

Abstract geometric lines in black on a white background, forming various overlapping polygons and triangles, primarily located on the left side of the slide.

# **CORRELATION BETWEEN HUMAN DEVELOPMENT INDEX AND CRIME RATES IN THE WORLD**

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# AGENDA

Introduction

Datasources

Analysis

Conclusions

# INTRODUCTION

The United Nations provides several datasets that are used in studies conducted to analyze the current situation of the world and identify trends. This helps in understanding where the world is headed.

The United Nations assigns each country a score from 0 to 1, depending on several factors such as the duration of education for each citizen and economic parameters.

In addition, the United Nations also collects crime rates for each country, providing publicly accessible data in several categories.

During this work, we aim to compare different crime scores with various factors of the development index to see if there is any significant relationship that warrants further investigation.



# DATASOURCES

## **Datasource1: Human Development Report**

Data URL:

[https://hdr.undp.org/sites/default/files/2021-22\\_HDR/HDR21-22\\_Statistical\\_Annex\\_HDI\\_Table.xlsx](https://hdr.undp.org/sites/default/files/2021-22_HDR/HDR21-22_Statistical_Annex_HDI_Table.xlsx)

The dataset includes the entire Human Development Index dataset, including sub-indicators from 2021 for every country included in the research. Data features are listed below: "Human Development Index (HDI), Life expectancy at birth, Expected years of schooling, Mean years of schooling, Gross national income (GNI) per capita, GNI per capita rank minus HDI rank, HDI rank."

## **Datasource2: Corruption & Economic Crime**

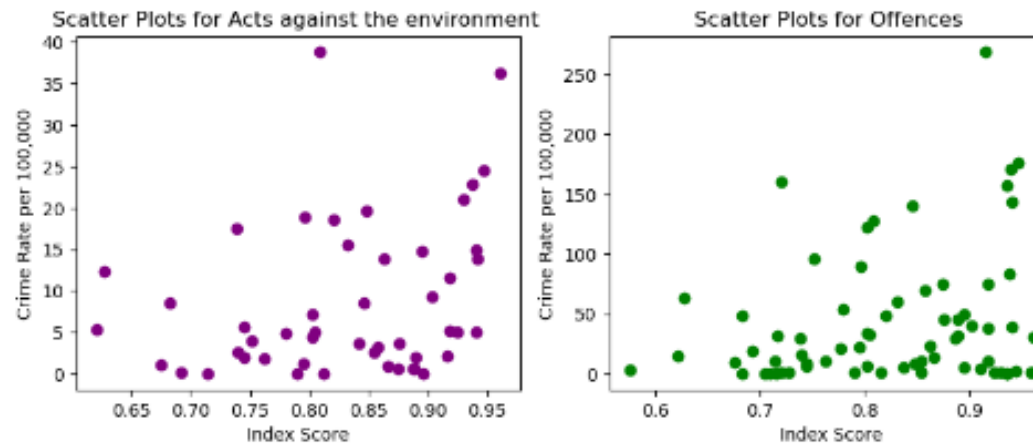
Data URL:

[https://dataunodc.un.org/sites/dataunodc.un.org/files/data\\_cts\\_corruption\\_and\\_economic\\_crime.xlsx](https://dataunodc.un.org/sites/dataunodc.un.org/files/data_cts_corruption_and_economic_crime.xlsx)

The dataset includes crime rates in each country for several sub-categories from 2003 to 2021, with two measurement options: Counts or rate per 100,000 population. Data features are listed below: "Iso3\_code, Country, Region, Subregion, Indicator, Dimension, Category, Sex, Age, Year, Unit of measurement, VALUE, Source."

# ANALYSIS –FEATURE BASED SCORE COMPRESSION AND RESULT INTERPRETATION

Plotting compression Of Crime types for Feature :Human Development Index (HDI)



**Pearson correlation in Acts against the environment for feature Human Development Index (HDI) is:**

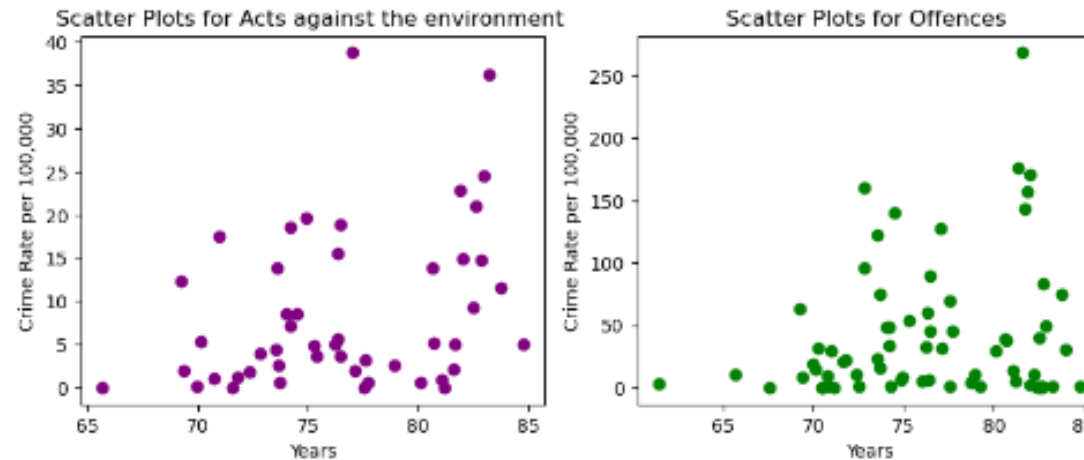
Result=0.22325353905224182, P-value=0.11162722158463288

