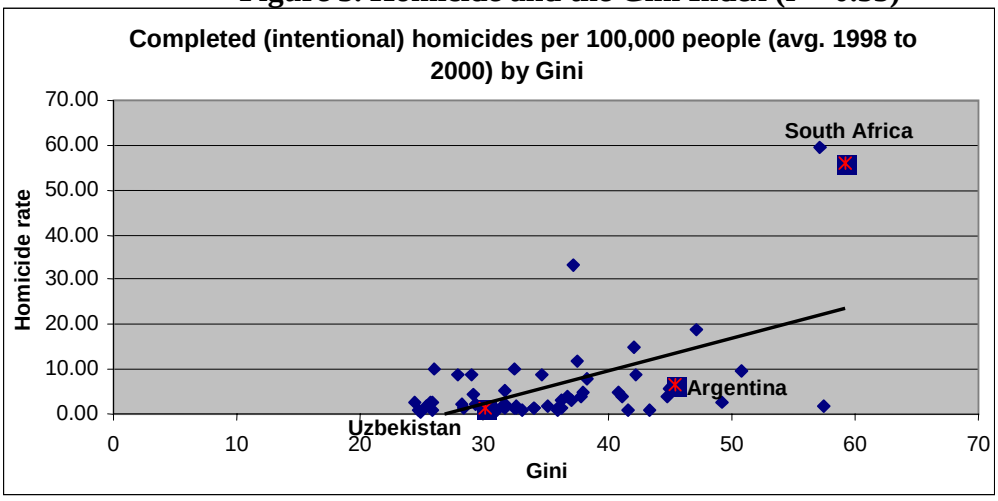
| | Homicides |
|---|---|
| Completed intentional homicides average of 1998-2000 rate per 100,000 popn | 1 |
| Life exp at birth (total) average 1997-1999 | -0.28* |
| Gini index (average HDR 2001 and HDR 2003) | 0.53** |
| Population density (average 1997-1999) | -0.09 |
| Male population aged 15-29 as % of total | 0.32* |

[17] See Appendix A for the complete list of countries.

| | |
|---|---|
| Average 1997-1999 GDP per capita constant (1995 US$) | -0.30* |
| Newspapers per 1000 popn (average 1995-1997) | -0.27* |
| Unemployment rate total (average 1997-1999) | 0.33* |
| Youth unemployment male (average 1997-1999) | 0.41** |
| Income security index IFP/SES | -0.41** |
| Income share of richest 10% to poorest 10% (HDR 2003) | 0.68** |
| Income share of richest 20% to poorest 20% (HDR 2003) | 0.64** |
| Economic Freedom Index | -0.28* |
| Index of Democracy (Tatu) average 1997-1999 | -0.30* |
| | |
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

The matrix above shows all significant correlations at 1 or 5%, between completed intentional homicides and socio-economic variables listed in table 2. The following matrixes follow the same format.

**Figure 3. Homicide and the Gini Index (r = 0.53)**




Note: The Gini index measures inequality over the entire distribution of income or consumption. A value of 0 represents perfect equality, and a value of 100 perfect inequality.

This scatter plot offers us a visual insight into the relationship of these important variables. One can see that the slight gradient of the trendline above illustrates a positive relationship between homicide rates and the Gini in 58 countries. A correlation coefficient of 0.53 significant at 1% suggests that it is safe to say that homicides and the Gini index are positively related and the relationship is strong. The greater the income gap as measured by the Gini, the greater the number of homicides. This is clear to see in the case of South Africa, which has the worst income inequality and the highest level of homicides. South Africa is an outlier in this scatter plot and other scatter plots to follow, but remains very important as outliers (South Africa) drive many of the relationships found in the correlations, hence justifying its inclusion.

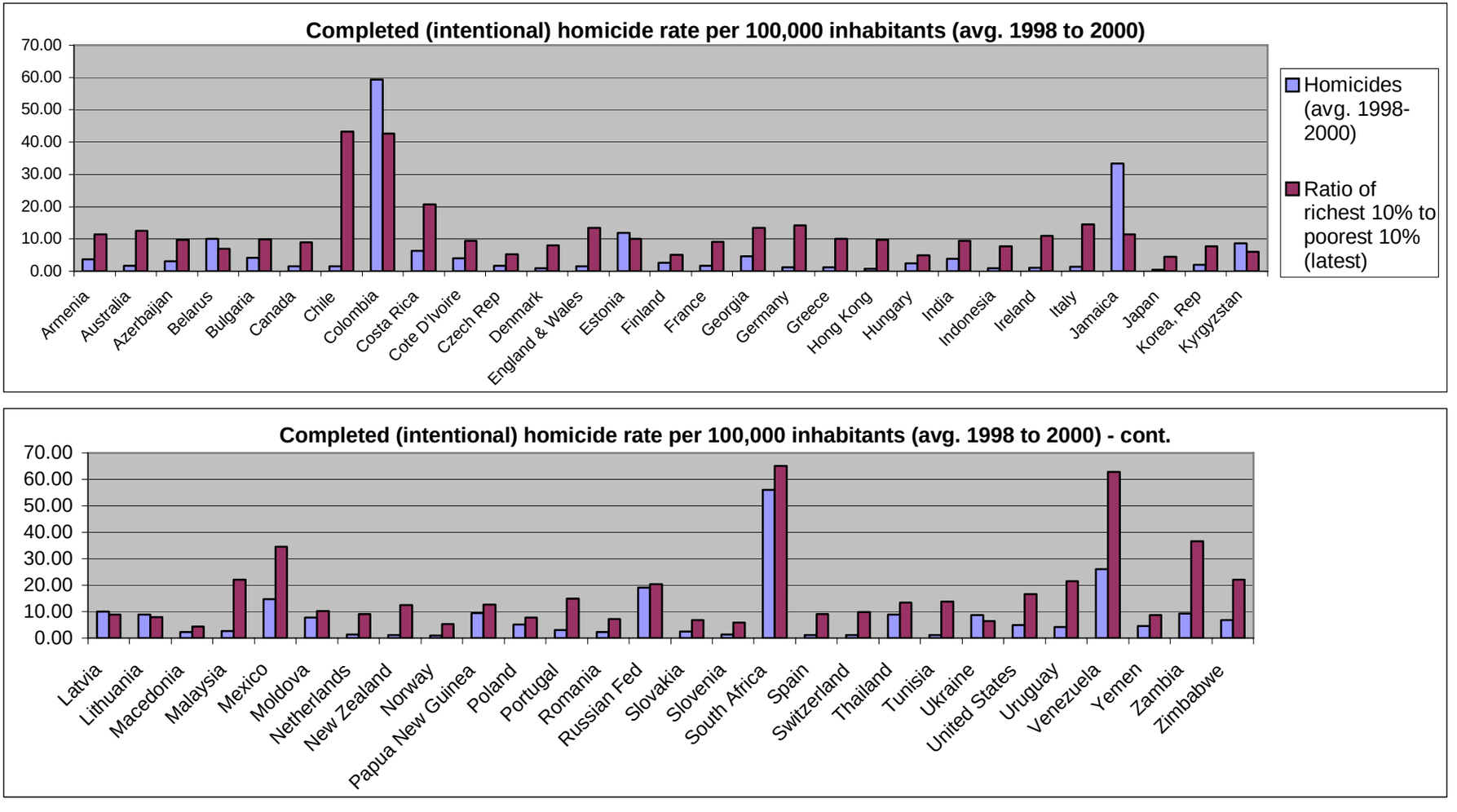
Remaining on the topic of income distribution, we employ another inequality measure, the ratio of a country's richest 10% and poorest 10% expressed as a percentage and

correlate this against homicides. When correlating completed (intentional) homicides with the ratio of the richest 10% and poorest 10% in 56 countries, an interesting relationship can be seen. A correlation coefficient of 0.68 emerges and the line of best fit approaches a 45 angle, representing a significant positive relationship between the two variables. This is best represented graphically using the bar chart below, which shows the movement of intentional homicide rates with the Gini across many countries.

It is clear below that both homicides and the ratio of the richest 10% to poorest 10% in these countries share a strong positive relationship and the probability that this is just a matter of coincidence is only 1%. The greater the inequality in income distribution, the greater the number of homicides in a country. In addition to this, the relationship between homicides and income ratio of the richest 20% to poorest 20% is also strong at 0.64 as seen above in the matrix. We cannot prove that income inequality causes a violent act such as torture, yet we can disprove that there is **no** significant relationship between the two, and we can claim that income inequality explains, to some degree, the existence of homicides. The findings here reinforce a recent global study, which showed income inequality to be an important determinant of national homicide rates, showing how the effect of income inequality on criminal activities depends on socio-economic status, with the poor being more responsive than the rich[18].

[18] Fajnzylber, P., Lederman, D. and Loayza, N. (1998). *What causes violent crime?* World Bank First Version http://econ.worldbank.org/files/15756_FajnzylberetalCrimeCauses.PDF

**Figure 4. Homicides and income ratio of richest 10% to poorest 10% (r = 0.68)**



After income inequality, youth (male) unemployment rate is the next strongest correlate of homicides exerting a moderate strength positive relationship (0.41 coefficient). Generally speaking, the higher the youth (male) unemployment rate, the higher the homicides. This can suggest many things, perhaps homicides are more prevalent where there are less job opportunities for young males. This finding is in accordance with numerous studies on violence (especially urban violence), showing that violence is often higher in areas that combine high unemployment and a high percentage of young males amongst the population. Male youth are often cited as the primary culprits of violence, where violence is worse in areas of socio-economic decay as a result of high unemployment[19]. This is affirmed by the moderate positive relationship exerted between male population aged 15-29 and homicides (0.32) which implies that alone, as a demographic variable, males aged 15-29 influence homicides, i.e. the higher the percentage of males in a country's population, the higher the rate of homicides.

The matrix also shows that the Income Security Index (ISI) developed by the ILO is moderately, negatively correlated with homicides. From our previous analysis of the relationship between homicides and Gini and income ratios, one would expect high homicide rates to be associated with low income security or conversely, low homicide rates to be associated with high income security.

Homicides and population density lie among the weakest and most insignificant relationships as seen in the matrix (-0.09). This finding implies that this demographic variable does not influence the level of homicides.

**Matrix 3. Homicides (with firearm) and socio-economic correlations**

| | Homicides (Firearm) |
|---|---|
| Completed intentional homicides with firearm avg. 1998-2000 rate per 100,000 popn | 1 |
| Life exp at birth (total) average 1997-1999 | -0.47** |
| Gini index (average HDR 2001 and HDR 2003) | 0.57** |
| Population density average 1997-1999 | -0.35* |
| Population growth (average 1997-1999) | 0.41* |
| Male population aged 15-29 as % of total | 0.43** |
| Electric power consumption (kwh) per capita (average 1997-1999) | 0.17 |
| GDP constant 1995 US$ average 1997-1999 | 0.05 |
| Military exp as % of GDP (average 1997-1999) | 0.06 |
| Infant mortality rate (average 1997-1999) | 0.48** |
| Physicians per 1000 popn (average 1997-1999) | -0.40* |
| Youth unemployment male (average 1997-1999) | 0.46* |
| Improved water source (% popn with access) 2000 | -0.59** |
| Gender development index HDR 2003 | -0.34* |
| Income security index IFP/SES | -0.46** |
| Income share of richest 10% to poorest 10% (HDR 2003) | 0.75** |
| Income share of richest 20% to poorest 20% (HDR 2003) | 0.74** |

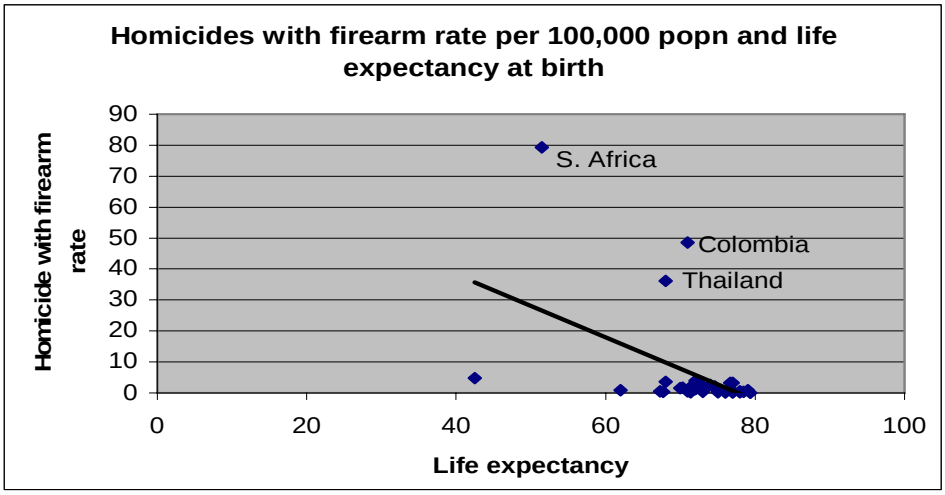
[19] Gurr, T.R. (1970). *Why Men Rebel*. Princeton: Princeton University Press. Moser, C. & Winton, A. (2002) *Violence in the Central American Region: Towards an Integrated Framework for Violence Reduction*. London: ODI Working Paper 171.

| | |
|---|---|
| Social security exp IMF (average 1995-1999) | -0.34* |
| Index of Democracy (Tatu) average 1997-1999 | -0.35* |
| | |
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

The first and second matrix show that total homicides and homicides with firearms exert a strong positive relationship with the Gini and a very strong positive relationship with the ratio of the richest 10%/20% and poorest 10%/20% (with coefficients around 0.75), suggesting that the greater the income inequality, the greater the homicides. A moderate negative relationship between homicides with firearm and the Income Security Index also gives support to this claim.

As with total homicides, the percent of males aged 15-29 in the total population is also moderately (positively) correlated with homicides with the use of a firearm (0.42), reinforcing the suggestion that young male population figures influence total homicides, and homicides with firearms. Although just under our threshold value for qualifying as a strong coefficient, the correlation coefficient for homicides with the use of a firearm and life expectancy at birth is another demographic variable, which begs further analysis. Close examination of raw figures for homicides with firearms show that three countries stand out (are outliers) e.g. Colombia, South Africa and Thailand with average homicides with firearms at 48.51, 79.22 and 36.15 from 1998 to 2000, respectively. Once these countries have been removed from the correlations then the coefficient between homicides with firearms and life expectancy increases to –0.51 (at 1%), which qualifies it as a strong, correlate of homicides with firearms.

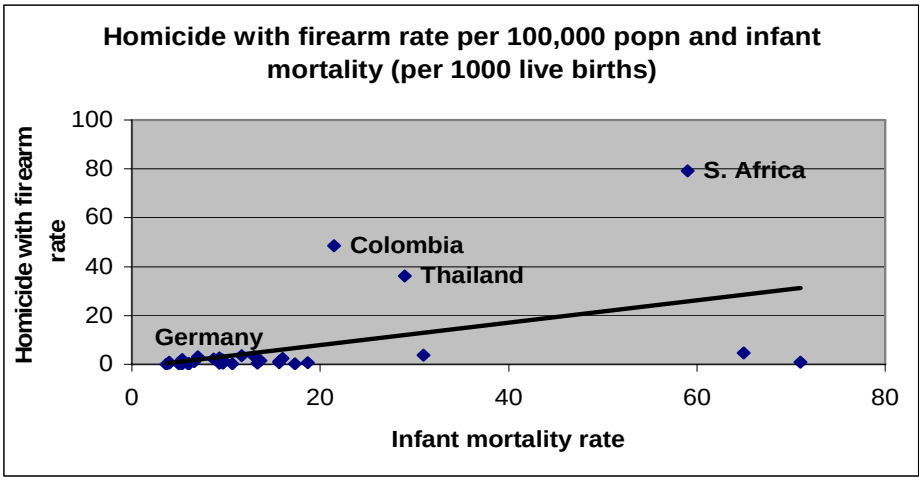
**Figure 5. Homicides with firearm and life expectancy (r = -0.47)**




However unlike total homicides, homicides with firearms exert a moderate positive relationship with demographic variables such as population density and growth and exert virtually no relationship with what is usually referred to as 'industrialisation' variables. Variables such as GDP, electricity consumption per capita are considered as proxies for industrialisation, reflecting the level of development of a nation. Therefore based on these observations, one may say that homicides are neither higher nor lower in more or

less developed countries. However, firstly, there is a moderate positive relationship (0.48) between homicide with firearms and infant mortality per 1000 live births, which is interesting given that infant mortality also reveals the level of development of a country (e.g. inadequate basic health practices such as universal vaccinations and control of diarrhoea). The trendline below illustrates that higher infant mortality is associated with higher homicides. Even the outliers in terms of homicide with firearm e.g. Colombia, Thailand and South Africa, have above average infant mortality rate, which is 19 (Germany as an industrialised nation is highlighted as a comparator).

**Figure 6. Homicide with firearm and infant mortality (r = 0.48)**




Secondly, the strongest negative relationship is seen between homicides with firearms and improved water sources (% of population with access) with a coefficient of –0.59. It seems that the lower the population with access to improved water sources, the greater the homicides. Improved water sources alone can hardly explain homicides in a country, yet as a basic necessity, it can reflect/proxy the bigger picture of economic development of a country, or more importantly the relative level of development between countries. Therefore economic inequality is seen as a powerful variable in explaining the existence of violent crime such as homicides with the use of a firearm.

A socio-economic variable that exerts virtually no relationship with homicides with firearm, is military expenditure as percent of GDP. It seems that a country's level of spending on arms reveals virtually nothing about the existence of violent crime with a firearm.

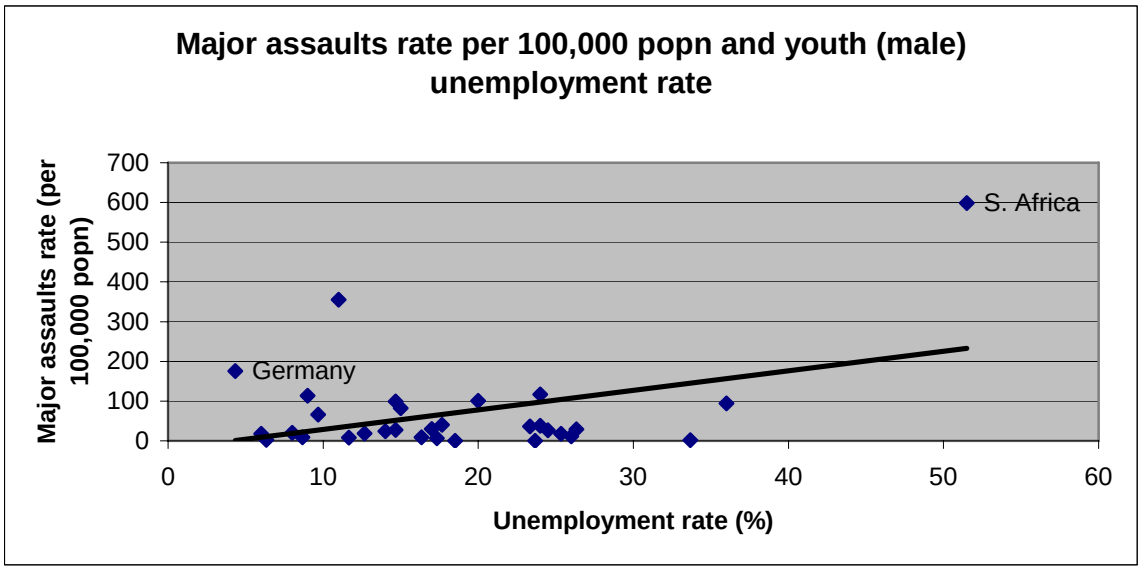
**Matrix 4. Major assaults and socio-economic correlations**

| | Assaults |
|---|---|
| Major assaults rate (average) per 100,000 popn | 1 |
| Life exp at birth (total) average 1997-1999 | -0.37* |
| Male population aged 15-29 as % of total | 0.35* |
| Gini index (average HDR 2001 and HDR 2003) | 0.46** |
| Urban popn (average 1997-1999) | 0.006 |
| % Employment in services (average 1997-1999) | 0.34* |

| | |
|---|---|
| Improved water source (% popn with access) 2000 | -0.02 |
| Infant mortality rate (average 1997-1999) | 0.33* |
| Youth unemployment male (average 1997-1999) | 0.41* |
| Income share of richest 10% to poorest 10% (HDR 2003) | 0.57** |
| Income share of richest 20% to poorest 20% (HDR 2003) | 0.59** |
| | |
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

Major assaults rate exerts virtually no relationship with the demographic variables such as population density and urban population, and no relationship with variables that reflect level of economic development such as GDP, energy consumption, access to water etc. Again, like the two previous violence variables, major assaults is highly correlated with income inequality as measured by the Gini (coefficient of 0.46) and the ratio of richest 10%/20% to poorest 10%/20% with strong positive coefficients of 0.57 and 0.59 respectively. Therefore the higher the income inequality, the higher the level of major assaults rate. Apart from income inequality measures, the strongest positive relationship as seen in the matrix is between major assaults and youth unemployment amongst males (0.41) with South Africa at one extreme:

**Figure 7. Major assaults and youth (male) unemployment (r = 0.41)**




This relates back to what was said earlier with regards to homicides and youth male unemployment. A coefficient of 0.41 between major assaults and youth male unemployment shows a moderate positive relationship, affirming that violent crime is more prevalent where there are less job opportunities for young males. Studies on inequality and violence point to the fact that violence is more often than not, higher in areas that combine high unemployment and a high percentage of young males amongst

the population[20]. Supporting this belief is the coefficient between male population aged 15-29 as a percent of total population and major assaults, which is moderate in strength (0.35) but significant nonetheless.

### *b) State violence*

**Matrix 5. Political Terror scale and socio-economic correlations**

| | Political terror scale |
|---|---|
| Political terror scale (average 1998-2000) | 1 |
| Life exp at birth (total) average 1997-1999 | -0.28* |
| Male population aged 15-29 | 0.32* |
| Gini index (average HDR 2001 and HDR 2003) | 0.33* |
| Average 1997-1999 GDP per capita constant (1995 US$) | -0.29* |
| Urban popn growth (average 1997-1999) | 0.27* |
| Newspapers per 1000 popn (average 1995-1997) | -0.38** |
| Male illiteracy rate (average 1997-1999) | 0.33* |
| Infant mortality rate (average 1997-1999) | 0.30* |
| GDP constant 1995 US$ (average 1997-1999) | -0.001 |
| Ratio of girls to boys in prim and sec edu (average 1997-1999) | -0.33* |
| Gender development index HDR 2003 | -0.33* |
| Income security index IFP/SES | -0.45** |
| Social security exp IMF (average 1995-1999) | -0.34* |
| Economic Freedom Index | -0.29* |
| Index of Democracy (Tatu) average 1997-1999 | -0.50** |
| | |
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

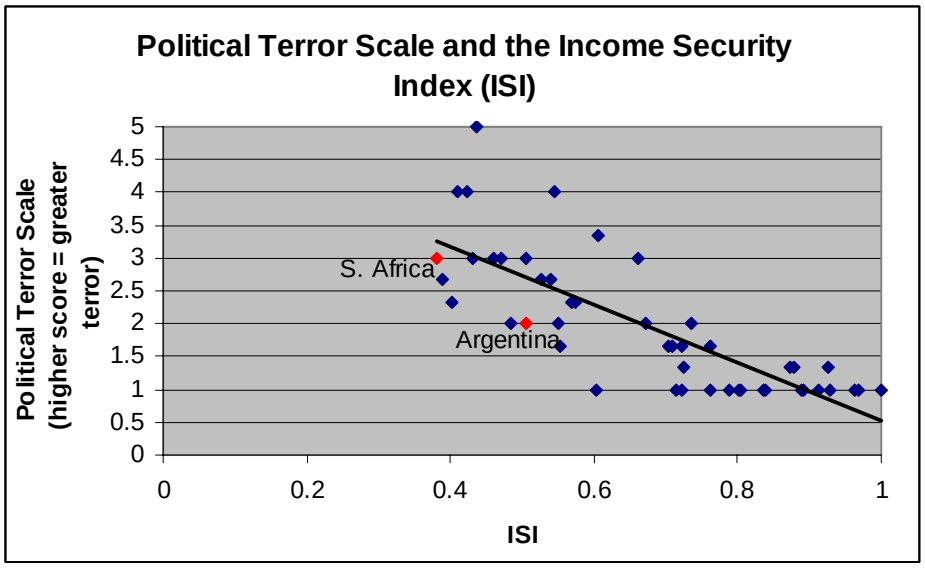
The strongest correlate of the Political Terror Scale is Vanhanen's Index of Democracy (-0.50). This is likely given that one would expect a more democratic a country to have lower political terror rating. However the Political Terror Scale exerts some less obvious results. The extremely low coefficient between GDP and Political Terror Scale suggests that the wealth of a nation tells us virtually nothing about the use of terror tactics by a state. Affirming this, is the fact that coefficients between the Political Terror Scale and the usual proxies for development such electricity consumption per capita, employment in services etc. are not significant (neither at 1% nor 5%).

However the level and equity of wealth, measured by GDP per capita (-0.29) and the Income Security Index (-0.45) respectively, do exert significant negative relationships with the Political Terror Scale, that is, the lower the GDP per capita and income security amongst a given population, the greater the incidence of political terror. Therefore even

[20] Gurr, T.R. (1970). *Why Men Rebel*. Princeton: Princeton University Press. Fleisher, B. (1966). "The Effect of Income on Delinquency". *American Economic Review* 56: 118-137. Moser, C. & Winton, A. (2002) *Violence in the Central American Region: Towards an Integrated Framework for Violence Reduction*. London: ODI Working Paper 171.

if the wealth of a country does not influence political terror, the wealth and equity of a country's populace are explanatory variables of political terror.

**Figure 8. Political Terror Scale and Income Security Index (r = -0.45)**



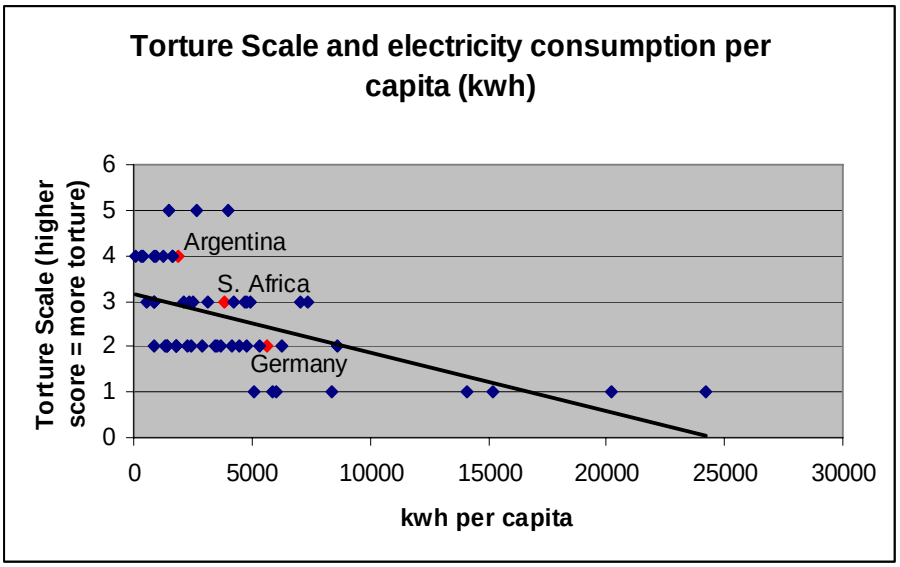

**Matrix 6. Torture scale and socio-economic correlations**

| | Torture scale |
|---|---|
| Torture scale | 1 |
| Life expectancy at birth (total) average 1997-1999 | -0.40* |
| Male population aged 15-29 as % of total | 0.44** |
| Gini index (average HDR 2001 and HDR 2003) | 0.30* |
| Average 1997-1999 GDP per capita constant (1995 US$) | -0.50** |
| Newspapers per 1000 popn (average 1995-1997) | -0.45* |
| Electric power consumption kwh per capita (average 1997-1999) | -0.55* |
| Improved sanitation (% popn with access) 2000 | -0.59** |
| Labour force (% children) average 1997-1999 | 0.30* |
| Military exp % GDP average 1997-1999 | 0.26* |
| Infant mortality rate (average 1997-1999) | 0.42* |
| Health expenditure % GDP (average 1997-1999) | -0.56** |
| Improved water source (% popn with access) 2000 | -0.33* |
| Public spending on education (% GDP ) average 1997-1999 | -0.38** |
| Ratio of girls to boys in prim and sec edu (average 1997-1999) | -0.40* |
| Gender development index HDR 2003 | -0.53* |
| Gender Empowerment Measure HDR 2003 | -0.68* |
| Income security index IFP/SES | -0.69** |
| Social security exp IMF (average 1995-1999) | -0.32* |
| Economic Freedom Index | -0.57** |
| Index of Democracy (Tatu) average 1997-1999 | -0.55** |
| | |

| | |
|---|---|
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

Based on the findings above there seem to many predictors of torture as a form of state violence around the world. The correlations suggest that torture in a country is highly correlated with proxy indicators of industrialisation and economic wealth, e.g. GDP per capita (-0.50), electric power consumption (-0.55), improved sanitation (-0.59) and health expenditure (-0.56). The lower the GDP per capita, electricity consumption and access to improved sanitation, the higher the Torture Scale (more torture).

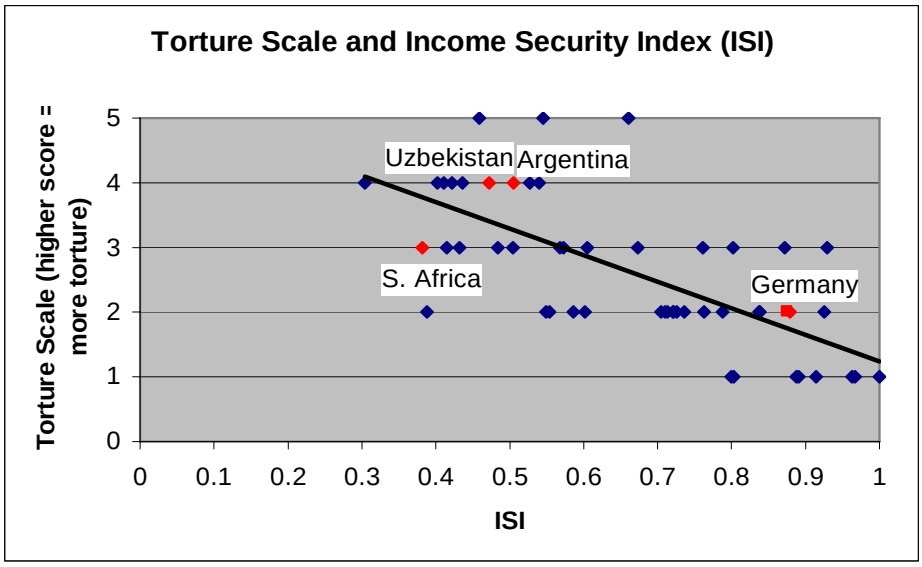
**Figure 9. Torture Scale and electricity consumption (r = -0.55)**




The trend is clear with Germany, South Africa, Argentina and Uzbekistan lying almost exactly on the trendline and with every increase in the Torture Scale, the electricity consumption falls. The level of development is thus a strong predictor of torture.

The strongest relationship uncovered by the correlations is between income security as measured by the Income Security Index (ISI). A negative coefficient of –0.69 is very strong, that is, the higher the income security, the greater the torture in a country (denoted by a lower score on the Torture Scale). The trendline shows this relationship adequately, with Germany representing an industrialised nation with a low Torture Scale and high income security and at the other end of the scale is Uzbekistan with a high torture rating and low income security score.

**Figure 10. Torture Scale and income security (r = -0.69)**



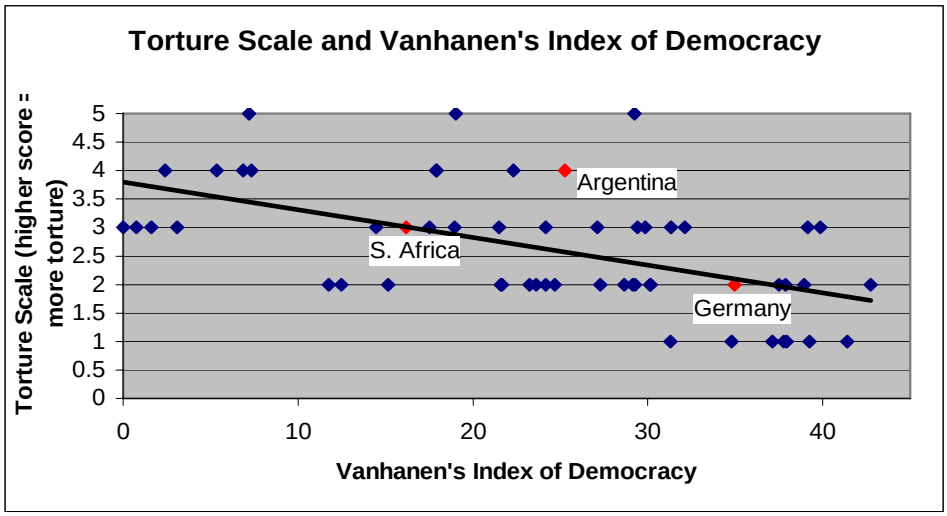

Another interesting correlate of the Torture Scale is Vanhanen's Index of Democracy. Vanhanen's index uses objective criteria to rank states' democratic status and uses a formula to calculate democracy[21]. Vanhanen's index and Hathaway's Torture Scale are negatively (moderate) related, that is, the higher the Index of Democracy (the more democratic a country is), the lower the Torture Scale (less torture in a country) and the less democratic a country is, the more torture there is. Generally this conforms to what we would expect, less democracy implying greater potential for torture. Comparison of Germany, South Africa and Argentina on the scatter plot below is highly illustrative of this relationship. A coefficient of –0.4 would suggest that differences in democracy as a socio-economic variable/index can be used as a predictor of torture (to a moderate degree) in numerous countries.

[21] Index of Democracy = (competition x participation) / 100

Competition is calculated by subtracting the percentage of the votes won by the largest party from 100; in other words, it is the percentage of votes won by non-winning parties using the most important type of national elections in a given regime.

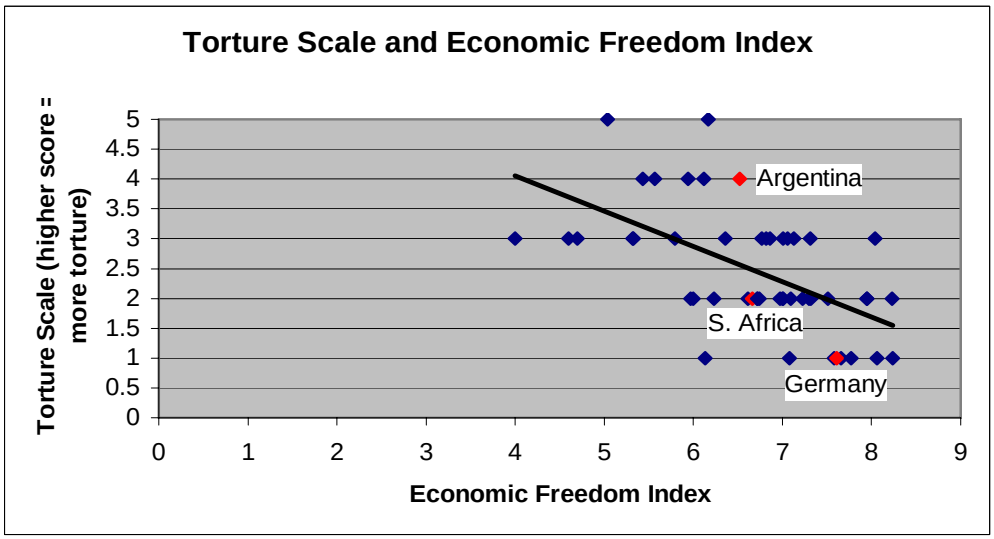
Participation is the percentage of the total population that actually voted (voter turnout). (The problem with such a measure, however, is the idea that turnout is considered to be one measure on the democratic scale. In fact, many countries that are fully democratic by other criteria but have a low voting turnout rank low in Vanhanen's rank of democracy. The United States, for example, is a democracy that ranks relatively low in this measure simply because of its low voter turnout).

**Figure 11. Torture Scale and Vanhanen's index of democracy (r = -0.55)**




Since Vanhanen's index is a measure of political freedom, we want to test the relationship between the Torture Scale and economic freedom, thus we employ the Economic Freedom of the World Index created by the Frasier Institute. Like other composite indexes, this index is generated by feeding many smaller variables (economic) into it. The relationship between the two is illustrated below:

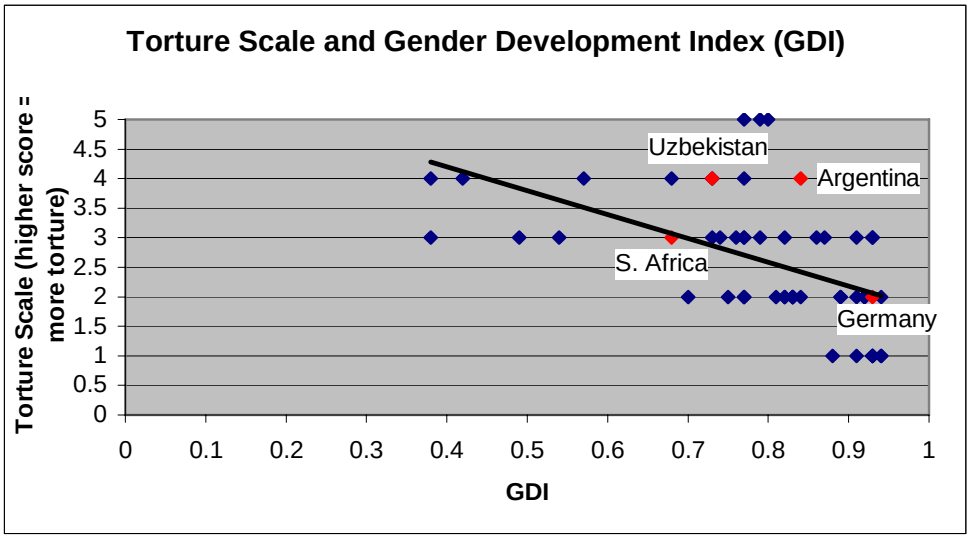
**Figure 12. Torture Scale and the Economic Freedom of the World Index (r = -0.57)**




One can observe from the trendline and exemplary countries, that the higher the economic freedom as measured by the index, the lower the Torture Scale (lower torture). This is another very strong negative correlate of the Torture Scale (-0.57) and economic freedom is a reliable predictor of Torture. Moving onto more gender sensitive measures, the Torture Scale is found to be highly negatively correlated with the Gender Development Index (GDI) (-0.53) and the Gender Empowerment Measure (GEM) (–0.68), that is, the lower the political, economic and social development and equality of

women in a country, the higher the Torture Scale (more torture). The situation of women in society, politics and the economy is very telling of a state's inclination to use violence of this nature.

**Figure 13. Torture Scale and the Gender Development Index (r = -0.53)**




## Penal conditions

**Matrix 7. Incarceration rate and socio-economic correlations**

| | Incarceration |
|---|---|
| Incarceration rate per 100,000 inhabitants (average 1997-1999) | 1 |
| Average 1997-1999 GDP per capita constant (1995 US$) | -0.26* |
| % Population female (average 1997-1999) | 0.46** |
| Total Illiteracy rate (average 1997-1999) | -0.35* |
| Labour force (% female) average 1997-1999 | 0.30* |
| Youth unemployment male (average 1997-1999) | 0.34* |
| Gender Empowerment Measure HDR 2003 | -0.37* |
| | |
| *Correlation is significant at the 0.05 level (2-tailed). | |
| **Correlation is significant at the 0.01 level (2-tailed). | |

Incarceration or imprisonment is a very useful statistic, both conceptually and empirically. Figures on imprisonment are important to the study of violence since it is the most common universal sanction applied for serious offences, regardless of the type of legal system or level of development and those imprisoned are extremely vulnerable to state violence. Furthermore incarceration rates do not appear to be dependent on the amount of crime in the society. It is considered to be dependent on the willingness (how punishment hungry) and effectiveness/capacity of law enforcement. Incarceration rates represent 'Penal conditions', which will be used as a state violence variable for the analysis of correlations.

Correlating incarceration rates and socio-economic variables produced some unexpected and highly interesting relationships. Firstly, the moderate (almost qualifying as strong) positive relationship between incarceration and gender based measures, most notably percent of total population that is female. This variable by itself is not explanatory yet in combination with other variables it seems unlikely to be coincidence that the higher the incarceration rate, the higher the composition of female in the population, labour force and representation in government. Incarceration rate is the only violence variable to be correlated with total illiteracy rate and percent labour force that is female. It is also correlated with the Gender Empowerment Measure (GEM) devised by the UNDP and based on female representation in government, at managerial level and female earned income. Based on the observations above, the lower the illiteracy rate in countries, the higher the incarceration rate. This suggests that possibly the knock-on-effects of even basic (formal and informal) education can help prevent many to turn to crime. Unfortunately other measures of education can't support this claim however it still remains a significant relationship that literacy positively impacts on incarceration rates.

Another moderate but significant relationship is between percent females in labour force and incarceration rate. The higher the percent of females in the labour force, the higher the incarceration rate. Since female participation reflects the role of women in the economy, its affects the GDI and GEM directly. Basically all the gender-based measures are related and give a fuller picture of the state of women in countries' societies. There may be many reasons for this curious relationship between gender-based measures and incarceration rates, yet the role of education) is unmistakable, for instance, as evidenced by the matrix below labour force composition is related to female illiteracy rates:

**Matrix 8. Female labour force participation and female illiteracy rates**

| | Labour force (% female) average 1997-1999 | Female Illiteracy rate (average 1997-1999) |
|---|---|---|
| Labour force (% female) average 1997-1999 | 1 | -0.55** |
| Female Illiteracy rate (average 1997-1999) | -0.55** | 1 |

**Correlation is significant at the 0.01 level (2-tailed).

We can observe that there is a strong negative relationship between female illiteracy and female labour force participation. In other words, the lower the illiteracy, the higher the labour force participation of women. The impact of literacy rates is therefore substantial, it directly impacts on incarceration rates and to a large extent it explains female labour force participation, gender development and empowerment – variables which themselves, individually share a significant relationship with incarceration rates.

Unlike homicides and homicides with firearms, incarceration rates hail virtually no relationship with the measures of income inequality e.g. Gini, income ratios etc. In other words, income inequality in or between countries does not explain the size of a prison population in a country or between countries.

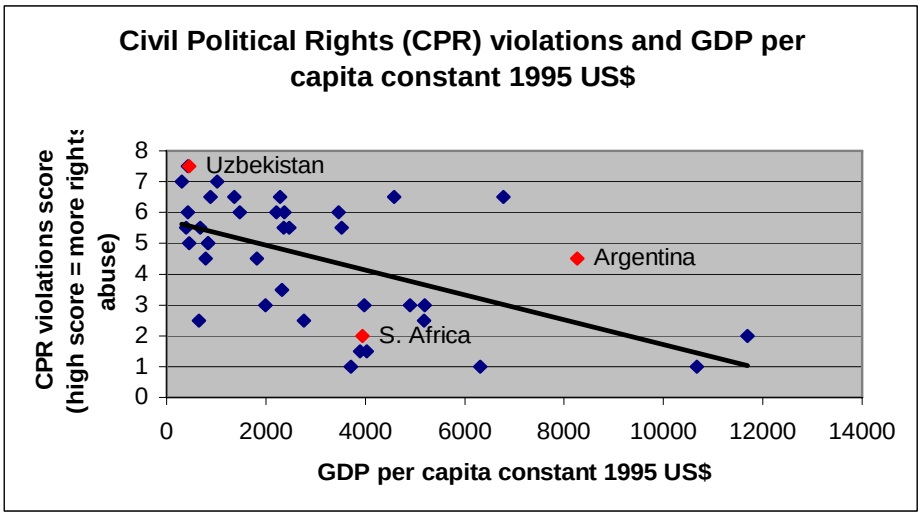
**Democracy, good governance and rule of law**

**Matrix 9. Civil and Political Rights (CPR) violation score and socio-economic correlations**

| | CPR |
|---|---|
| CPR (Civil and Political Rights violation) score | 1 |
| Average 1997-1999 GDP per capita constant (1995 US$) | -0.55** |
| % Population female (average 1997-1999) | -0.35* |
| Population growth (average 1997-1999) | 0.31* |
| Urban popn growth (average 1997-1999) | 0.35* |
| Newspapers per 1000 popn (average 1995-1997) | -0.45** |
| Electric power consumption kwh per capita (average 1997-1999) | -0.43** |
| Female Illiteracy rate (average 1997-1999) | 0.42* |
| Total Illiteracy rate (average 1997-1999) | 0.40* |
| Improved sanitation (% popn with access) 2000 | -0.54** |
| Information and communications exp (% of GDP) average 1997-1999 | -0.43* |
| Military exp % GDP average 1997-1999 | 0.35* |
| Health expenditure % GDP (average 1997-1999) | -0.49** |
| Improved water source (% popn with access) 2000 | -0.44* |
| Ratio of girls to boys in prim and sec edu (average 1997-1999) | -0.45* |
| Gender development index HDR 2003 | -0.44** |
| Gender Empowerment Measure HDR 2003 | -0.58** |
| Income security index IFP/SES | -0.59** |
| National poverty (HDR 2003, KILM 2003) | 0.41* |
| Social security exp IMF (average 1995-1999) | -0.42* |
| Economic Freedom Index | -0.57** |
| Index of Democracy (Tatu) average 1997-1999 | -0.59** |
| | |
| **Correlation is significant at the 0.01 level (2-tailed). | |
| *Correlation is significant at the 0.05 level (2-tailed). | |

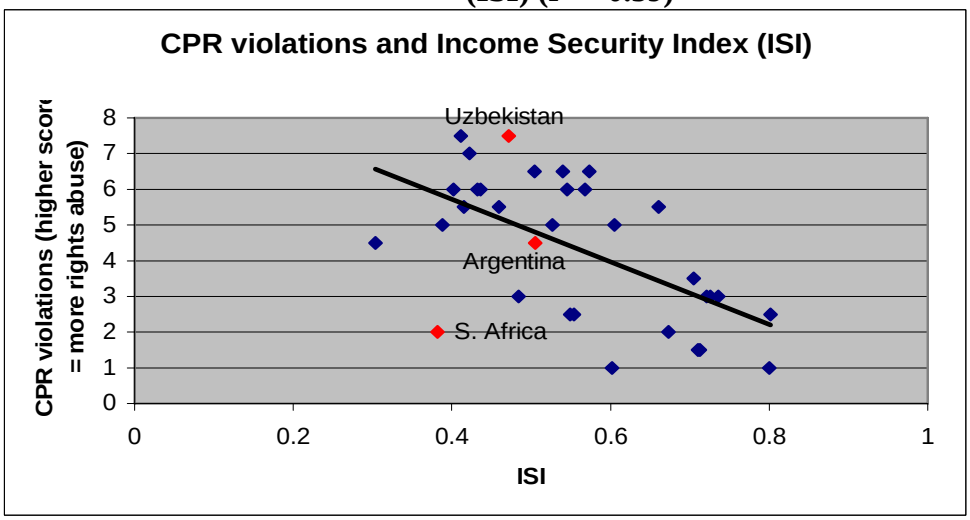
The CPR uses a combination of the U.S. State Department Reports on Human Rights, Amnesty International Reports and Human Rights Watch Reports to avoid relying too heavily on one source due to concern over biases in methodology and to obtain a less elite based notion of civil and political rights. From the above matrix, the CPR is highly negatively correlated with GDP per capita and the ISI (-0.55 and –0.59 at 1% significance respectively), that is, the higher the CPR violations (the *worse* the civil and political rights situation), the lower the GDP per capita and lower the income security of a populace. Once considered together one can suggest that differences in the level and equity of income can point to differences in civil and political rights violations (of course, there may be other factors involved). Uzbekistan has the worst civil, political rights score amongst the sample countries used and very low GDP per capita, yet Uzbekistan is important in driving the relationship illustrated below.

**Figure 14. Civil Political Rights (CPR) violations and GDP per capita (r = -0.55)**




In accordance with the previous CPI correlations, the CPR is also highly correlated with the ISI, GEM, Economic Freedom Index and Vanhanen's Index of Democracy (yet negatively correlated because higher CPR means higher rights abuses whereas higher CPI denotes less corruption/less violence). In other words, higher income insecurity, lower female equality in terms of political representation, lower economic freedom and less democracy explain, to a large extent, CPR violations between countries.

**Figure 15. Civil Political Rights (CPR) violations and the Income Security Index (ISI) (r = -0.59)**




At one extreme is Uzbekistan which lies at the high end of the CPR score (many violations) and low in terms of income security. Unfortunately there are only 29 countries from which we can analyse the relationship between CPR violations and income security, therefore sampling error is an important factor that may have biased this high correlation coefficient.

**Matrix 10. Corruption Perception Index (CPI) and socio-economic correlations**

| | CPI 2003 |
|---|---|
| CPI 2003 | 1 |
| Life exp at birth (total) average 1997-1999 | 0.59** |
| Male population aged 15-29 as % of total | -0.63** |
| Average 1997-1999 GDP per capita constant (1995 US$) | 0.85** |
| Urban popn (average 1997-1999) | 0.61** |
| Newspapers per 1000 popn (average 1995-1997) | 0.69** |
| Electric power consumption kwh per capita (average 1997-1999) | 0.73** |
| % Employment in agriculture (average 1997-1999) | -0.67** |
| % Employment in services (average 1997-1999) | 0.68** |
| Youth (male) Illiteracy rate (average 1997-1999) | -0.35* |
| Improved sanitation (% popn with access) 2000 | 0.50** |
| Labour force (% children) average 1997-1999 | -0.40** |
| Infant mortality rate (average 1997-1999) | -0.53** |
| Unemployment rate total (average 1997-1999) | -0.33* |
| Unemployment rate male (average 1997-1999) | -0.40** |
| Youth unemployment male (average 1997-1999) | -0.41** |
| Health expenditure % GDP (average 1997-1999) | 0.66** |
| Improved water source (% popn with access) 2000 | 0.59** |
| Public spending on education (% GDP) average 1997-1999 | 0.29* |
| Gender development index HDR 2003 | 0.73** |
| Gender Empowerment Measure HDR 2003 | 0.84** |
| Income security index IFP/SES | 0.84** |
| National poverty (HDR 2003, KILM 2003) | -0.50* |
| Social security exp IMF (average 1995-1999) | 0.32* |
| Economic Freedom Index | 0.80** |
| Index of Democracy (Tatu) average 1997-1999 | 0.51** |
| | |
| **Correlation is significant at the 0.01 level (2-tailed). | |
| *Correlation is significant at the 0.05 level (2-tailed). | |

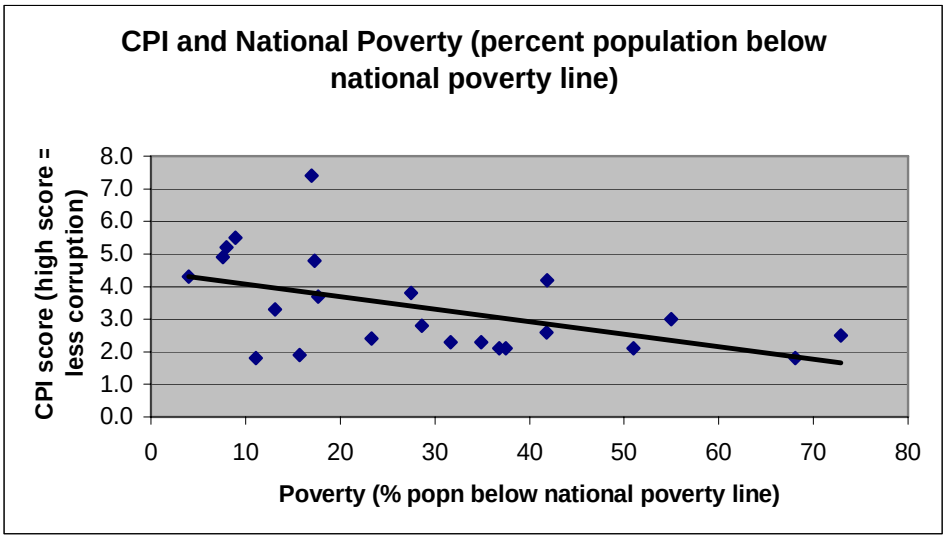
Using the Corruption Perception Index (CPI), Civil, Political Rights (CPR) score and Rule of law index as violence variables is controversial due to the obvious fact that e.g. corruption, unlike torture, is not necessarily a violent act. These concepts are important to this exercise since we have already established that inequality is closely connected to levels of violence globally, and by limiting inequality by dividing the 'cake' fairly, democracy or characteristics of democracy can influence levels of violence. The CPI, CPR and Rule of law index contribute to our understanding of state violence, providing different conceptual and empirical angles of measuring state violence. The following matrixes will demonstrate how socio-economic development and inequality can affect the inclination of a state to use violence or violate specific rights.

The matrix above illustrates that the CPI is highly correlated with an array of socio-economic variables. From the top of the matrix, one can see that the CPI is strongly positively correlated with life expectancy at birth, percent male population aged 15-29,

GDP per capita, urban population as a percent of total population, newspapers per 1000 population and electricity consumption. There are no real surprises here since the higher the life expectancy, GDP per capita, urban population and newspapers, one would expect the higher the corruption index score (the *less* corrupt a country is) since industrialised nations suffer less from corruption than undeveloped countries. It is the industrialised countries that have a longer living, higher earning, and greater urban concentrated population with higher literacy/readership than poorer, undeveloped countries. Furthermore the more industrialised countries are (and less corrupt), the smaller the percent of their workforce in agriculture and larger the percent in services, as compared to poorer countries. This is supported in the above matrix with strong coefficients between the CPI and employment in agriculture (–0.67) and services (0.68).

Further down the matrix, one notices that unlike other violence variables, the CPI is strongly correlated with a couple socio-economic variables under the 'Public Services' theme in table 2. The CPI is highly positively correlated with percent of GDP spent on health and improved water source (percent of population with access to safe water), which are proxies for resource commitment by the state for its population. This implies that the more the state provides in basic but crucial services such as health and safe drinking water, the less corrupt a country is. Generally speaking, the commitment of resources by the state from a distributional perspective influences the corruption rating (an indicator of democracy, good governance and rule of law) of a state and thus possibly the inclination of the state to violate rights.

**Figure 16. The Corruption Perception Index (CPI) and national poverty (r = -0.50)**

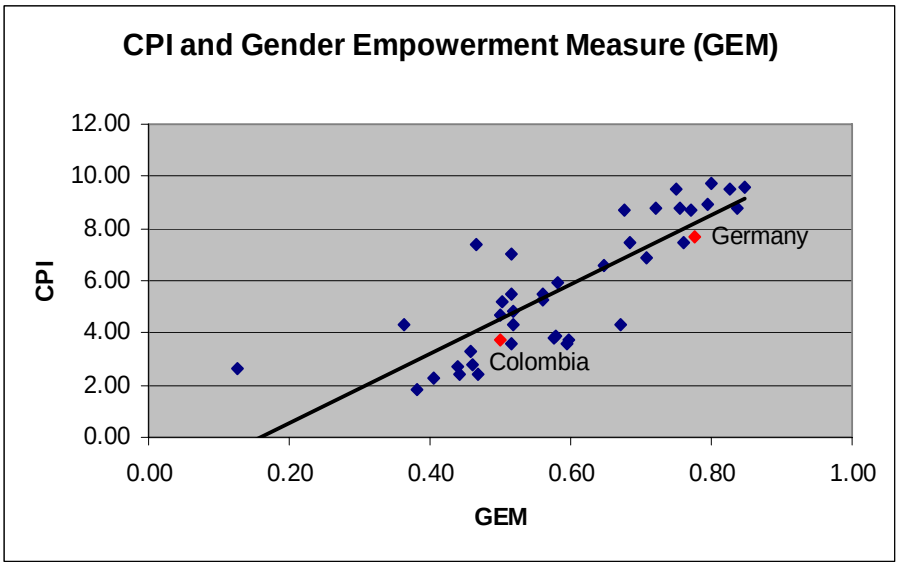



The scatter plot above captures the strong negative relationship between the CPI and poverty measure. Poverty no doubt stands as a powerful explanatory variable of violence in and between countries.

Strong positive correlates of the CPI are the Gender Development Index (GDI) and Gender Empowerment Measure (GEM). The scatter plot below illustrates just how

strong the relationship is between the CPI and the GEM. Indicated is Germany which scores high in the CPI (little corruption) and high in the GEM (measured by female share of parliamentary seats, senior officials, managerial positions and female income). This is an interesting finding, suggesting that the greater the equality of women in government and power over economic resources, the lower the level of perceived state corruption. The scatter plot below illustrates this relationship clearly where most countries lie around the trendline with Colombia (developing) and Germany (industrialised) as examples.

**Figure 17. The Corruption Perception Index (CPI) and the Gender Empowerment Measure (GEM) (r = 0.84)**




Other composite indexes highly positively correlated with the CPI include the Economic Freedom Index and Vanhanen's Index of Democracy.

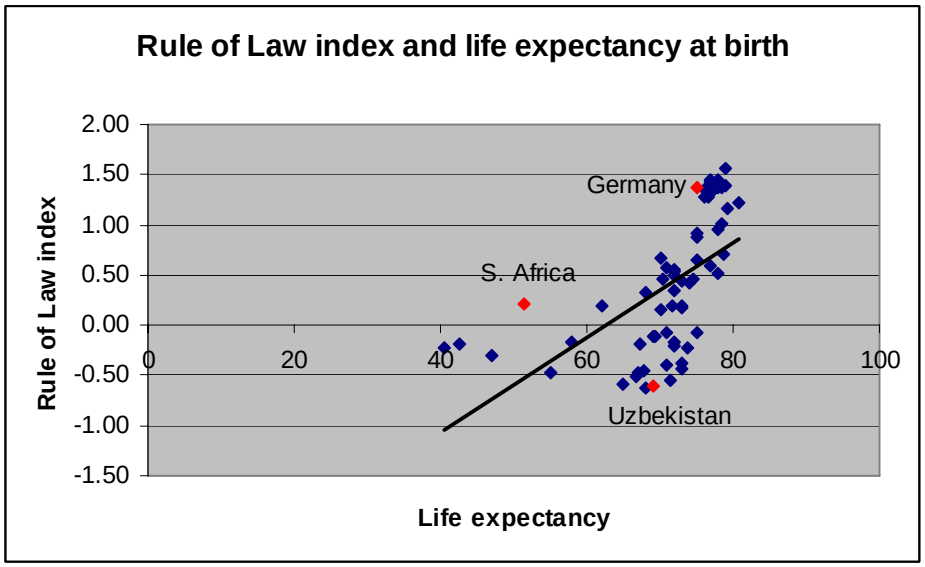
**Matrix 11. Rule of law index and socio-economic correlations**

| | Rule of law |
|---|---|
| Rule of law index (KKZ average 1998-2002) | 1 |
| Life exp at birth (total) average 1997-1999 | 0.59** |
| Male population aged 15-29 as % of total | -0.59** |
| Average 1997-1999 GDP per capita constant (1995 US$) | 0.85** |
| Urban popn (average 1997-1999) | 0.53** |
| Newspapers per 1000 popn (average 1995-1997) | 0.67** |
| Electric power consumption kwh per capita (average 1997-1999) | 0.68** |
| % Employment in agriculture (average 1997-1999) | -0.66** |
| % Employment in services (average 1997-1999) | 0.66** |
| Improved sanitation (% popn with access) 2000 | 0.51** |
| Labour force (% children) average 1997-1999 | -0.35** |
| Infant mortality rate (average 1997-1999) | -0.51** |
| Unemployment rate total (average 1997-1999) | -0.34* |
| Unemployment rate male (average 1997-1999) | -0.45** |
| Youth unemployment male (average 1997-1999) | -0.49** |

| | |
|---|---|
| Health expenditure % GDP (average 1997-1999) | 0.65** |
| Improved water source (% popn with access) 2000 | 0.56** |
| Gender development index HDR 2003 | 0.72** |
| Gender Empowerment Measure HDR 2003 | 0.83** |
| Income security index IFP/SES | 0.84** |
| National poverty (HDR 2003, KILM 2003) | -0.60** |
| Social security exp IMF (average 1995-1999) | 0.31* |
| Economic Freedom Index | 0.85** |
| Index of Democracy (Tatu) average 1997-1999 | 0.55** |
| | |
| **Correlation is significant at the 0.01 level (2-tailed). | |
| *Correlation is significant at the 0.05 level (2-tailed). | |

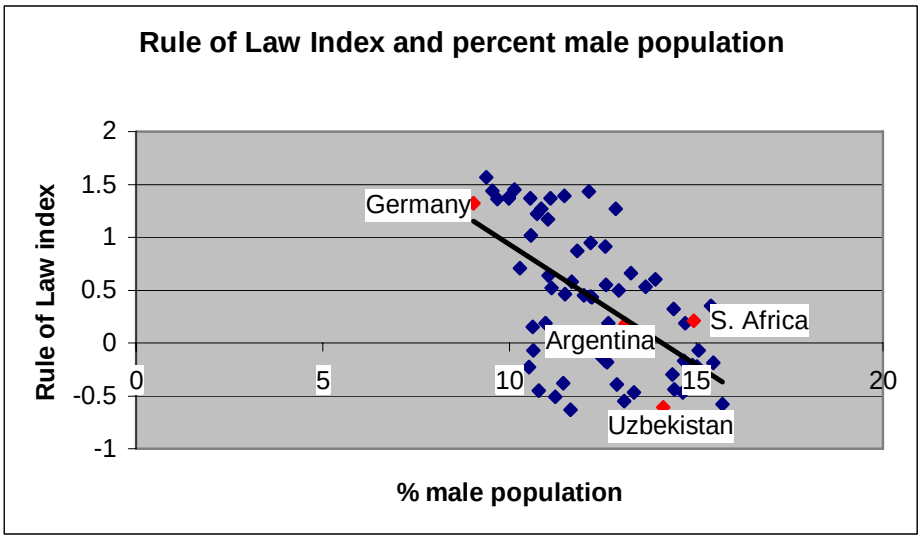
The Rule of Law index is a robust indicator of 'Democracy, good governance and rule of law', as indicated by the very high positive correlations with the GDI, GEM and Vanhanen's index of democracy. The Rule of Law index is highly correlated with numerous socio-economic variables. First to note is the strong positive relationship between demographic variables and the Rule of Law such as life expectancy and urban population.

**Figure 18. Rule of Law Index and life expectancy (r = 0.59)**




Differences in life expectancy between Germany and South Africa are indicative of the difference in levels of development. Life expectancy is a robust measure of the general health of the populace and a proxy for economic development. The scatter plot above shows that the higher the life expectancy, the higher the Rule of Law index (more law abiding the state is and better protected the rights of civilians are). Another demographic variable highly correlated with the Rule of Law index is the male population aged 15-29 as a percent of the total population.

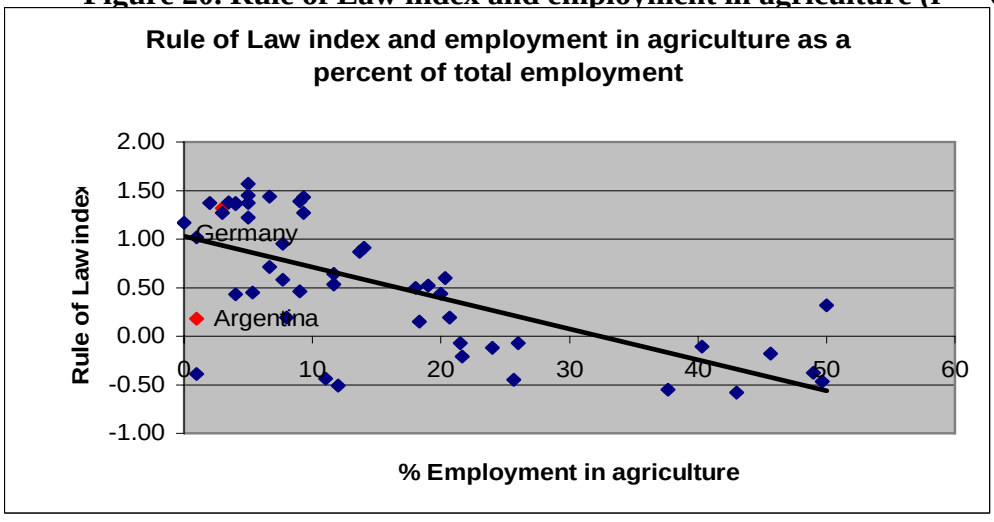
**Figure 19. Rule of Law index and percent male population (r = -0.59)**




The relationship between the male population variable and the Rule of Law index shares the same strength as that between life expectancy and the Rule of Law index, yet in the opposite direction i.e. male population and Rule of Law index are negatively correlated. In other words, the higher the percent male population, the lower the rule of law, as illustrated by comparing Germany and Uzbekistan.

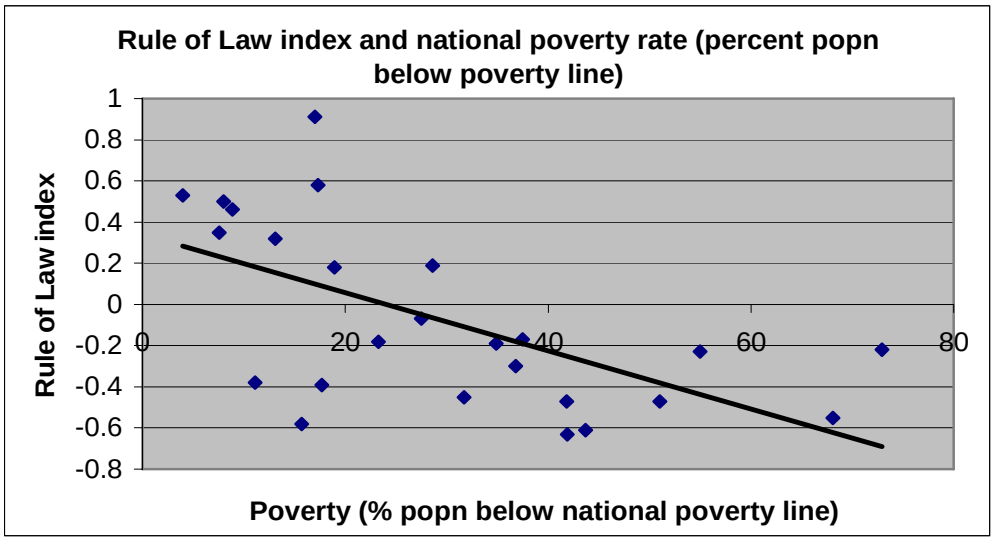
Other correlates include GDP per capita, electricity consumption per capita and percent employment in agriculture. As mentioned earlier on, generally speaking, the higher the percent employed in agriculture, the lower the economic development of the country. Below, the scatter plot shows the strong negative relationship between percent employed in agriculture and Rule of Law index, that is the higher the percentage employed in agriculture, the lower the Rule of Law index (less respect for law by a state). Supporting this relationship is the same strength relationship (0.66) but in the opposite direction between percent employed in services and Rule of Law index. This is expected given that high employment in services reflects how advanced an economy is. In sum, the general health and wealth of a population is a very strong predictor of the state of political and civil liberties as measured by the Rule of Law index.

**Figure 20. Rule of Law index and employment in agriculture (r = -0.66)**



Resource commitment of the state to its populace seems to be closely related to civil and political commitment as well. For example if one examines the relationship of health expenditure and access to improved water source to the Rule of Law index, the strong positive coefficients tell us that the greater the resource commitment (in terms of greater expenditure on health and safe water), the greater the Rule of Law index i.e. the greater the protection of civil and political rights, and protection against abuses of state power. Higher economic 'freedom' is also associated with higher political freedom as indicated by an extremely high positive coefficient of (0.85) between the Economic Freedom of the World and Rule of Law index. However, more importantly, we want to assess the magnitude of the relationship between the Rule of Law index and inequalities within and between countries. We turn to the Income Security Index (ISI) and an extremely high positive coefficient of 0.84 indicates that income security is also a strong explanatory variable of the rule of law, that is, the higher the income security, the stronger the rule of law. Affirming this, is the strong negative coefficient between national poverty and the Rule of Law index. Below, one can see that as poverty rises, the Rule of Law index falls.

**Figure 21. Rule of Law index and national poverty (r = -0.60)**




All the matrixes above have established, beyond coincidence, that certain socio-economic variables influence different kinds of violence to varying degrees. Each non-state and state variable has been examined in light of an array of socio-economic trends and the most significant relationships have been briefly analysed. However if we limit our analysis of violence and socio-economic inequalities to the macro-level, we may not be able to avoid what is termed as the ecological fallacy, which occurs when correlations based on macro data can be incorrectly assumed to hold for individuals. If we are to make generalisations about a country and its populace then studying people is just as important as studying countries.

Hence one should, if possible, use survey data to reveal how violence varies according to a number of socio-economic factors such as gender, age, ethnicity, income, education and occupation etc. – the typology of victims. This enables us to analyse the types of

violence risks among different groups. Therefore having made general observations concerning the relationship between non-state and state violence and socio-economic variables, we will progress onto the second level of our analysis – the micro level.

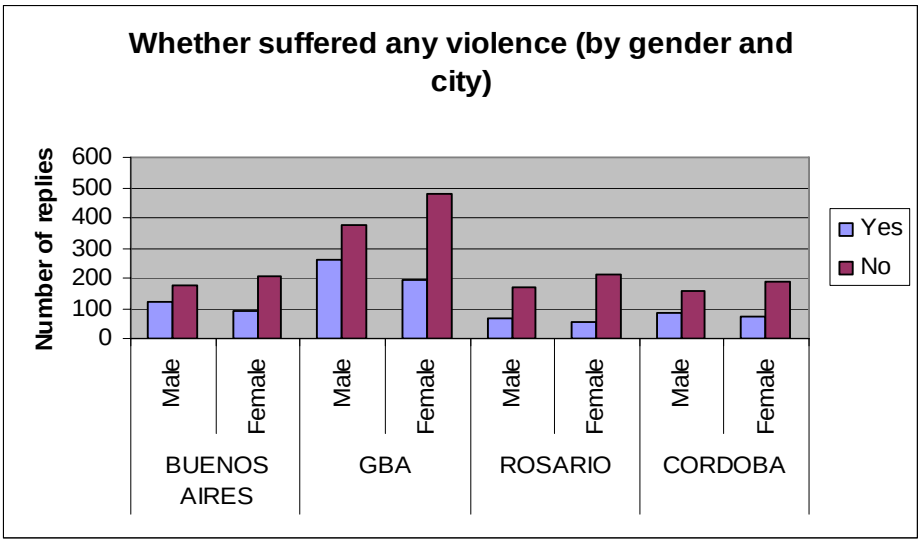
### 4.2. Analysis at the Micro Level (Argentina and South Africa)

In mid-2000 the ILO's InFocus Programme on Socio-Economic Security (IFP/SES) launched the People's Security Survey (PSS) with a desire to learn from the voices of the people regarding their security and insecurity in work and life. Essentially, the PSS is a household survey, which collects information on people's experiences, perceptions and opinions regarding their own security and insecurity and their views on policies that affect their work and life. Although intended for an audience primarily interested in work-related securities, the PSS contains questions on offences that are highly relevant to this paper. It asks representative population samples (up to 3000 people) about their experiences, perceptions and opinions regarding selected offences over a given time. The PSS deals with incidents that have, or have not, been reported to the police and why people do or do not choose to report them to the police thus providing a realistic picture of the population affected by violence. Furthermore the PSS asks how secure the respondent feels about their human rights situation, whether they feel their rights are under threat etc.

#### *a) Results of People's Security Survey (PSS) Argentina*

Question: Did you ever suffer any kind of violence?

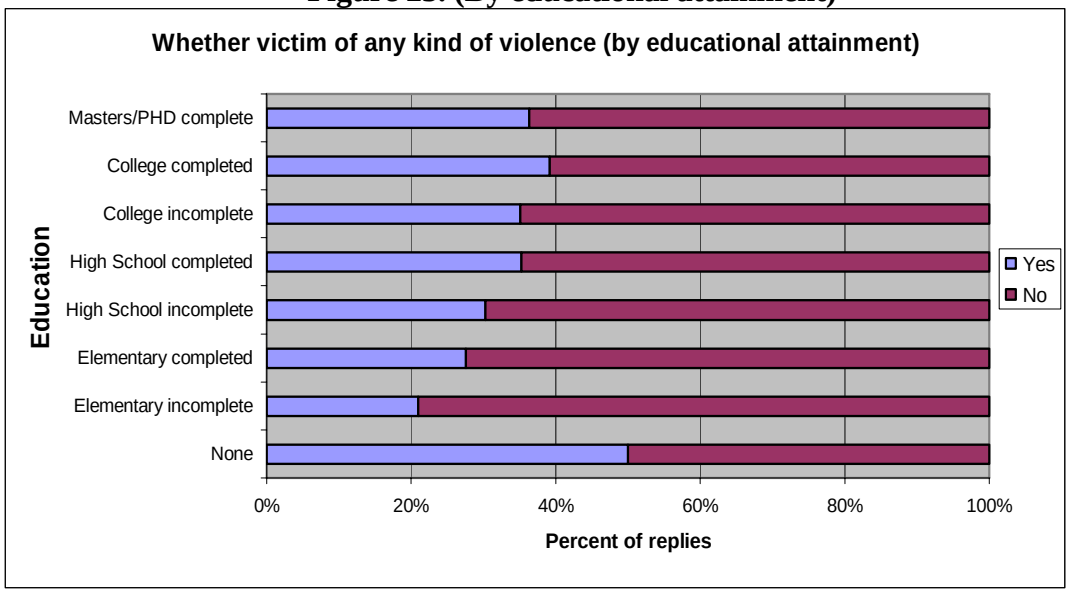
**Figure 22. (By gender)**




*GBA = Greater Buenos Aires

In all areas and for both sexes, a greater proportion of respondents answered 'yes' than 'no' to whether or not they have suffered from any kind of violence. Notably, due to the larger number of respondents living in the Greater Buenos Aires area, there were more replies to this question yet in terms of percent gender composition of those who answered yes or no, GBA resembles that of the other urban areas, that is, generally males experienced violence more than females. Over half of all replies by males in Buenos Aires, GBA and Cordoba are 'yes'.

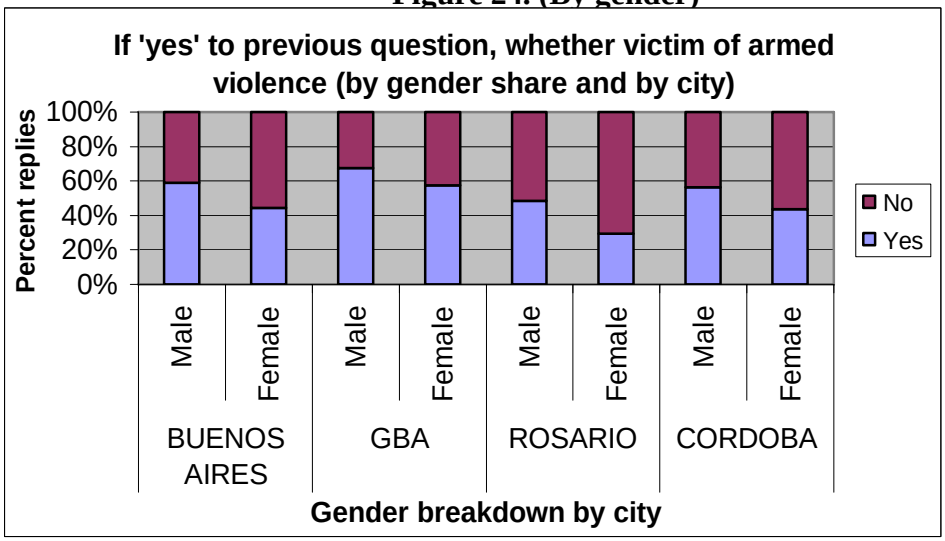
**Figure 23. (By educational attainment)**




Clearly one can see that proportionally, those with no education at all were more likely to suffer from some kind of violence. Roughly 50% of respondents with no education answered 'yes' to the question.

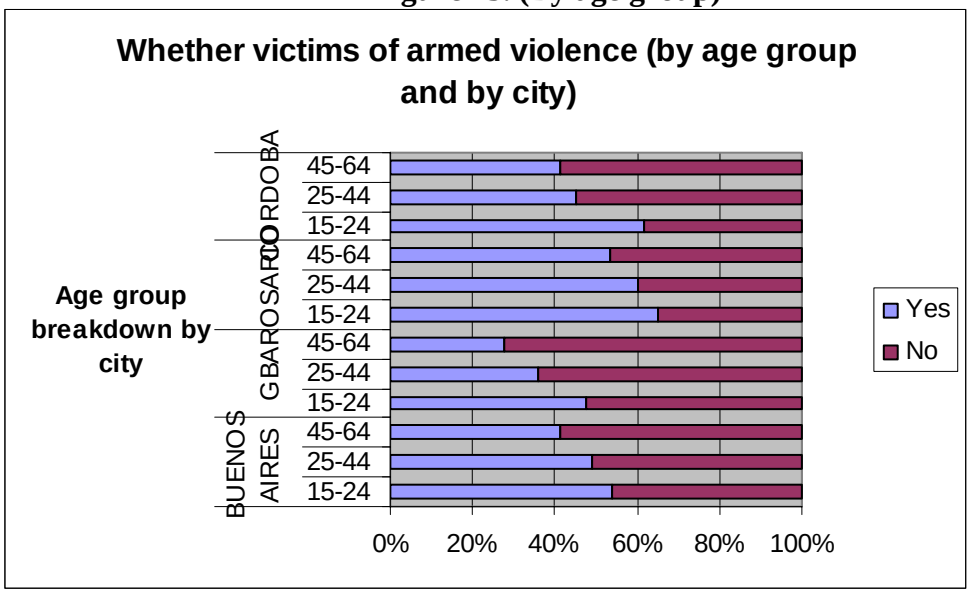
Question: If 'yes' to the previous question, what kind of violence did you experience?

**Figure 24. (By gender)**



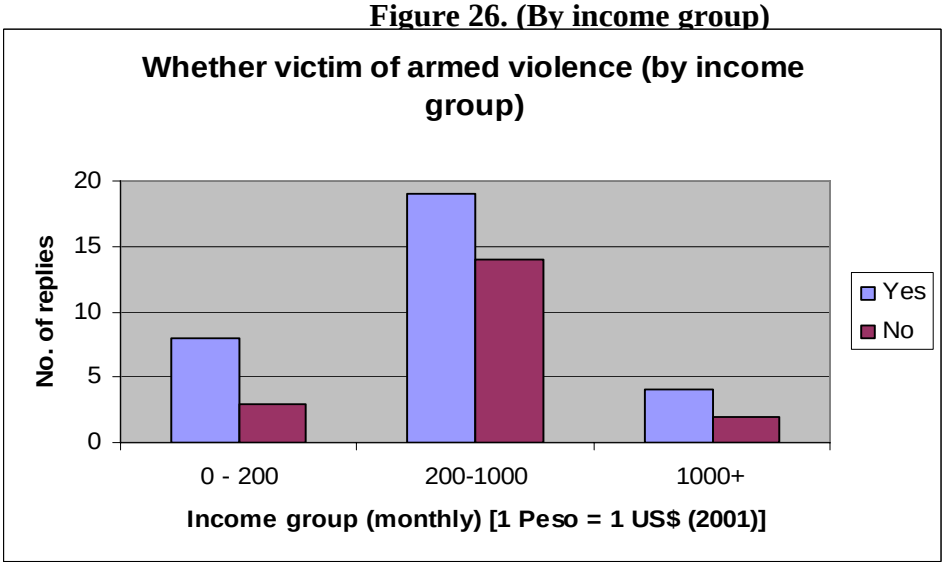
The male/female composition of answers resembles that of the first question. The percent breakdown shows males answer 'yes' proportionally more than females when answering the question with regards to being a victim of armed violence. Moreover answers to both the first and second question suggest that the area of Rosario is the least 'violent' with 'no' being a majority answer for males and females.

**Figure 25. (By age group)**



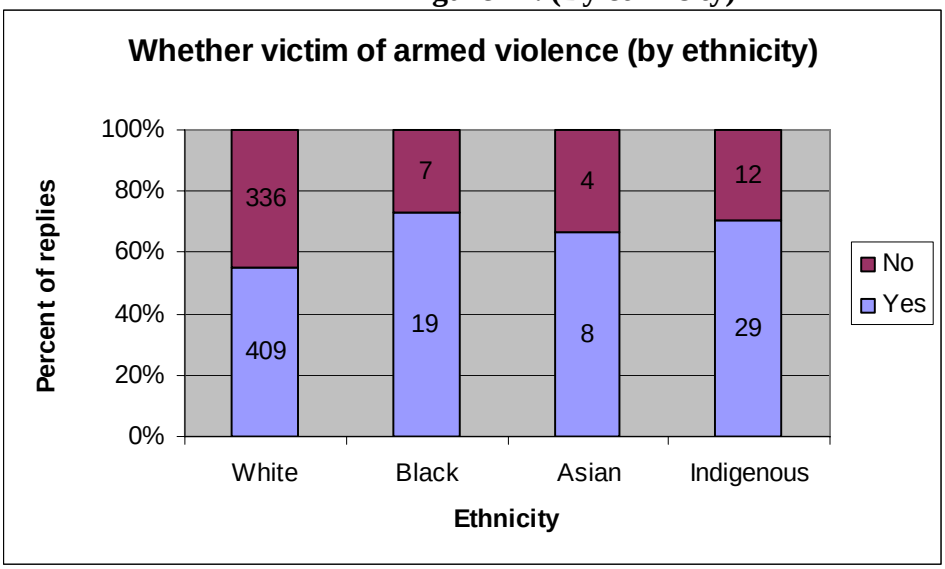

From the graph above a pattern emerges whereby younger age groups across all areas answer 'yes' to being a victim of armed violence, more than their older counterparts. Relatively speaking, in other words, the older the respondent, the less the chance of being a victim of armed violence.

**Figure 26. (By income group)**



Respondents at the bottom 10% of the income ladder replied proportionally more with 'yes' to being a victim of armed violence, than other income groups. The top 10% of earners only constituted two respondents, hence taking 1000+ Pesos as the upper income level. The income group with least exposure to armed violence is the middle-income group where majority replies were 'no' to the question.

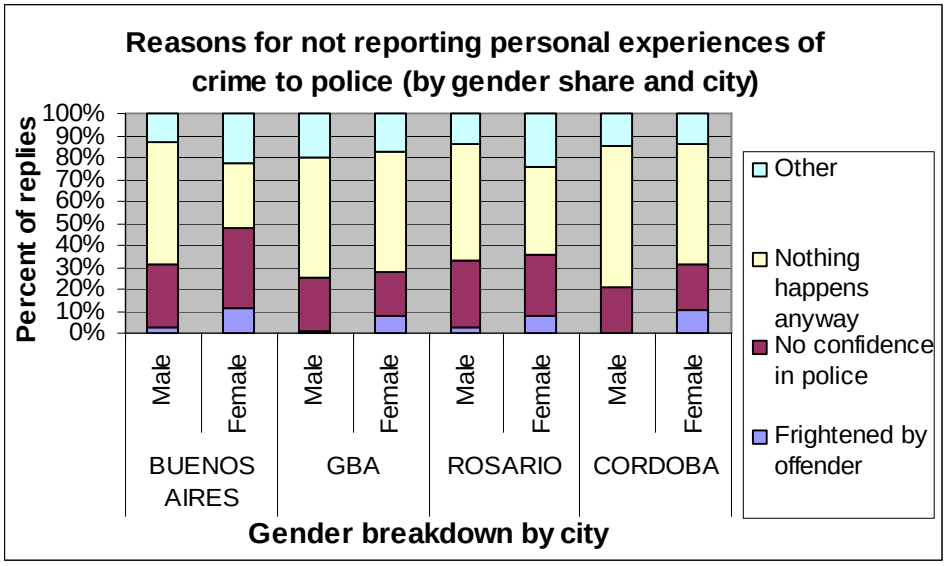
**Figure 27. (By ethnicity)**




Black people answered proportionally more with 'yes' rather than 'no' to being a victim of armed violence, in comparison to other ethnic groups. After Blacks, the majority of Indigenous persons that experienced violence, replied 'yes' to being a victim of armed violence, then follows Asians and lastly, Whites.

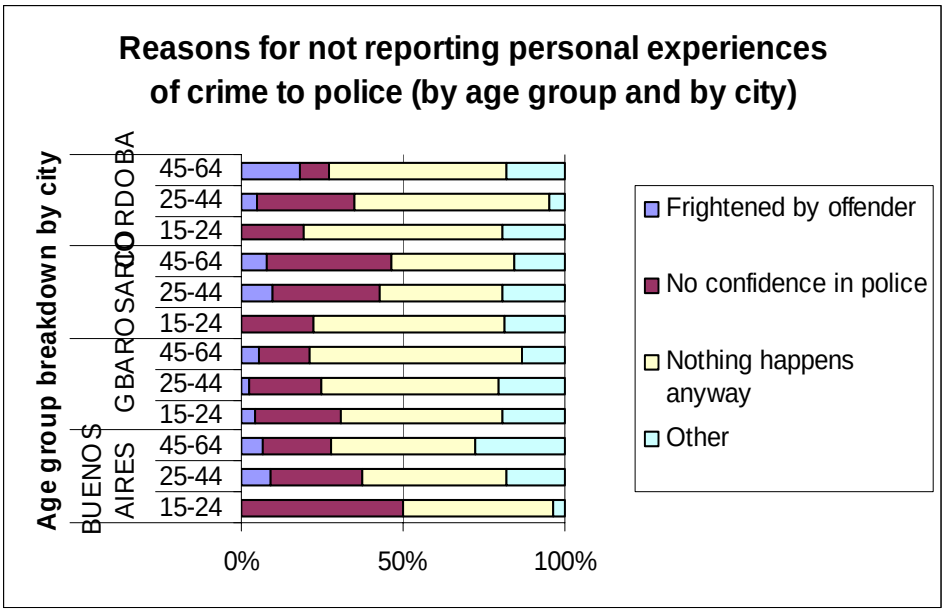
Question: Why haven't you reported the crime that most affected you? (Question following on from answering 'yes' to a question asking whether or not the respondent has reported the crime that most affected him/her)

**Figure 28. (By gender)**



'Nothing happens anyway' is the most common answer among both sexes as the reason why they haven't reported the crime to the police. The second most common answer is 'no confidence in police'.

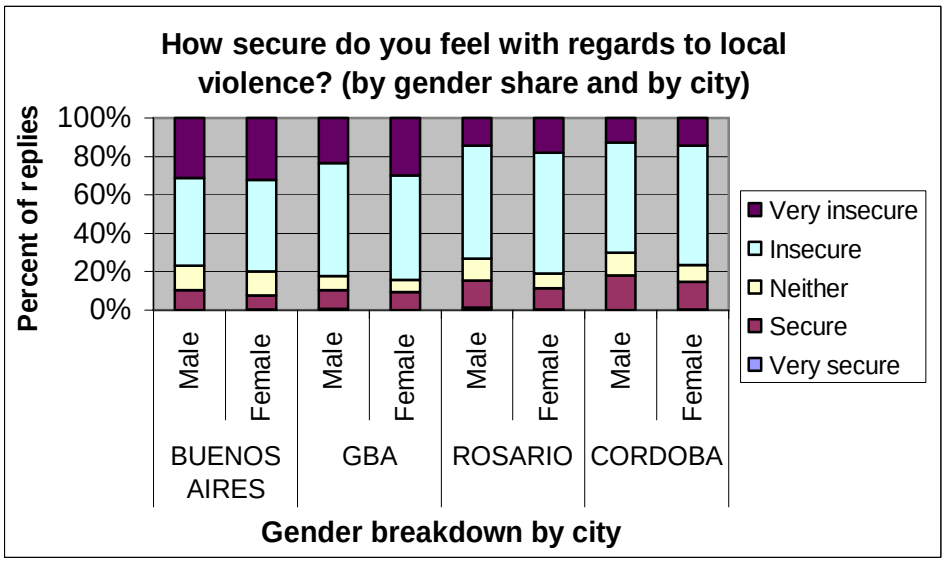
**Figure 29. (By age group)**




Confidence in police increases with age in Buenos Aires, GBA and Cordoba but declines with age in Rosario. Generally speaking, 'nothing happens anyway' is the most common answer (often the majority answer) across all age groups and areas.

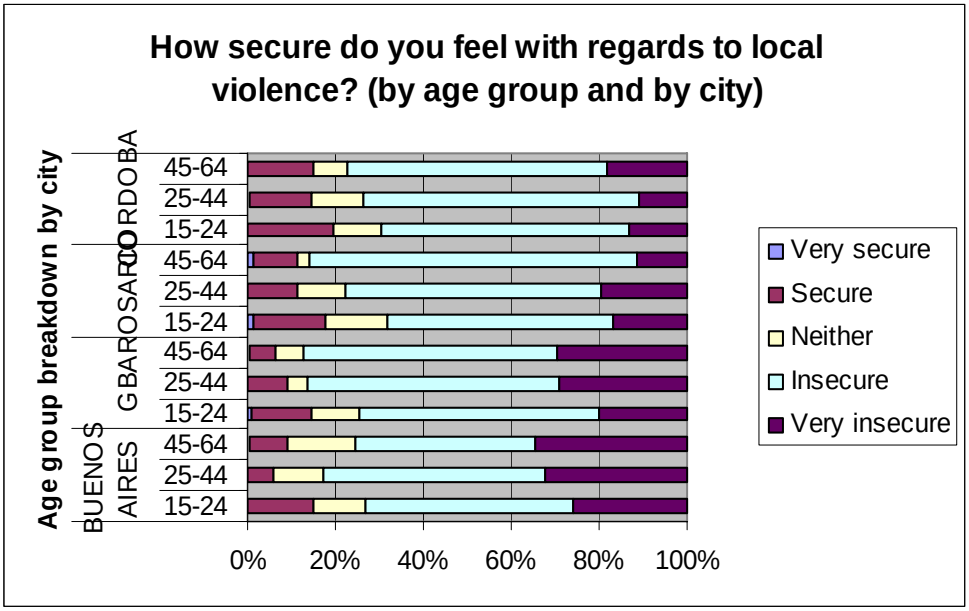
Question: Do you and your family feel very safe/safe/neither safe nor unsafe/unsafe/very unsafe about local violence?

**Figure 30. (By gender)**



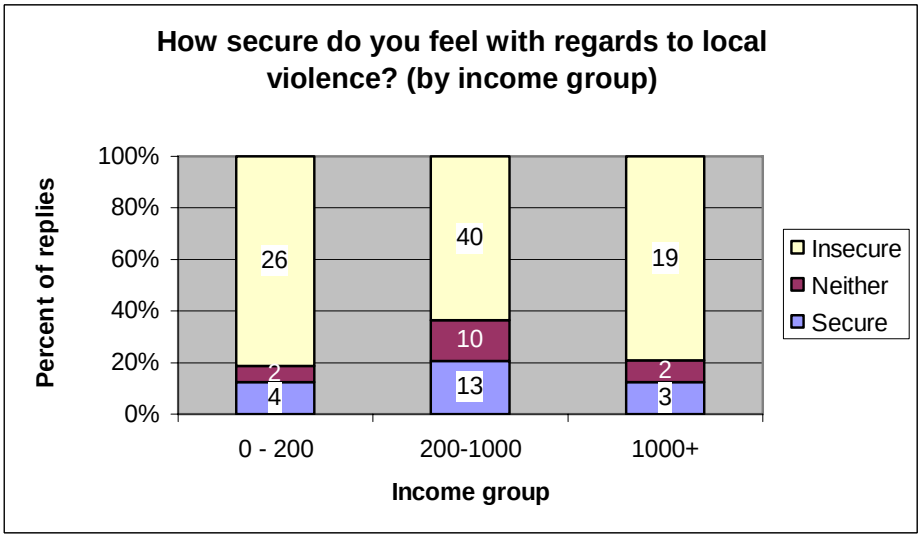
'Insecure' is the majority answer for both males and females from all areas. 'Very insecure' is the second most common answer. Based on the answer to this question, respondents in Cordoba perceive themselves to be safer than respondents from other areas and respondents in Buenos Aires, the worst off.

**Figure 31. (By age group)**



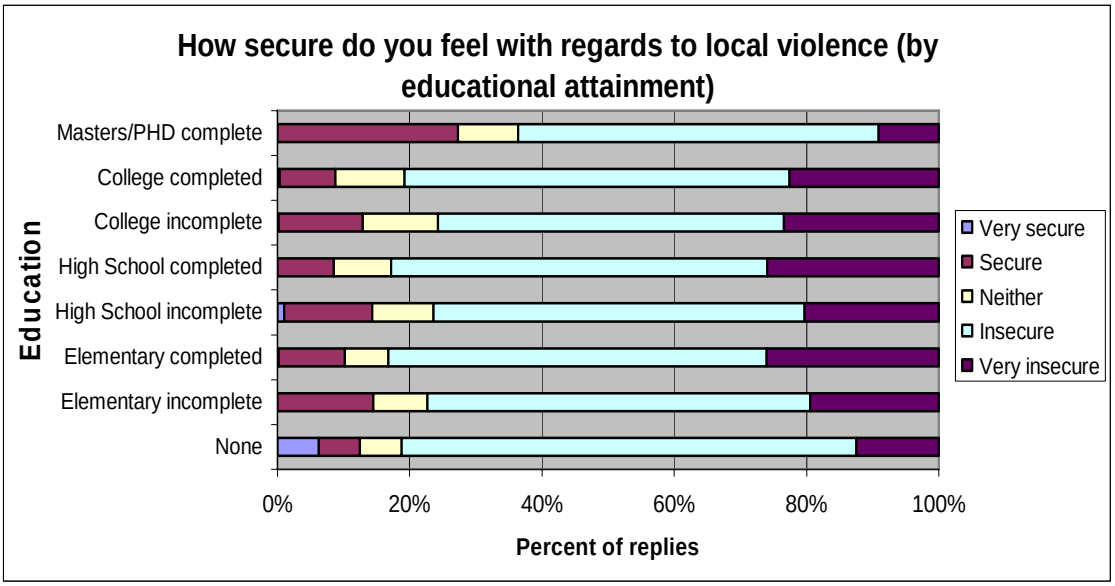

In general, perception of insecurity rises with age with older age groups answering relatively in favour of 'very insecure' compared to other age groups.

**Figure 32. (By income group)**



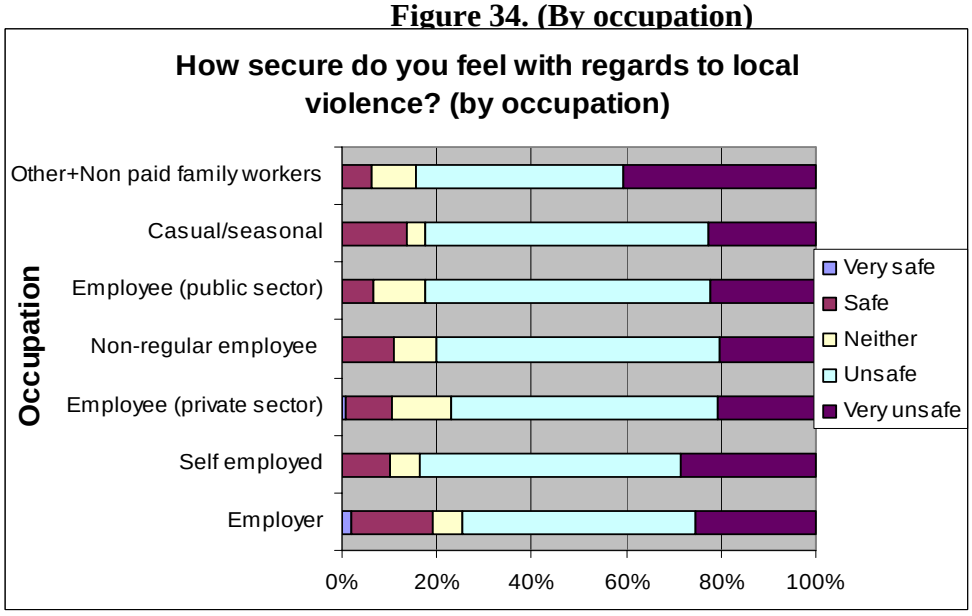
Both ends of the income scale are comparable in terms how respondents answered, yet the middle income earners answered quite differently. Middle-income earners replied less with 'insecure' and more with 'secure' than the bottom and top earners.

**Figure 33. (By educational attainment)**




There is a significant difference in how highly educated respondents, who have completed a (Masters/PHD), and respondents with no education answered this question. Those with very high levels of education are far more secure when asked about local violence than uneducated respondents. The vast majority of uneducated respondents answered 'insecure' (70%) as opposed to roughly 45% of those highly educated. Nearly 30% of highly educated respondents replied with 'secure' compared to 7% of those uneducated.

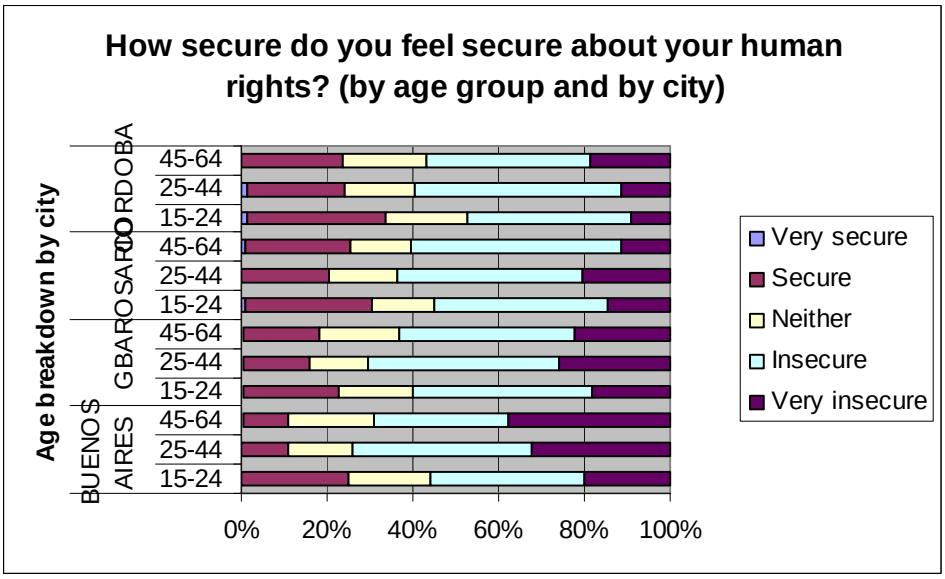
**Figure 34. (By occupation)**



The most common answer is 'unsafe'. Non-paid family workers answered (over 40%) with 'very unsafe' with regards to local violence, which was far more than other occupational groups.

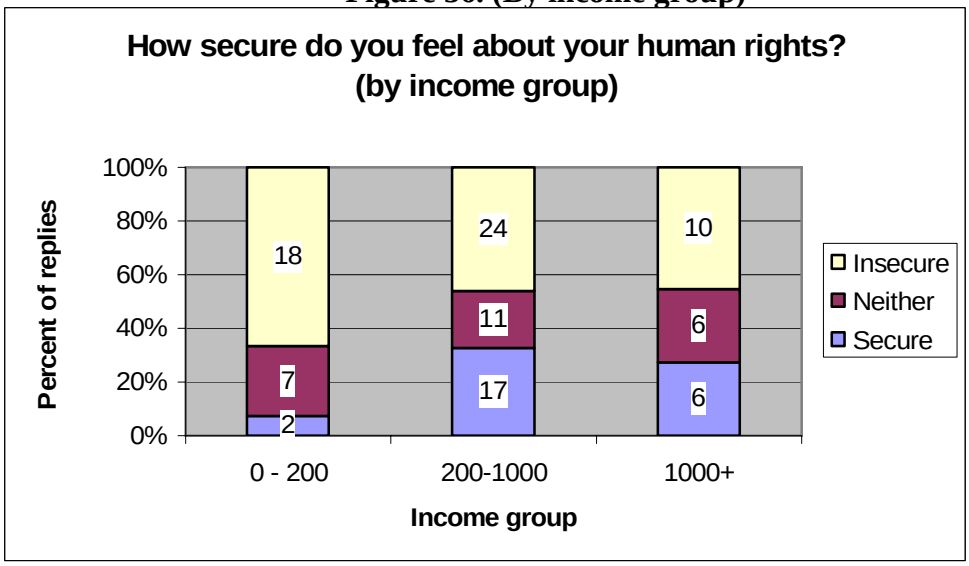
Question: Do you and your family feel very safe/safe/neither safe nor unsafe/unsafe/very unsafe about your human rights?

**Figure 35. (By age group)**



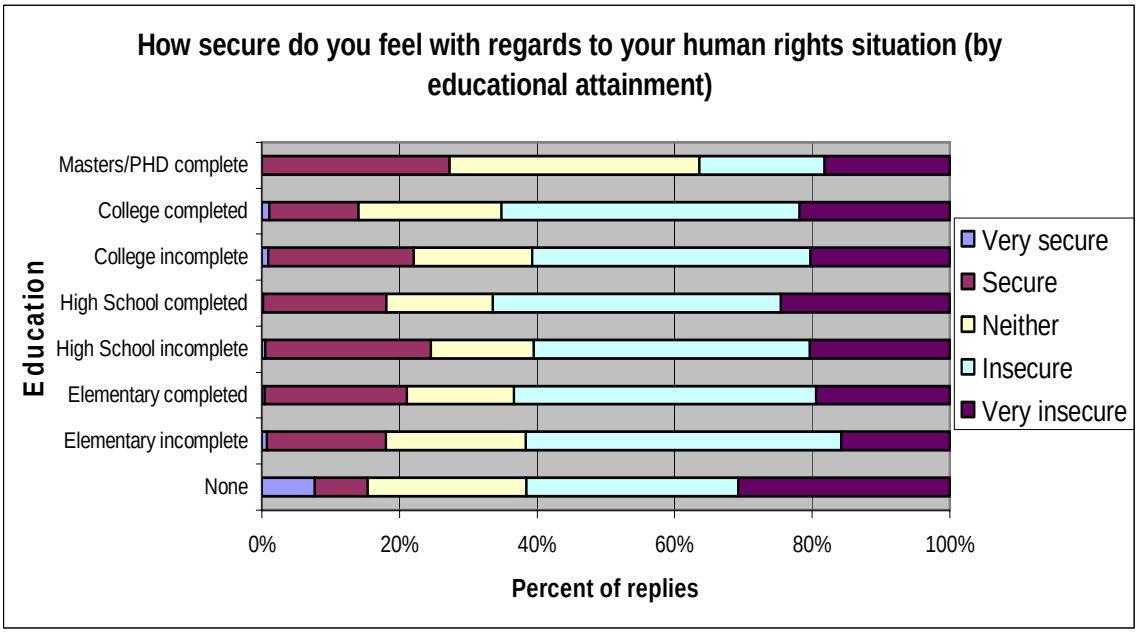

Generally speaking, insecurity rises with old age even in terms of perception of human rights. In comparison to the question regarding how the respondent feels about local violence, the question concerning human rights receives greater extreme replies of 'very secure' and 'very insecure' as if respondents are polarised with regards to perception of their human rights situation.

**Figure 36. (By income group)**



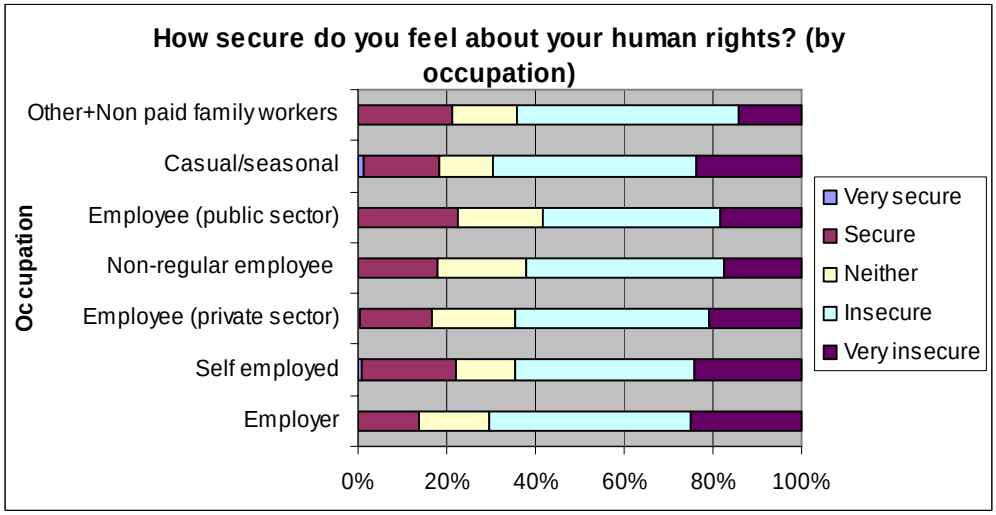
Notably, the lowest income group earning 0-200 Pesos feel most insecure about their human rights situation than their higher earning counterparts. A clear majority answered 'insecure' and a clear minority answered 'secure'.

**Figure 37. (By educational attainment)**



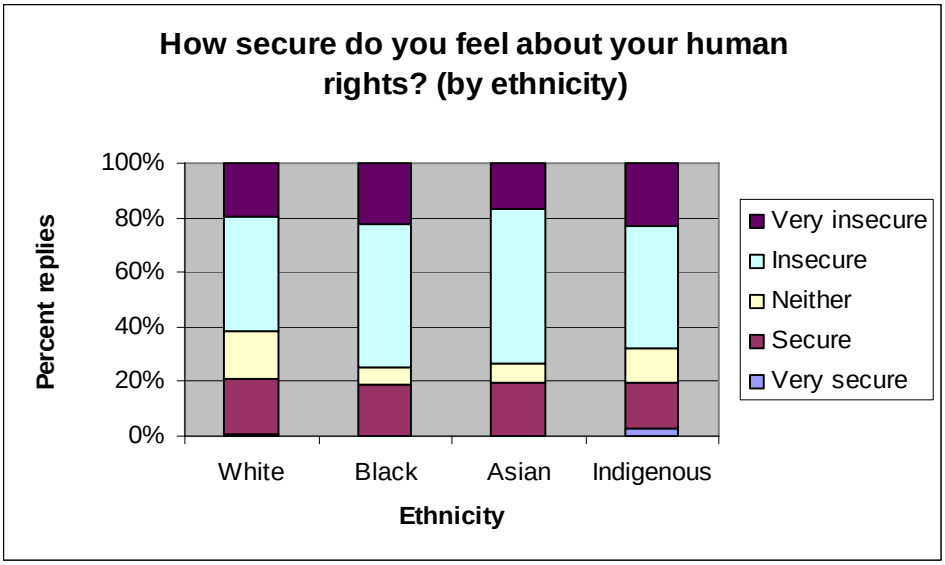

In many ways this mirrors the disparity between how those educated and uneducated answered the question concerning local violence except for the fact that the uneducated respondents are even more insecure about human rights as opposed to local violence, that is, relative to educated respondents. 30% of uneducated respondents answered 'very insecure' which is about the same proportion of respondents with completed Masters/PHD that replied 'secure'.

**Figure 38. (By occupation)**



In general, employers feel more insecure than other occupational groups, answering strongly with 'very insecure' and weak with 'secure'.

**Figure 39. (By ethnicity)**

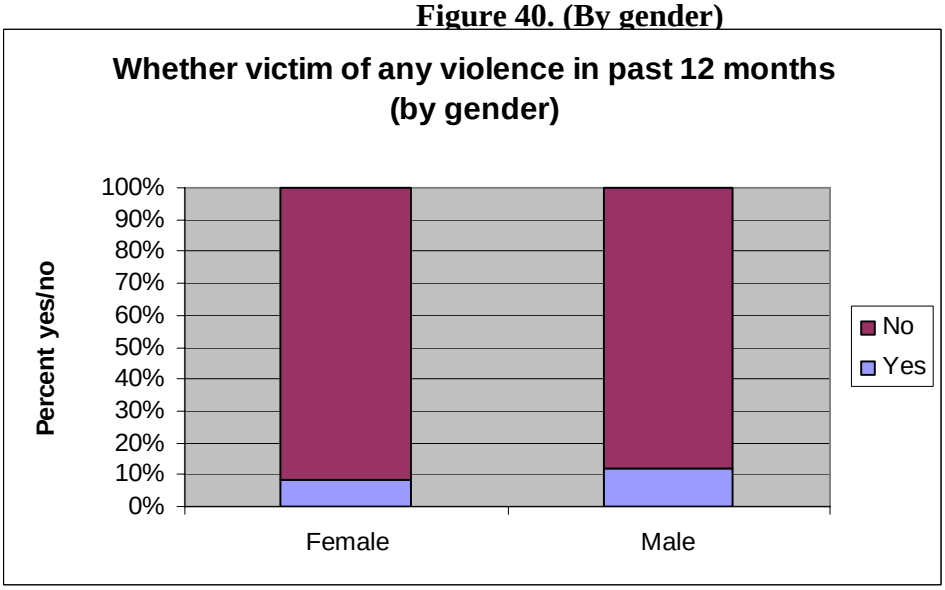



There is no clear difference in the way respondents from different ethnic groups answered to this question. 'Insecure' is still the dominant answer to this question but not the majority answer.

### *b) Results of People's Security Survey (South Africa)*

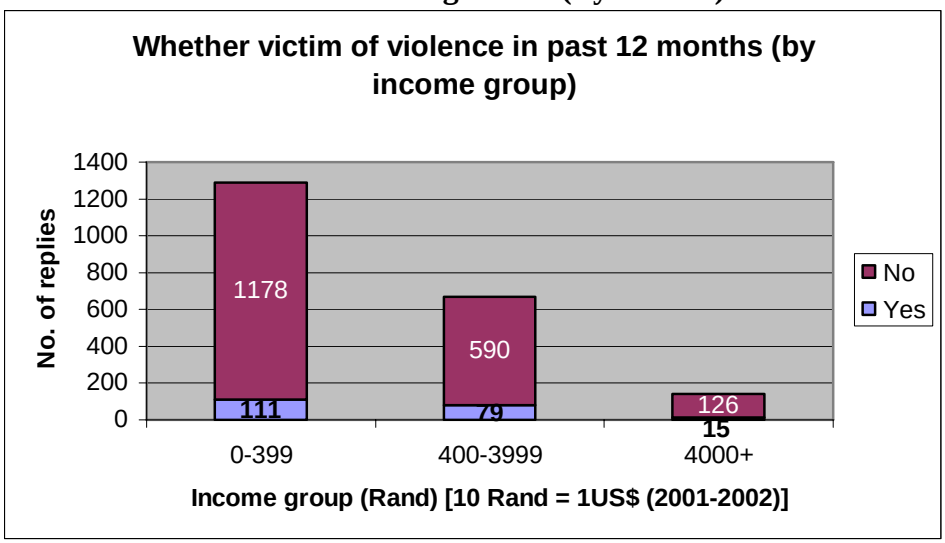
Question: In the past 12 months, were you personally ever a victim of any kind of violence?

**Figure 40. (By gender)**



Only a slightly higher proportion of males than females were victims of some form of violence in the past 12 months. The vast majority of respondents answered 'no' to being a victim of violence.

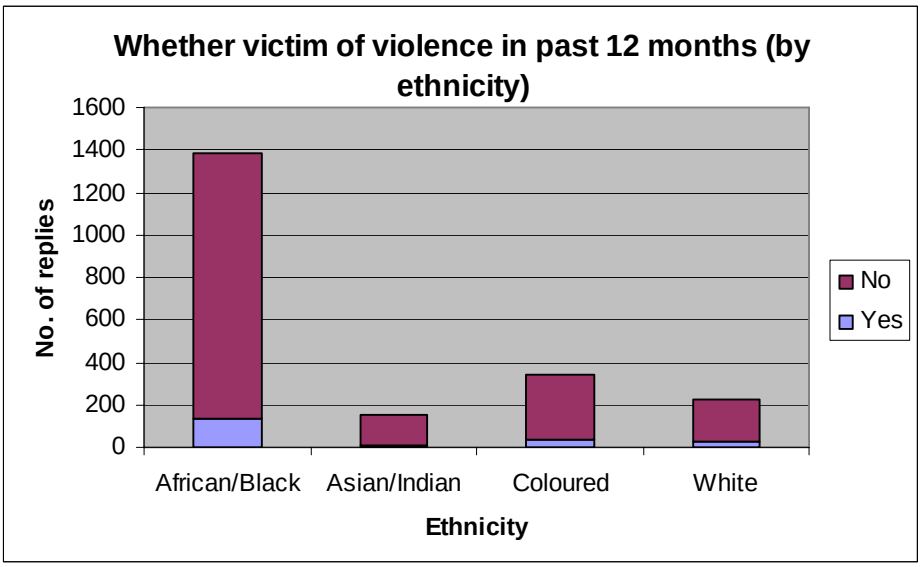
**Figure 41. (By income)**




Despite large differences in the number of respondents from the lower and higher income levels (as seen above with the data labels on the columns), it is reasonable to suggest that the PSS survey respondents are somewhat representative of the income distribution of South Africa, which is extremely unequal. As indicated above, the vast majority of people fall in the low-income category[22], this is a condition of our sample that arguably reflects the reality of South African income disparity and poverty. No sample is perfectly representative, thus limiting our conclusions, yet simple analysis of PSS data shows some interesting trends, which debatably have wider significance. For example the graph above shows us that more people (in absolute terms) from the lowest income group experienced violence than that from other income groups.

[22] The UNDP National Human Development Report for South Africa (2000) considered households earning less than 352 Rand per month, as poor. All income figures refer to monthly income.

**Figure 42. (By ethnicity)**

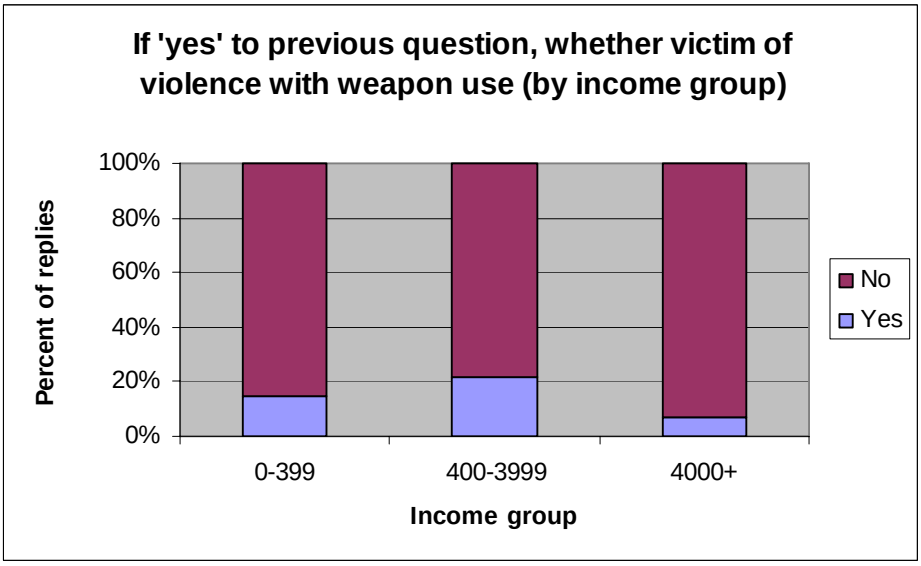



The trend is clear to see, where Africa/black people are more likely to be a victim of violence than any other ethnic group.

Question: If 'yes' to the previous question, what kind of violence?

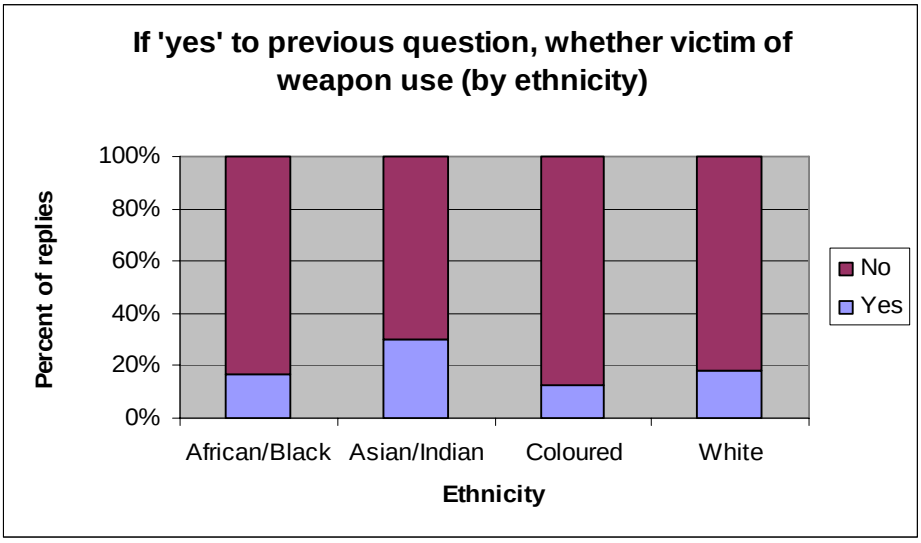
*Weapon use:*

**Figure 43. (By income)**




The middle income group answered proportionally more to being a victim of violence with the use of a weapon. The least at risk are the respondents who fall into the highest income group. Over 20% of respondents in the middle income group who answered 'yes' to being a victim of any kind of violence, were victims of violence with weapons.

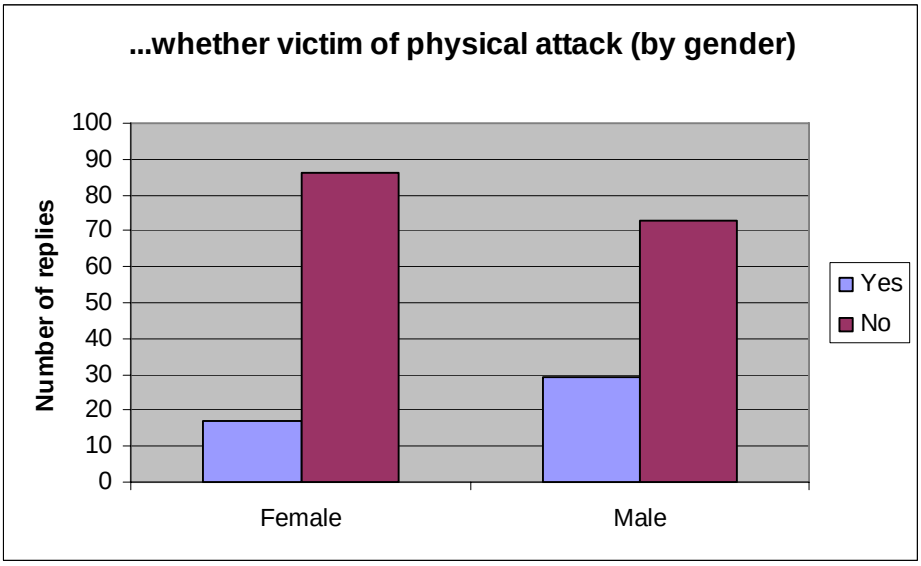
**Figure 44. (By ethnicity)**




By ethnicity, Asian/Indian people answered proportionally more to being a victim of violence with a use of a weapon than any other ethnic groups. Of 30% of Asian/Indians who replied 'yes' to being a victim of violence, were victims of weapon use.

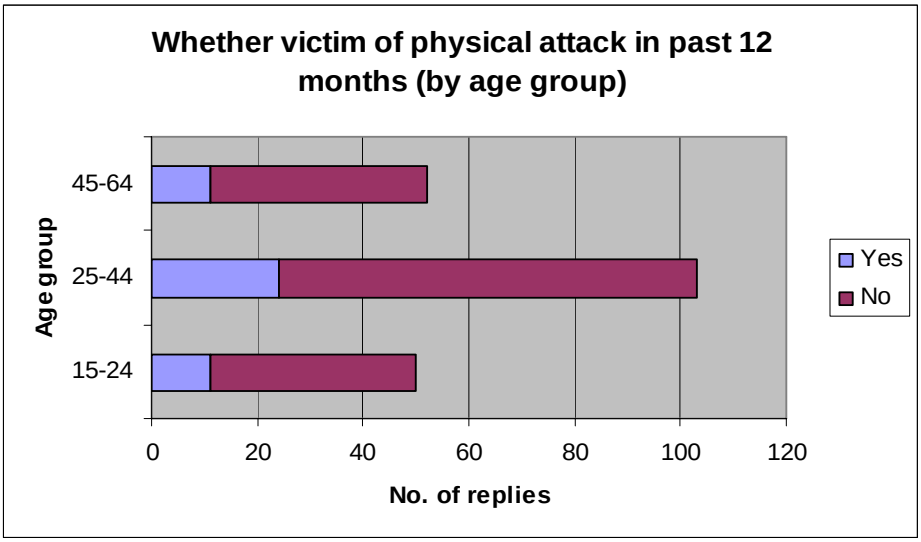
*Physical attack:*

**Figure 45. (By gender)**



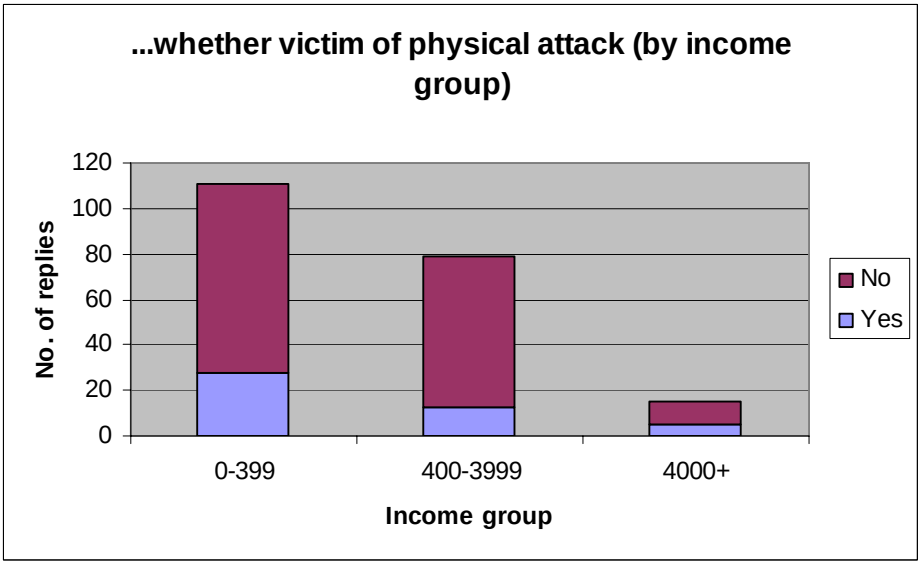

More males were victims of physical attack than females, both absolutely and relatively speaking.

**Figure 46. (By age)**




More respondents in the middle age group 25-44 were victims of physical attack than other age groups. Roughly 25% of respondents between 25-44 who replied 'yes' to being a victim of violence, were victims of physical attack.

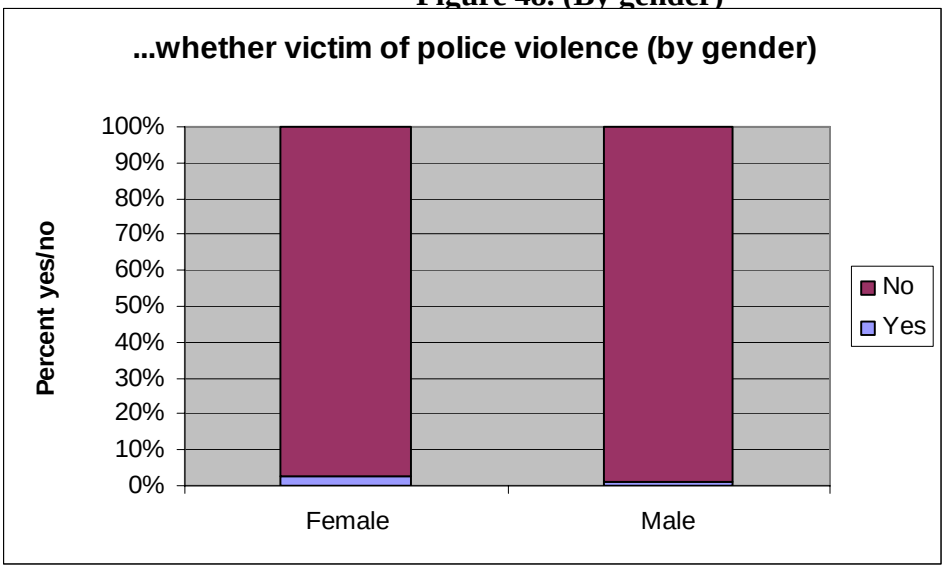
**Figure 47. (By income)**




Respondents in the lowest income group suffered more from physical attack than other income groups. However relatively speaking, more respondents in the highest income group (4000+ Rand) were victims of physical attack than other income groups.

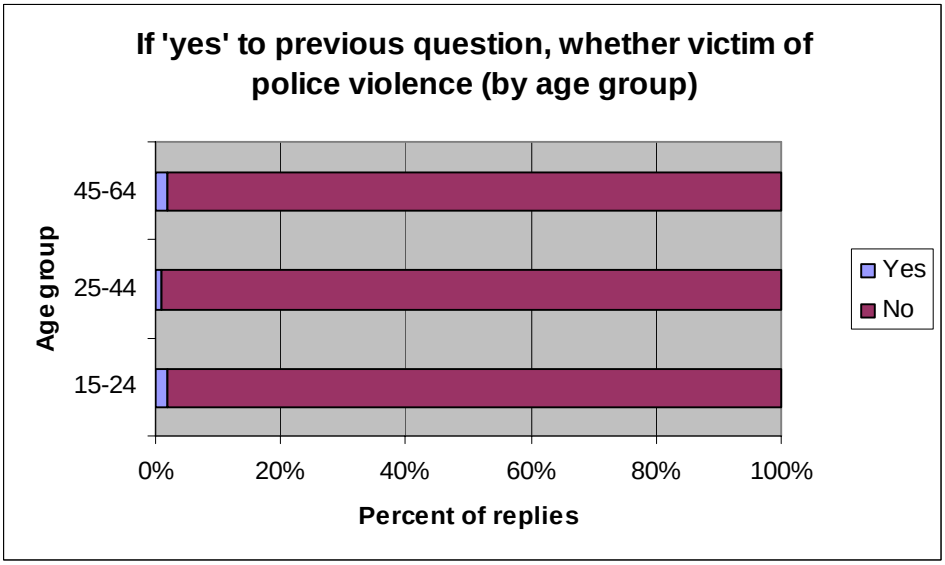
*Police violence:*

**Figure 48. (By gender)**



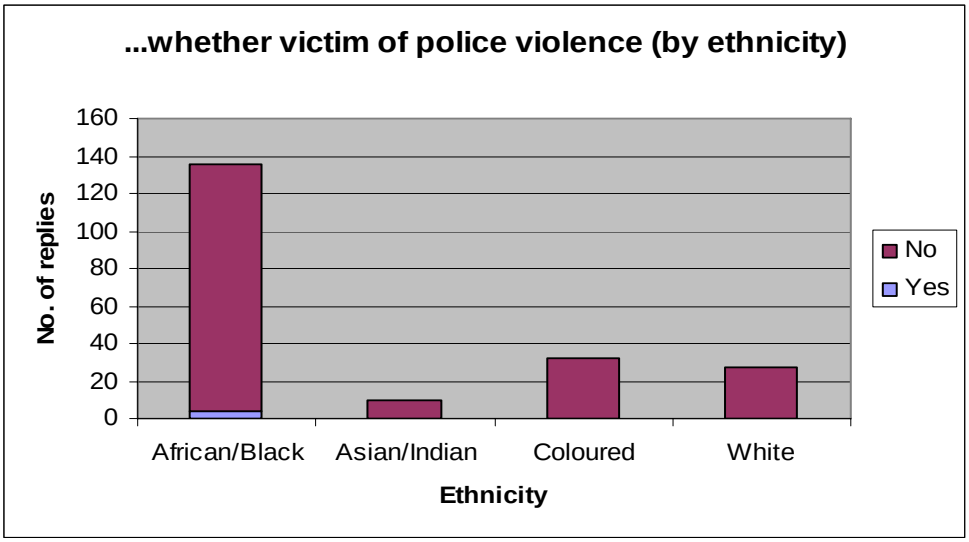

Unlike the general trend of victimisation, proportionally more females were victims of police violence than males.

**Figure 49. (By age)**




Those who answered yes to being a victim of police violence mainly fall into the lowest and highest age groups (15-24 and 45-64).

**Figure 50. (By ethnicity)**




Only African/Black people answered 'yes' to being a victim of police violence, whilst there were no victims among other ethnic groups.

Question: Have you ever been a victim of violence at work?

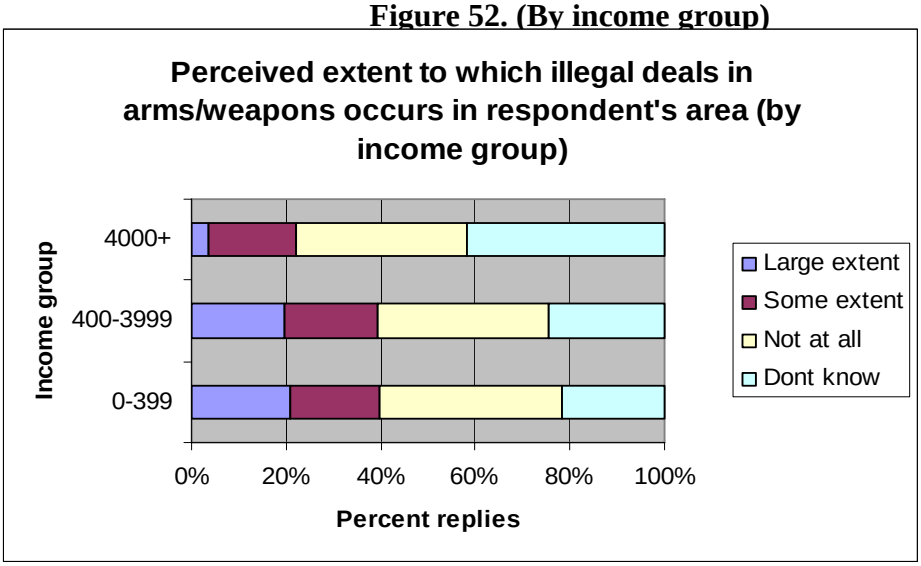
**Figure 51. (By gender)**


Proportionally more males (5%) were victims of violence at work than females (1%).

Question: Tell me to what extent do you think that each happens in your area. Do you think they happen to a large extent, some extent or not at all?

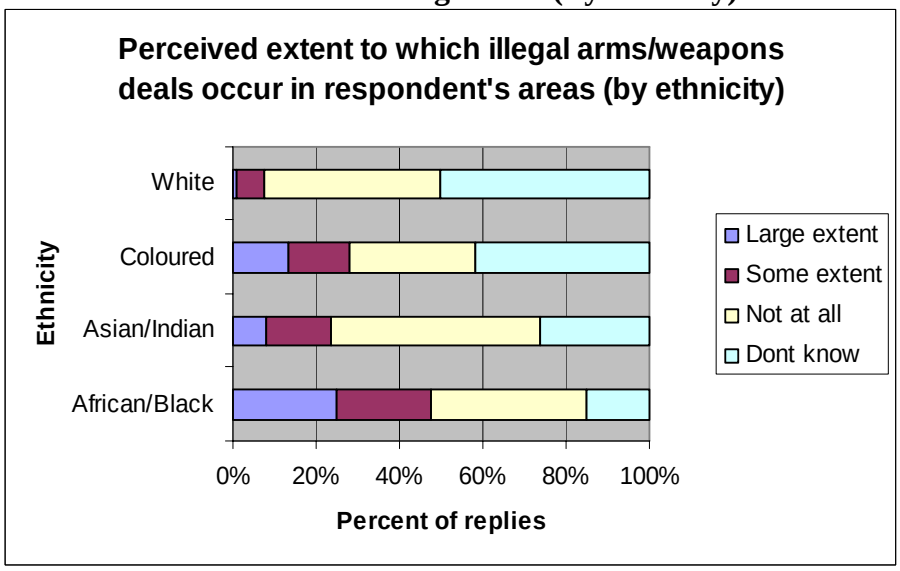
*Illegal deals in arms/weapons:*

**Figure 52. (By income group)**




Those in the highest income group perceive there to be substantially less illegal deals in arms/weapons than those from other income groups, however the richer respondents also replied with 'don't know' more than others. About 20% of respondents from the other two income groups replied that they thought illegal deals in weapons occurred in their area.

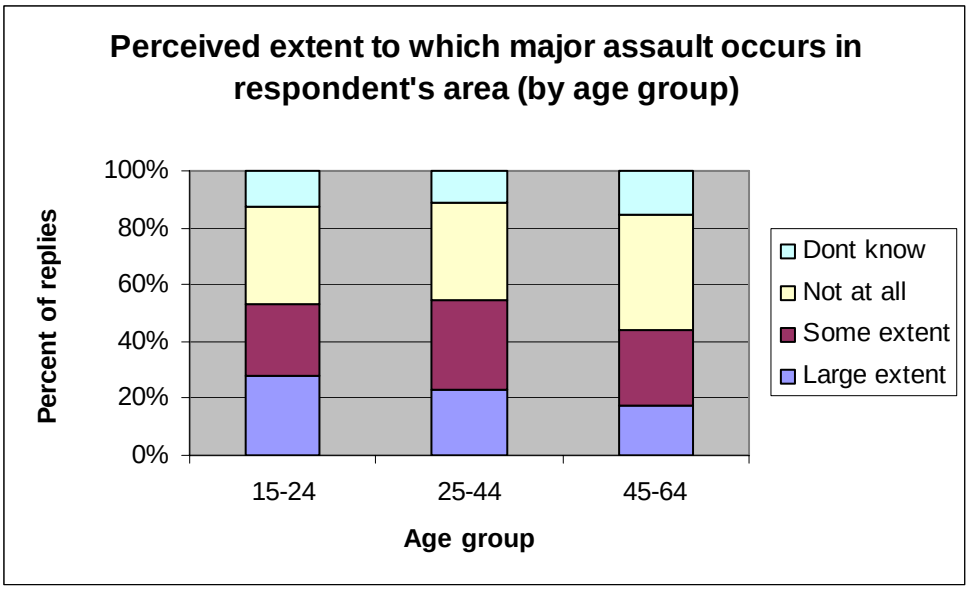
**Figure 53. (By ethnicity)**




White people perceive there to be less illegal deals in weapons than other ethnic groups with over 45% answering 'not at all'. Whereas over 25% of Black people answered 'large extent' when asked their opinion to what extent weapon dealings in their area occur. Black respondents also seem more aware of this activity in this area since they replied least with 'don't know' than other ethnic groups.

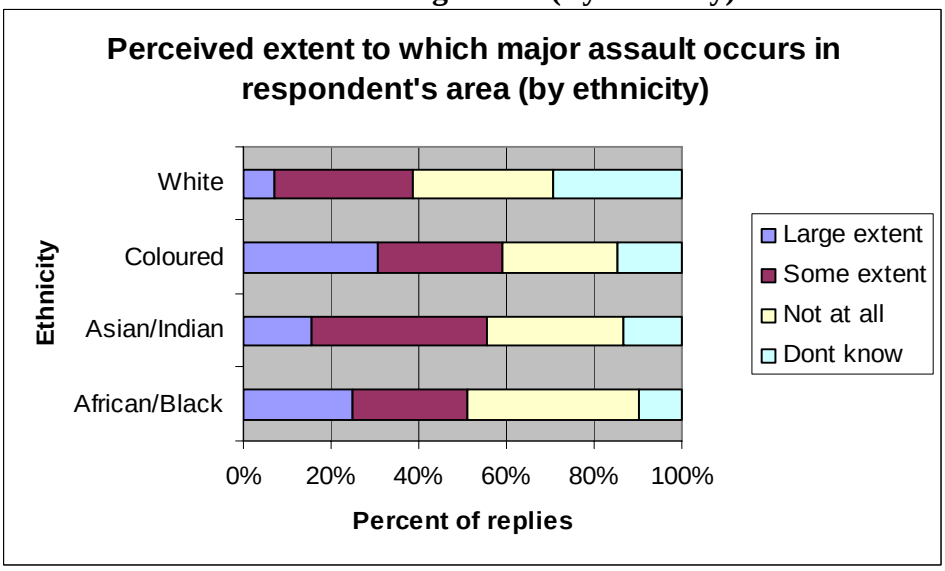
*Major assault:*

**Figure 54. (By age)**




The extent to which people perceive major assault occurs, falls with age. That is, nearly 30% of respondents between 15-24 believe major assault occurs to a large extent compared to less than 20% of respondents between 45-64.

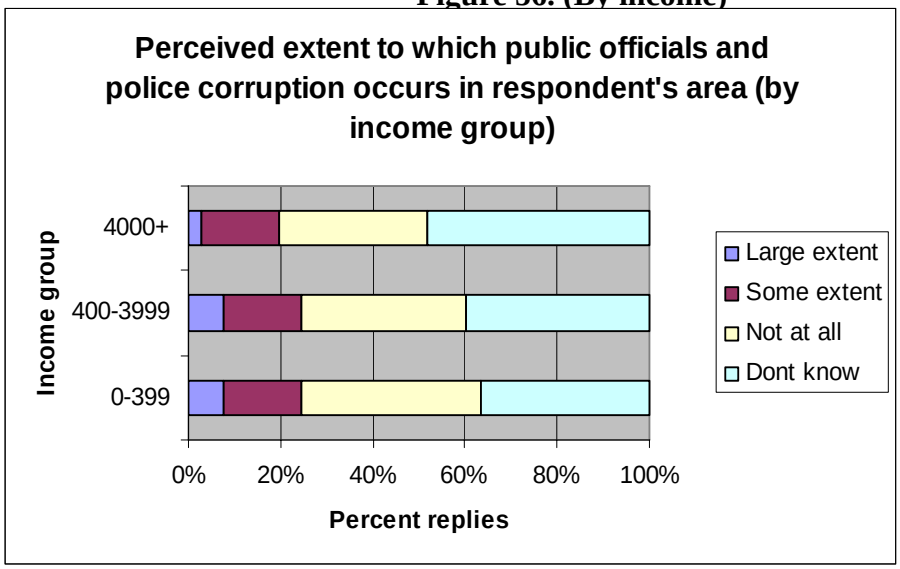
**Figure 55. (By ethnicity)**




Over 30% of coloured people answered 'large extent' when asked their opinion about major assault in their area. Proportionally speaking, this is three times the figure of White respondents answering who answered the same.

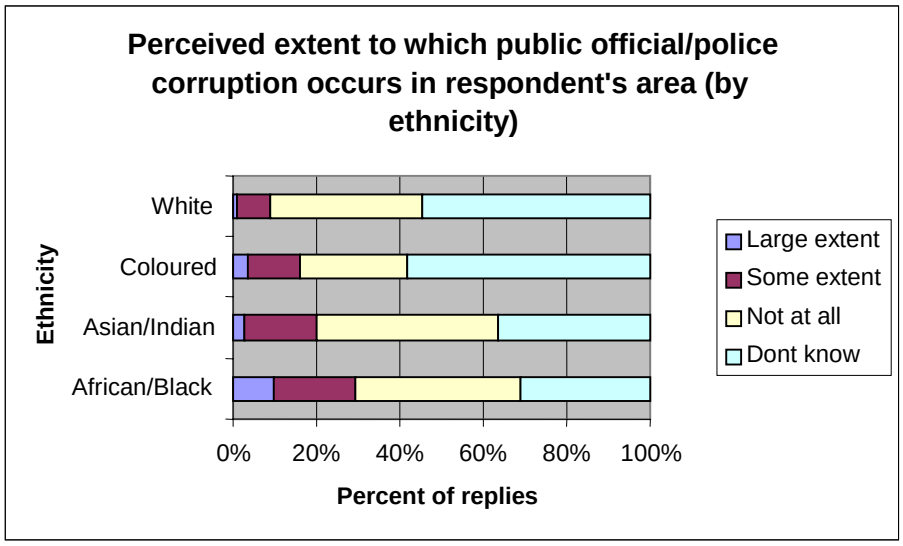
*Public official/police corruption:*

**Figure 56. (By income)**




Respondents from the highest income group answered least with 'large extent' when asked about the extent to which public official/police corruption occurs in their area. The other income groups answered somewhat similarly.

**Figure 57. (By ethnicity)**




White respondents perceive there to be less public official/police corruption than other ethnic groups. Almost 10% of African/Black respondents answered 'large extent' compared to about 1% of Whites. However there seems to be a general lack of awareness of this activity as the majority answer among both the White and Coloured respondents was 'don't know'.

## 5. Concluding Remarks

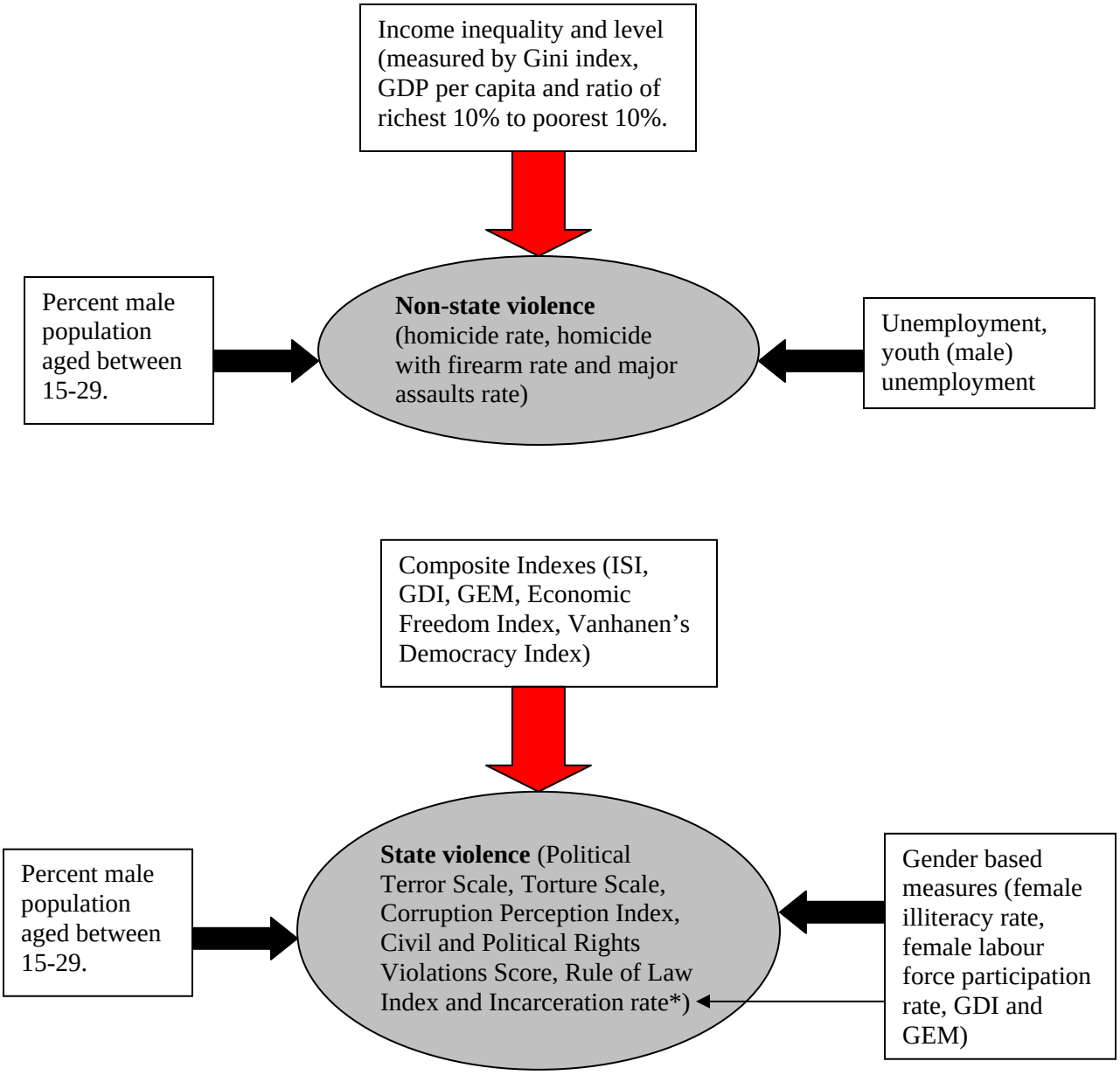
This exercise has attempted to compare many countries in order to draw inferences that have greater global applicability. The general finding is that there is an association between worse economic conditions and high levels of violence. However we captured a broad range of socio-economic and violence variables to avoid being too categorical e.g. poorer/unequal countries suffer more violence. Instead, analysing specific variables provides strong evidence that inequalities in income, gender development or education etc. explain to a small, moderate or high degree, the existence of specific types of violence in and between countries.

Measuring the effect of certain socio-economic variables on non-state and state violence is an imperfect exercise, however using trend data, what we have achieved is to highlight the relationships between key explanatory socio-economic variables that account for variations in violence and human rights violations. There are inferential limitations to our analyses, yet the consistency of the relationships between socio-economic and violence variables below, enable us to concur that minor inaccuracies in data are unlikely to have much affect on general inferences drawn from cross national studies.

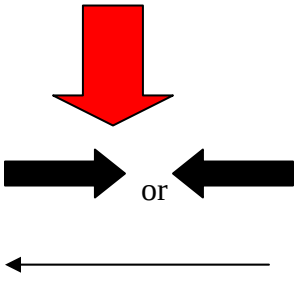
*Key relationships:*

6) Measures of non-state violence (homicides, major assaults) are highly correlated with specific measures of income inequality (Gini, ratios and GDP per capita) and economic development (electricity consumption). In other words, income inequality and development are strong predictors of the level of non-state violence in and between countries e.g. non-state violence is higher in countries where a high proportion of people are economically deprived.
7) After income inequality, unemployment and youth (male) unemployment are the most consistent (moderate strength) correlates of non-state violence measures e.g. non-state violence (homicides, major assaults) is higher in countries where unemployment, in particular youth (male) unemployment is higher.
8) Measures of state violence (Political Terror Scale, Torture Scale, incarceration rate) are highly correlated with broader composite socio-economic indexes, e.g. ISI, GDI, GEM, Economic Freedom Index and Vanhanen's Democracy Index. As a single powerful explanatory socio-economic variable, income has a great influence on state violence as well as non-state violence.
9) Gender-based measures are strong correlates of state violence measures e.g. female literacy rates, female labour force participation, GDI and GEM influence incarceration rates (see incarceration matrix). In other words, the greater empowerment and equality of women, the lower the state violence and vice versa.
10) Generally speaking, demographic variables (population density, population growth etc.) are not significant and not strong predictors of violence, whether state or non-state. However the variable 'males aged between 15-29 as a percent of the total population' is a consistent explanatory variable of state and non-state violence i.e. the higher the percentage of young males, the greater the likelihood of violence.

**Key Relationships**




**Key**




= Strong predictor/s (correlation coefficient 'r' = 0.5+)

= Moderate predictor/s (coefficient 'r' = 0.5 – 0.3)

= Consistent predictors of indicated type of violence

As illustrated by the various matrixes throughout the study, relationships between socio-economic variables and violence clearly exist and coefficients have told us the direction (positive or negative) and strength of relationships. The use of robust levels of significance ($p = 0.01$ and $p = 0.05$) show us that the probability that the relationships highlighted above do **not** hold, is only between 1% and 5%. Correlations have revealed strong but statistically insignificant (not falling within 1 and 5% significance) relationships and conversely, weak but significant relationships. This study of statistical association cannot prove causal connections (e.g. state that socio-economic variables cause violence) however we have been able to disprove the statement that socio-economic variables have **no** effect on violence. More importantly, based on our correlation findings, it is reasonable to suggest that influencing socio-economic development and inequality may be a realistic strategy to provoke change in the levels of violence both non-state and state.

The observations above have important policy relevant repercussions in the manner that addressing explanatory variables of violence such as inequality in income and gender is a possible avenue for addressing levels of violence. One can speculate that the potential for state and non-state violence is great in a country that has a combination of high income inequality, low economic development, low gender equality and a high percentage of males among its population. These factors do not explain all incidences of our chosen specific measures of violence since there are undoubtedly other factors involved, however they do symbolise/represent greater issues that explain violence to a great extent. For example, based on our earlier findings under 'incarceration rates', investing in education (measured by literacy rates) can influence female labour force participation which in turn influences gender equality politically, socially and economically. The observations made above are linked in one way or another but diminishing the potential for violence has no quick fix solution, it requires long term socio-economic planning.

Provoking change through fostering international compliance with human rights standards is an option open to policymakers, however the gap between what is claimed in principle and what is observed in practice will remain. One such example is torture. Torture is illustrative of one of many salient forms of violence, and compiling and analysing data on this was crucial for this study, even more so when its prohibition is proclaimed internationally. However as Hathaway stated in her paper[23], countries that ratify conventions on torture do not necessarily have better human rights rating. If torture is a manifestation of the aggravation of political, economic and social conflicts often in the context of unequal distribution of resources, then we must understand it by combining standard based scales (e.g. Torture Scale) and socio-economic characteristics. There is no critical mass by which a country's socio-economic situation creates an ideal environment for torture, yet as our findings demonstrate, there is a higher probability for torture, the lower the level of development of a country and higher the income inequality.

In addition to our correlations, the People's Security Surveys in Argentina and South Africa have given us an invaluable insight into the socio-economic breakdown of

[23] Hathaway, O. A. (2002). *Do treaties make a difference?* Yale Law Journal 111, June 2002.

respondents who have or have not experienced violence. The general trends are the following:

1) Males are more likely to be a victim of any kind of violence than females, however in South Africa's case, there are proportionally more females who are victims of police violence than males.
2) Respondents in the 24-44 age range are more likely to experience non-state and state violence than younger or older age groups. Respondents in the oldest age range 45-64 perceive there to be more violence than younger age groups.
3) Those in the middle income bracket are more likely to experience non-state violence more than other income groups, however strangely, they also perceive violence to be less a problem than other income groups. Those at the bottom income bracket are more likely to experience police violence and those at the top income bracket, least.
4) Uneducated respondents are more likely to be a victim of any kind of violence and perceive violence to be more of a problem than those educated.
5) Non-paid family workers and casual/seasonal workers are more likely to experience and perceive more violence than other occupational groups.
6) Black people experience more violence (especially police violence) and generally perceive violence to be more of a problem than other ethnic groups.

These socio-economic inequalities reinforce the observations made at the macro level regarding income inequalities, economic development and differences in gender empowerment in and between countries as explanatory in analysing variations in the level and type of violence.

This exercise considered the relationship between socio-economic inequalities and violence in summary form, not in a comprehensive form. There are of course many interesting variables that have not been examined and further analysis requires greater systematic analysis of existing data, enabling us to better understand the context of violence and socio-economic development and inequality that affects us all directly or indirectly. A more exhaustive analysis could strengthen causal inferences but this would require more data and multivariable/multivariate analysis. Even so, this unpretentious study has been generally theory affirming, that is, in accordance to what a large body of existing literature purports – inequality lies at the root of violence.

In sum, the realisation of human rights for all will become increasingly difficult in a climate of violence, which is antithetical to the notion of rights, whether they be economic, social, cultural or political. Violence can undermine people's spiritual and material well-being, compromise human dignity and create a climate of fear that endangers personal security and erodes the quality of life. Living conditions that would permit people to lead peaceful and secure lives require good governance, whereby a state is willing to provide a political and socio-economic 'enabling environment'. Conversely, 'bad governance' can worsen social conditions that contribute to a rise in violence where the fruits of political and socio-economic development are not equitably distributed among the people.

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## Appendices

### A. List of Countries Used for Correlations (63):

1. Argentina
2. Armenia
3. Australia
4. Azerbaijan
5. Belarus
6. Bulgaria
7. Canada
8. Chile
9. Colombia
10. Costa Rica
11. Cote D'Ivoire
12. Czech Rep
13. Denmark
14. Dominica
15. Estonia
16. Finland
17. France
18. Georgia
19. Germany
20. Greece
21. Hong Kong
22. Hungary
23. Iceland
24. India
25. Indonesia
26. Ireland
27. Italy
28. Jamaica
29. Japan
30. Korea, Rep
31. Kyrgyzstan
32. Latvia
33. Lithuania
34. Macedonia
35. Malaysia
36. Mauritius
37. Mexico
38. Moldova
39. Netherlands
40. New Zealand
41. Norway
42. Papua New Guinea
43. Poland
44. Portugal
45. Romania
46. Russian Fed
47. Saudi Arabia
48. Slovakia
49. Slovenia
50. South Africa
51. Spain
52. Switzerland
53. Thailand
54. Tunisia
55. Ukraine
56. United Kingdom
57. United States
58. Uruguay
59. Uzbekistan
60. Venezuela
61. Yemen
62. Zambia
63. Zimbabwe

## B. Construction of Corruption Perception Index and Rule of Law Index

### Corruption Perception Index

To avoid repetition, please consult the link below for a comprehensive explanation of this index:

http://www.transparency.org/cpi/2003/dnld/framework.pdf

### Rule of Law Index

Several indicators which measure the extent to which agents have confidence in and abide by the rules of society are included i.e. perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts. Considered together, these indicators measure the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions, and importantly, the extent to which property rights are protected.

*Sources of Governance Data*

- Cross-Country Surveys of Firms: Global Competitiveness Survey, World Business Environment Survey, World Competitiveness Yearbook, BEEPS
- Cross-Country Surveys of Individuals: Gallup International, Latinobarometro, Afrobarometer
- Expert Assessments from Commercial Risk Rating Agencies: DRI, PRS, EIU, World Markets Online
- Expert Assessments from NGOs, Think Tanks: Reporters Without Borders, Heritage Foundation, Freedom House, Amnesty International
- Expert Assessments from Governments, Multilaterals: World Bank CPIA, EBRD, State Dept. Human Rights Report

*Ingredients for Rule of law index*

a) Surveys of Firms and topic of questions asked:

- BEEPS *Courts Honest? Crime? Property rights protected?*
- Global Competitiveness Survey *Crime, money laundering, judicial independence, protection of financial assets*
- World Competitiveness Yearbook *Justice fairly administered, personal security and private property protected*

b) Surveys of Individuals and topic of questions asked:

- Gallup *Trust in legal system*
- Risk Rating Agencies

- BERI *Contract enforcement*
- DRI *Costs of crime, enforceability of contracts*
- EIU *Costs of crime, enforceability of contracts, property rights protection*
- PRS *Law and order*
- World Markets Observer *Judicial independence, crime*
- Think Tanks
- Freedom House *Rule of law*
- Heritage Foundation *Property rights, black market activity*
- Governments
- State Dept Human Rights Report *Judicial independence*

For a general technical discussion on building governance indicators such as the Rule of Law Index, see:

http://www.worldbank.org/wbi/governance/pdf/govmatters3.pdf (pages 8-12).

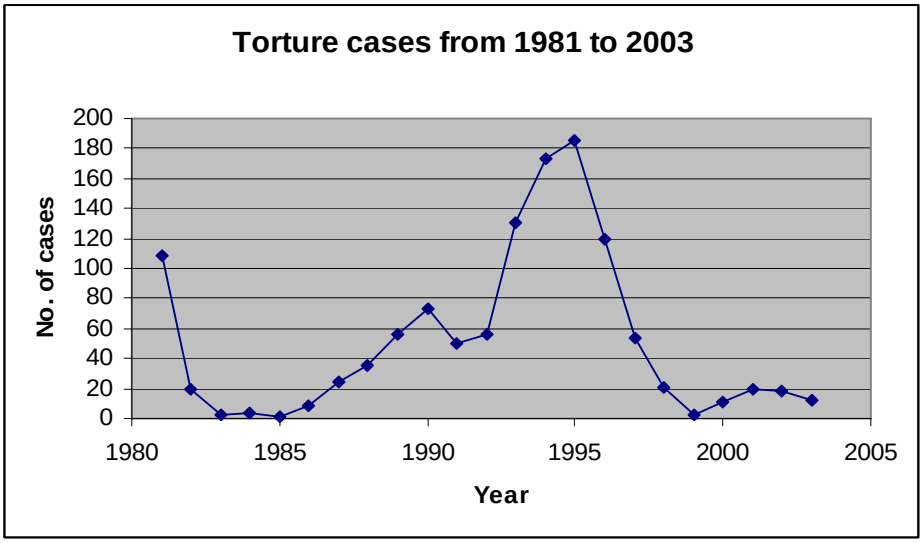
A technical summary of aggregation methodology involved in the construction of this index:

- Unobserved Components Model (UCM) is employed to aggregate the various responses in the broad 6 clusters. This model treats the "true" level of governance in each country as unobserved, and assumes that each of the available sources for a country provide noisy "signals" of the level of governance.
- Estimate of governance: *weighted average* of observed scores for each country, re-scaled to common units.
- Weights are proportional to *precision* of underlying data sources. Precision depends on how strongly individual sources are correlated with each other.
- Margins of error reflect (a) *number of sources* in which a country appears, and (b) the *precision of those sources.* The resulting estimates of governance have an expected value (across countries) of zero, and a standard deviation (across countries) of one. This implies that virtually all scores lie between -2.5 and 2.5, with higher scores corresponding to better outcomes.

**C. Data sent by partners from Egypt and South Africa:**

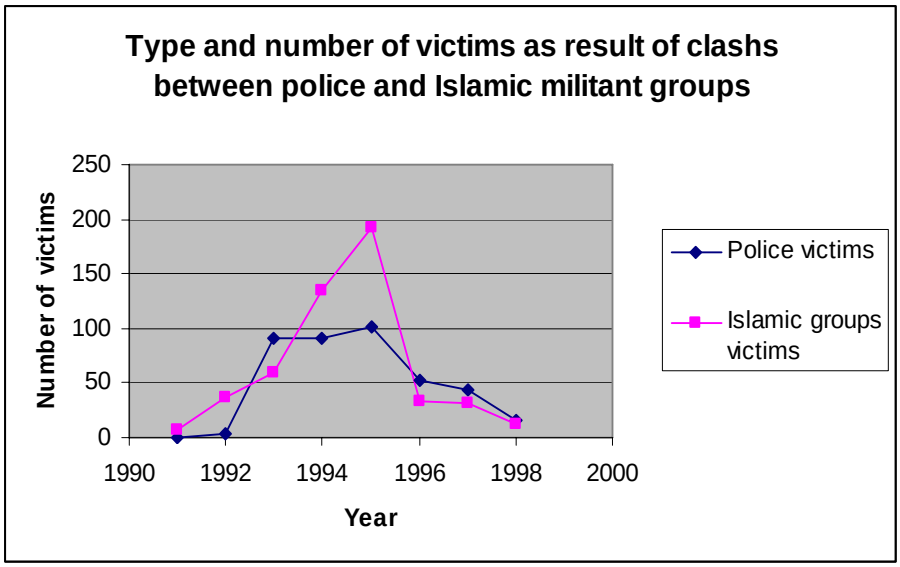
**An Empirical Glance at State Violence in Egypt (Land Centre for Human Rights - LCHR)**

Concerning the compilation of relatively recent state violence data, the Human Rights Association and Assistance for Prisoners monitored 1124 cases concerning torture over 1981 – 1999.




Source: LCHR

The number of torture cases peaked at over 180 in 1995. 1995 was also a year of notable state violence if one considers the graph below:




Source: The Human Rights Association for the Assistance of Prisoners

This does not necessarily mean that 1995 was the most 'violent' year in terms of state torture or political violence, but that there were more reported cases for torture and reported deaths as a result of fighting between the police and Islamic groups in 1995 than any other year for Egypt.

The phenomenon of forced disappearances is relatively new to Egypt and it is a form of state violence that is not practiced as widely as such forms as torture and detention. Nonetheless there have been several well recorded cases of forced disappearance and it is reasonable to suggest that fear of state reprisals is possibly a factor in explaining the low

numbers of complaints regarding forced disappearances either by the victim themselves or victim's families.

| | | Share of responsibility | | |
|---|---|---|---|---|
| Year | No. of cases of forced disappearance | Police % | State security % | Unidentified security agencies % |
| 1992 | 4 | 50 | 50 | |
| 1993 | 4 | 75 | 25 | |
| 1994 | 8 | 12.5 | 87.5 | |
| 1995 | 8 | 12.5 | 87.5 | |
| 1996 | 13 | 23 | 46 | 31 |
| 1997 | 10 | 50 | 40 | 10 |
| 1998 | | | | |
| 1999 | | | | |
| 2000 | 3 | 100 | | |
| 2001 | 2 | | 100 | |

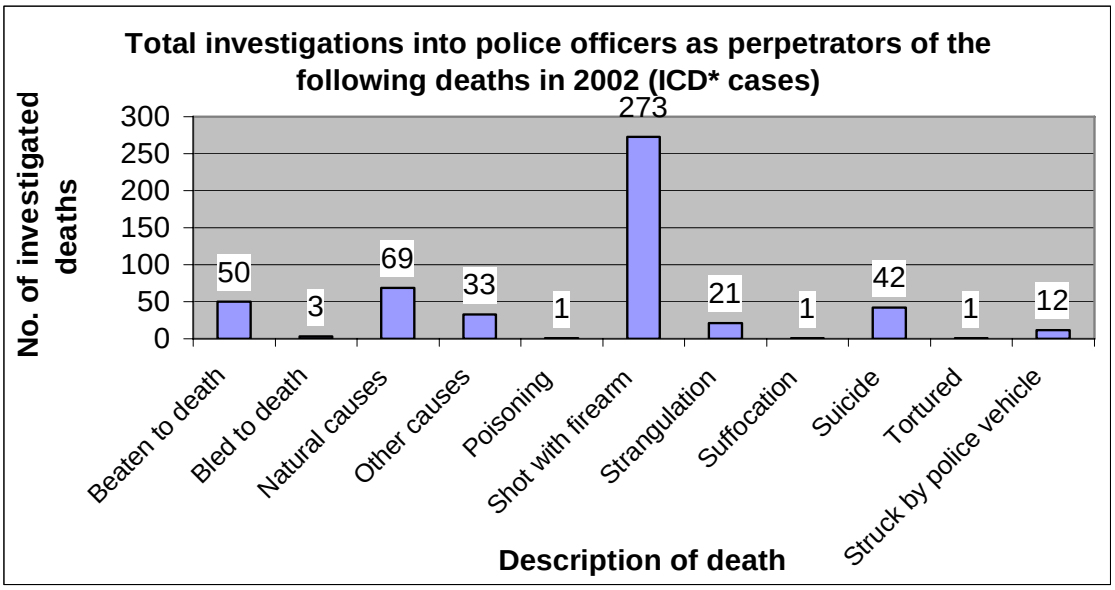
Source: EOHR annual reports of 2001, 2000, 1996, 1991, 1990 and the report by the Human Rights Association for the Assistance of Prisoners, 2001

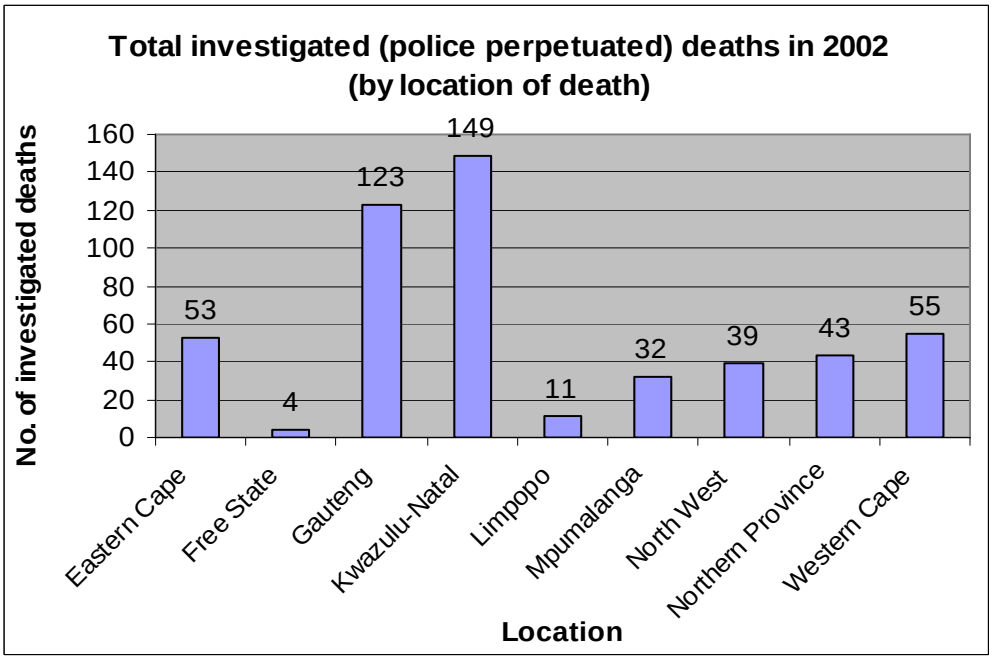
Another noteworthy phenomenon is temporary forced disappearance facing many detainees. According to the data provided by the Committee for Defending Democracy, the number of detainees is estimated at 20,000. The vast majority of such detainees are not allowed to contact their families or to inform them that they have been detained. Moreover, the authorities refuse to provide the families with any information about such detainees, particularly during the period of detention prior to the issuance of the detention decision. Accordingly, the detainee spends a period of time where he/she is under forced disappearance before family members are given information concerning the detainee or how to contact him/her. A total 52 cases of coercive disappearance have been monitored from 1992 to 2001.

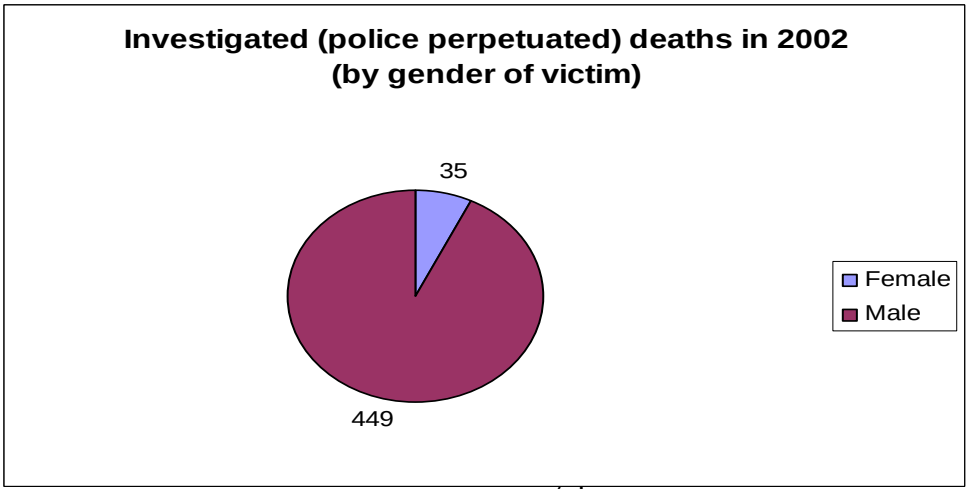
## An Empirical Glance at State Violence in South Africa (Human Rights Institute of South Africa – HURISA)

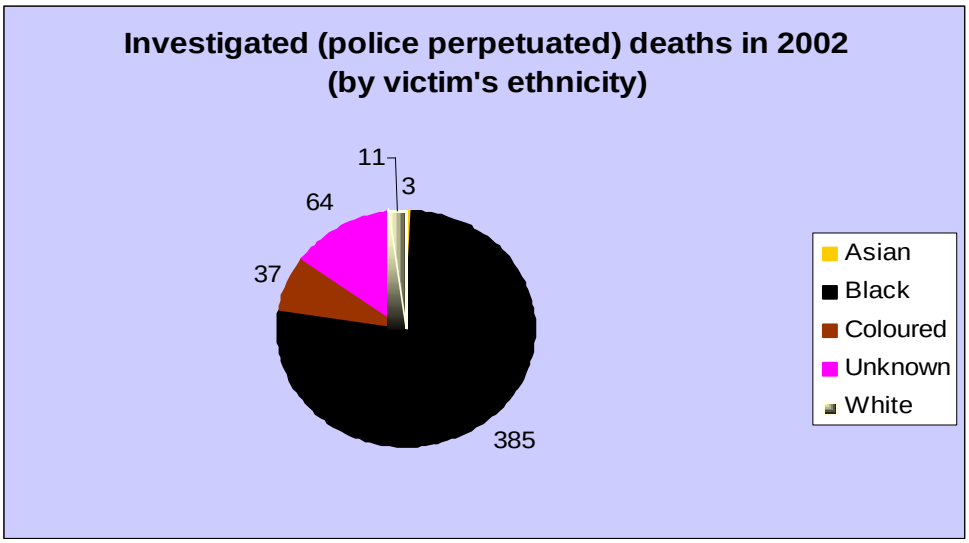
The ICD/Independent Complaints Directorate mandate is the Police. They do investigations into SAPS members as the perpetrators of various criminal activities.

*Investigations of Independent Complaints Directorate (ICD) into deaths:*


Total investigations into police officers as perpetrators of the following deaths in 2002 (ICD* cases)
No. of investigated deaths
300
250
200
150
100
50
0
50
3
69
33
1
273
21
1
42
1
12
Beaten to death
Bled to death
Natural causes
Other causes
Poisoning
Shot with firearm
Strangulation
Suffocation
Suicide
Tortured
Struck by police vehicle
Description of death


Total investigated (police perpetuated) deaths in 2002 (by location of death)
No. of investigated deaths
160
140
120
100
80
60
40
20
0
53
4
123
149
11
32
39
43
55
Eastern Cape
Free State
Gauteng
Kwazulu-Natal
Limpopo
Mpumalanga
North West
Northern Province
Western Cape
Location

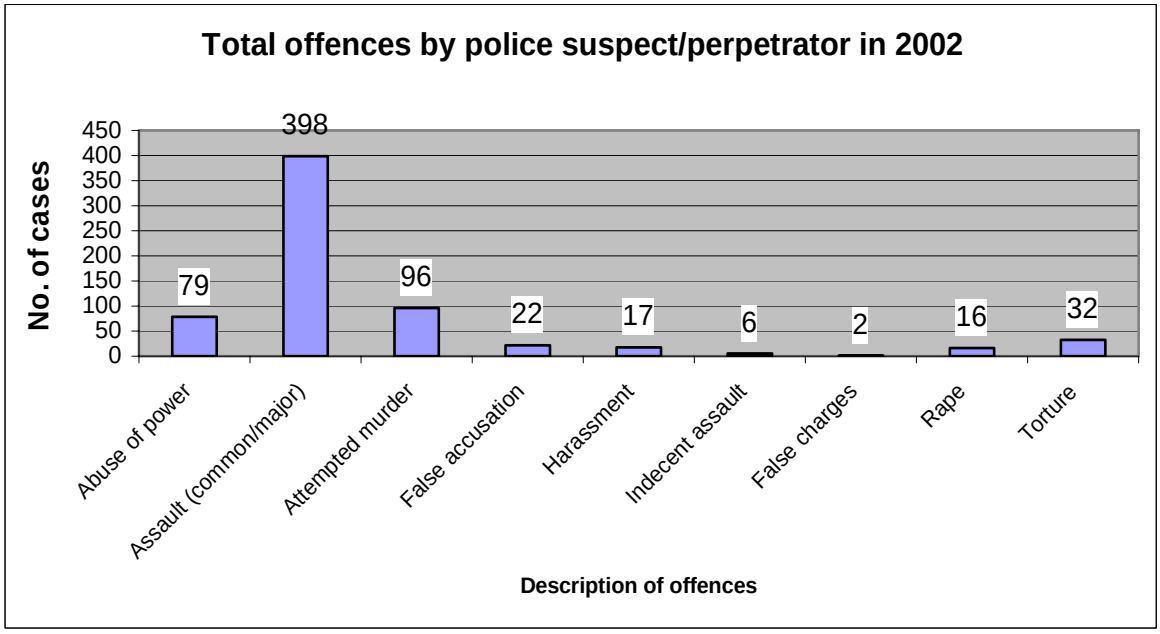

Investigated (police perpetuated) deaths in 2002 (by gender of victim)
35
449
Female
Male

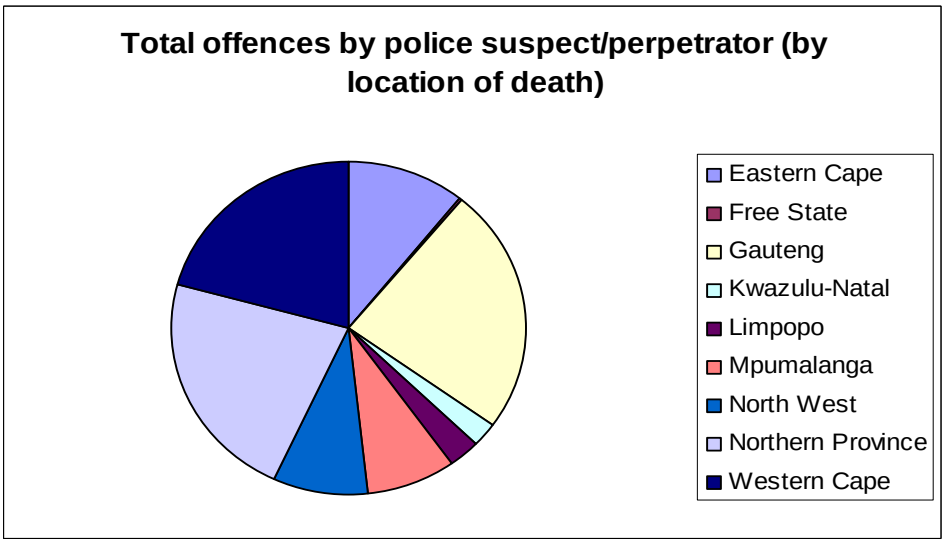


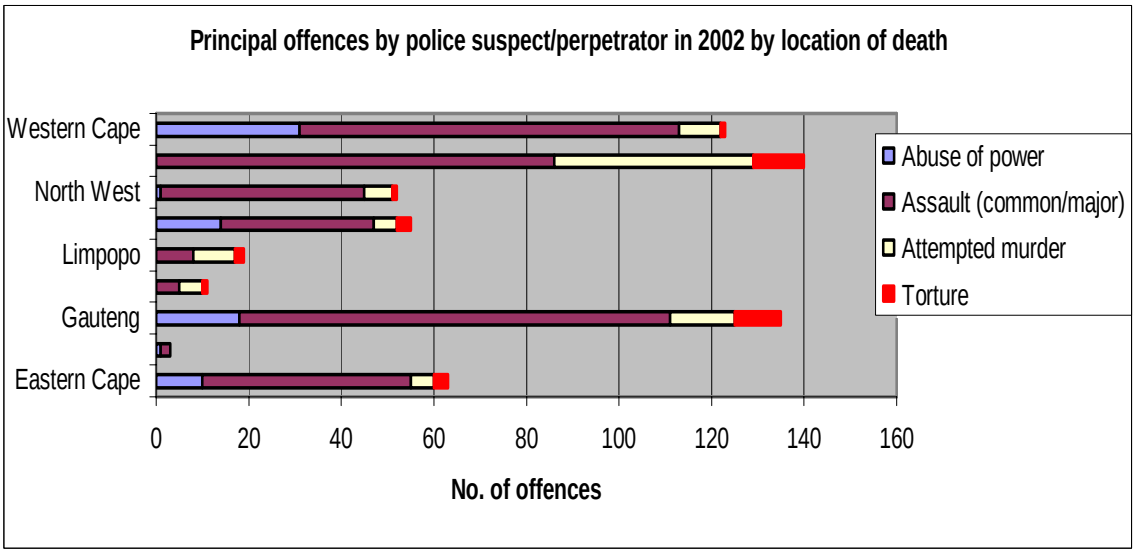

| | Victim's ethnicity | | | |
|---|---|---|---|---|
| **Description of death** | Asian | Black | Coloured | White |
| Beaten to death | 1 | 32 | 7 | 0 |
| Bled to death | 0 | 3 | 0 | 0 |
| Natural causes | 0 | 50 | 5 | 3 |
| Other causes | 0 | 26 | 0 | 3 |
| Poisoning | 0 | 1 | 0 | 0 |
| Shot with firearm | 1 | 223 | 9 | 1 |
| Strangulation | 0 | 11 | 6 | 3 |
| Suffocation | 0 | 1 | 0 | 0 |
| Suicide | 0 | 30 | 6 | 1 |
| Tortured | 0 | 1 | 0 | 0 |
| Struck by police vehicle | 1 | 5 | 4 | 0 |

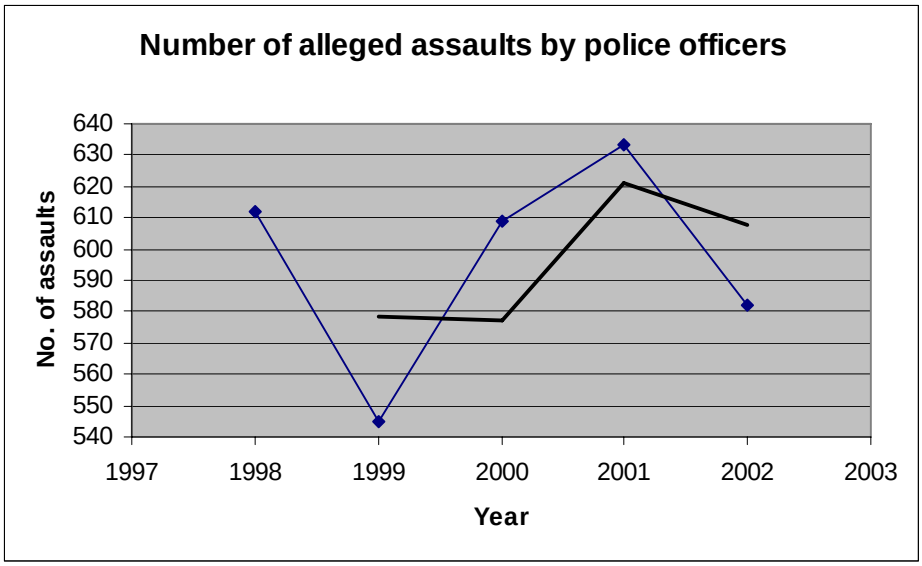
| | Victim's gender | |
|---|---|---|
| | Female | Male |
| Beaten to death | 1 | 48 |
| Bled to death | 0 | 3 |
| Natural causes | 6 | 57 |
| Other causes | 3 | 29 |
| Poisoning | 0 | 1 |
| Shot with firearm | 16 | 247 |
| Strangulation | 4 | 17 |
| Suffocation | 0 | 1 |
| Suicide | 1 | 36 |
| Tortured | 0 | 1 |
| Struck by police vehicle | 4 | 7 |

*Investigations into offences:*


Total offences by police suspect/perpetrator in 2002
No. of cases
450
400
350
300
250
200
150
100
50
0
79
398
96
22
17
6
2
16
32
Abuse of power
Assault (common/major)
Attempted murder
False accusation
Harassment
Indecent assault
False charges
Rape
Torture
Description of offences


Total offences by police suspect/perpetrator (by location of death)
Eastern Cape
Free State
Gauteng
Kwazulu-Natal
Limpopo
Mpumalanga
North West
Northern Province
Western Cape


Principal offences by police suspect/perpetrator in 2002 by location of death
Western Cape
North West
Limpopo
Gauteng
Eastern Cape
0
20
40
60
80
100
120
140
160
No. of offences
Abuse of power
Assault (common/major)
Attempted murder
Torture



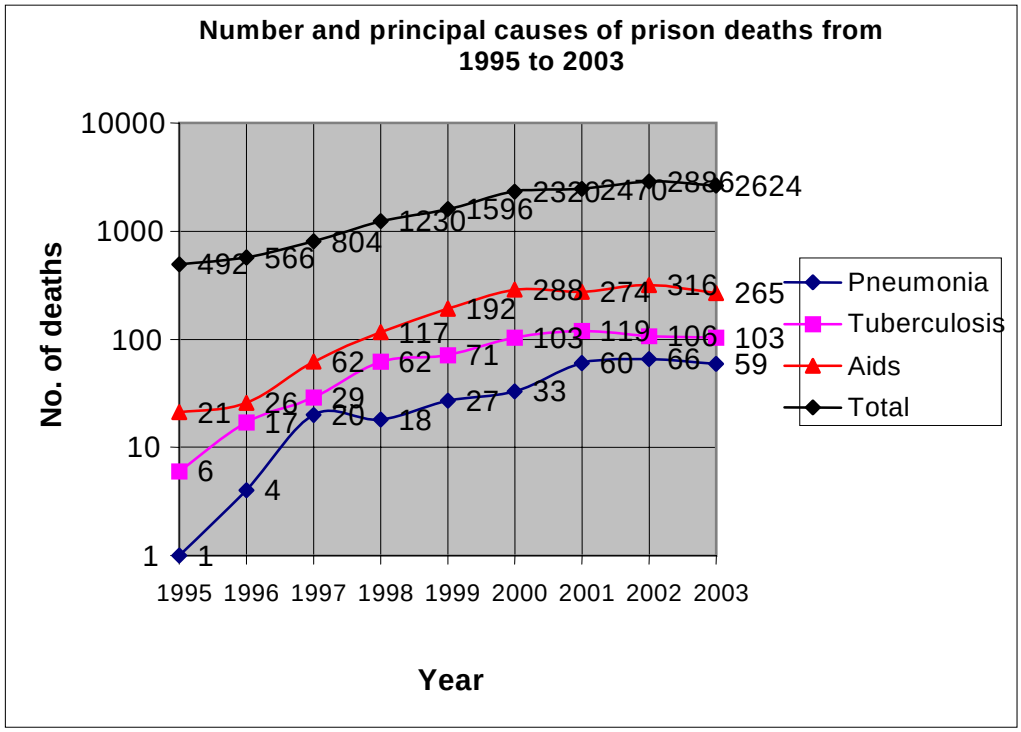

Crimes reported to the Military Police Agency:

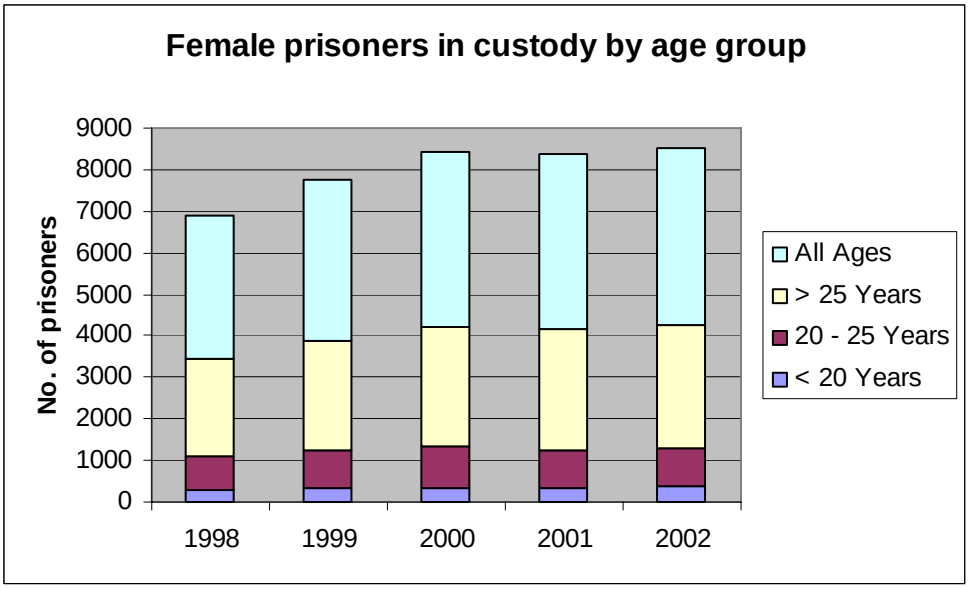
| **Crime Description** | | | **Year** | | |
|---|---|---|---|---|---|
| | **1998** | **1999** | **2000** | **2001** | **2002** |
| Murder | 0 | 0 | 0 | 1 | 0 |
| Attempted Murder | 22 | 15 | 19 | 16 | 19 |
| Sexual Offences | | 3 | 6 | 4 | 6 |
| Assault - Indecent | | 7 | 4 | 5 | 16 |
| Assault - Common | 298 | 349 | 260 | 261 | 227 |
| Assault - GBH | 46 | 61 | 48 | 51 | 97 |
| Rape | 6 | 12 | 3 | 3 | 4 |
| Attempted Rape | | | 7 | 3 | 4 |

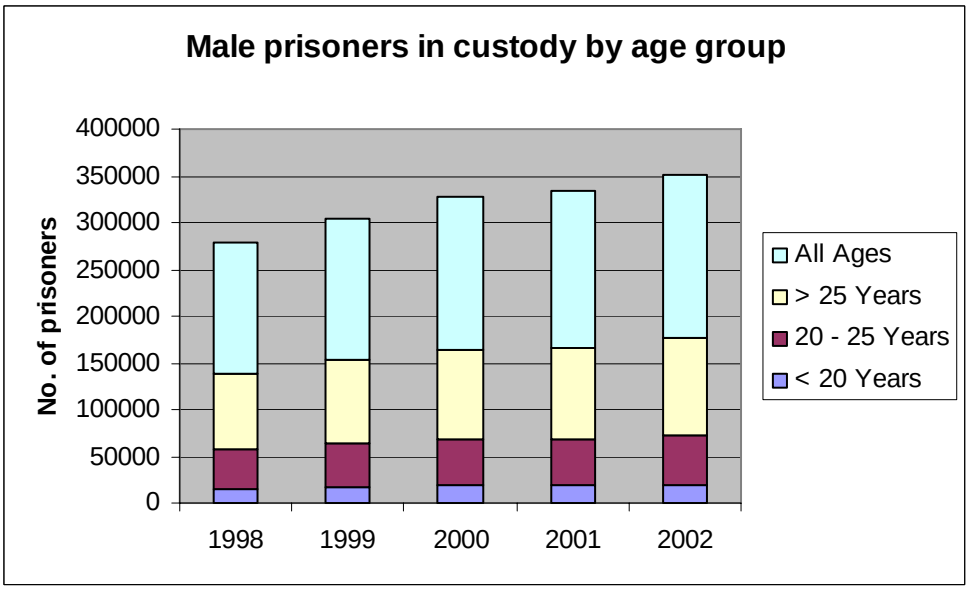
## Crime and Punishment:

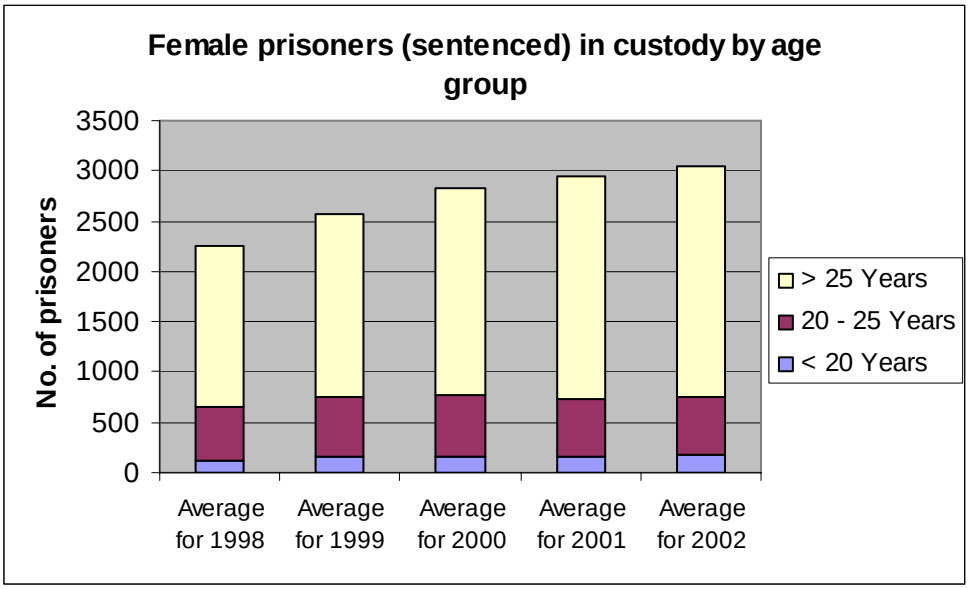
| | ***1998*** | ***1999*** | ***2000*** | ***2001*** | ***2002*** |
|---|---|---|---|---|---|
| | | | | | |
| Total prison population (adult) | 120,474 | 131,062 | 141,002 | 144,172 | 151,775 |
| Total prison population (juvenile) | 21,951 | 24,969 | 26,565 | 26,756 | 28,398 |

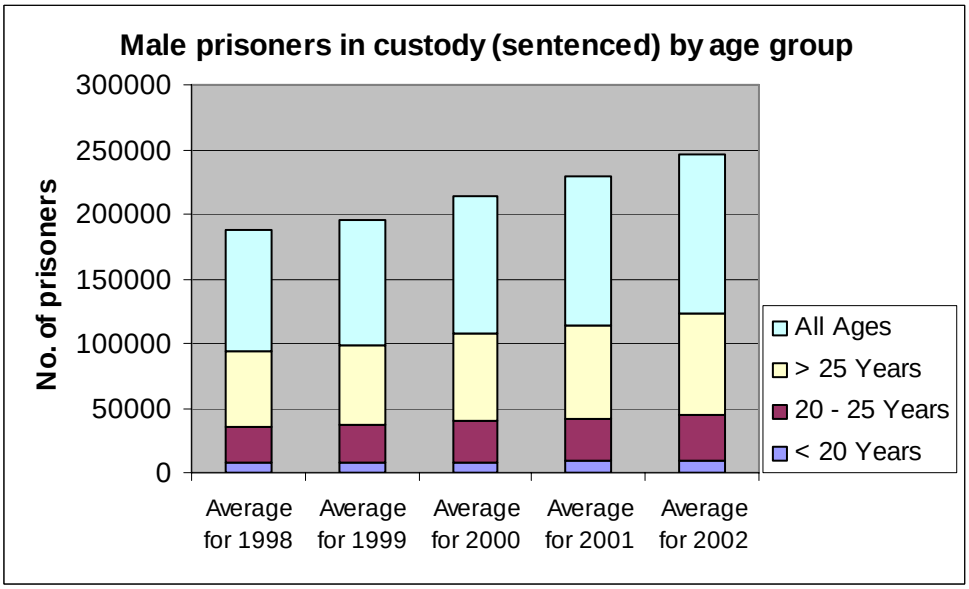

Prisoners given life sentence
Number of prisoners
3500
3000
2500
2000
1500
1000
500
0
1998
1999
2000
2001
2002


Number and principal causes of prison deaths from 1995 to 2003
No. of deaths
10000
1000
100
10
1
1995 1996 1997 1998 1999 2000 2001 2002 2003
Year
Pneumonia
Tuberculosis
Aids
Total
492 566 804 1230 1596 2320 2470 2886 2624
21 26 62 117 192 288 274 316 265
6 17 29 62 71 103 119 106 103
1 4 20 18 27 33 60 66 59


Female prisoners in custody by age group
No. of prisoners
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
1998
1999
2000
2001
2002
All Ages
> 25 Years
20 - 25 Years
< 20 Years


Male prisoners in custody by age group
No. of prisoners
400000
350000
300000
250000
200000
150000
100000
50000
0
1998
1999
2000
2001
2002
All Ages
> 25 Years
20 - 25 Years
< 20 Years


Female prisoners (sentenced) in custody by age group
No. of prisoners
3500
3000
2500
2000
1500
1000
500
0
Average for 1998
Average for 1999
Average for 2000
Average for 2001
Average for 2002
> 25 Years
20 - 25 Years
< 20 Years


Male prisoners in custody (sentenced) by age group
No. of prisoners
300000
250000
200000
150000
100000
50000
0
Average for 1998
Average for 1999
Average for 2000
Average for 2001
Average for 2002
All Ages
> 25 Years
20 - 25 Years
< 20 Years