**Pearson correlation in Offences for feature Human Development Index (HDI) is:**

Result= 0.23444838621945144, P-value=0.0458823073175387

# ANALYSIS –FEATURE BASED SCORE COMPRESSION AND RESULT INTERPRETATION

Plotting compression Of Crime types for Feature :Life expectancy at birth



**Pearson correlation in Acts against the environment for feature Life expectancy at birth is:**

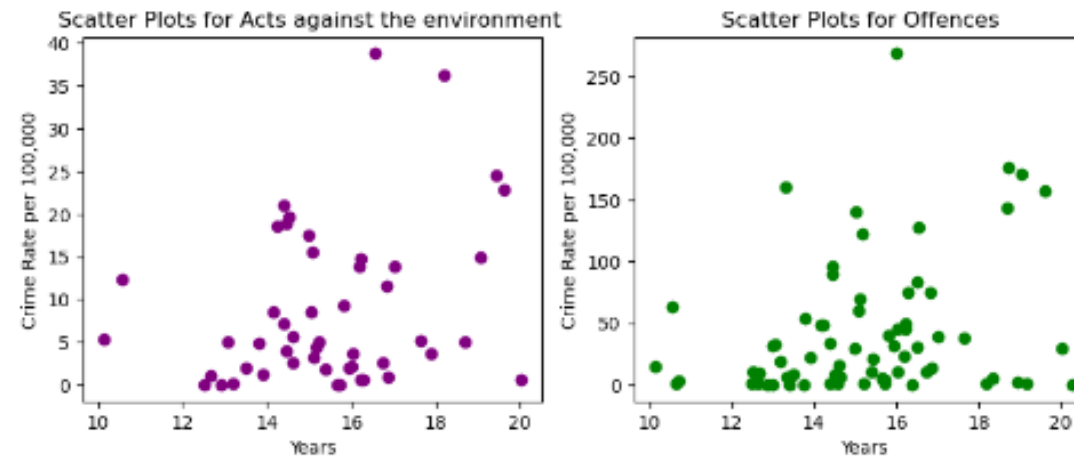
Result=0.17509355294145243, P-value=0.21440554391789135

**Pearson correlation in Offences for feature Life expectancy at birth is:**

Result=0.1817973312344365, P-value=0.12372469831125149

# ANALYSIS –FEATURE BASED SCORE COMPRESSION AND RESULT INTERPRETATION

Plotting compression Of Crime types for Feature :Expected years of schooling



**Pearson correlation in Acts against the environment for feature Expected years of schooling is:**

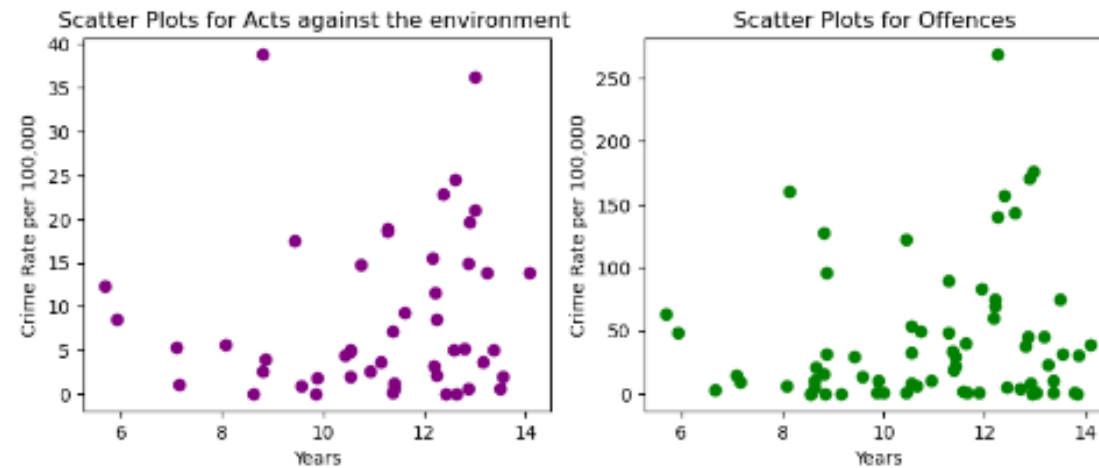
Result=0.2862690048924584, P-value=0.03964678352548001

**Pearson correlation in Offences for feature Expected years of schooling is:**

Result=0.24016591936803589, P-value=0.0406953016345163

# ANALYSIS –FEATURE BASED SCORE COMPRESSION AND RESULT INTERPRETATION

Plotting compression Of Crime types for Feature :Mean years of schooling



**Pearson correlation in Acts against the environment for feature Mean years of schooling is:**

Result=0.10715695034657081, P-value=0.4495792146278803

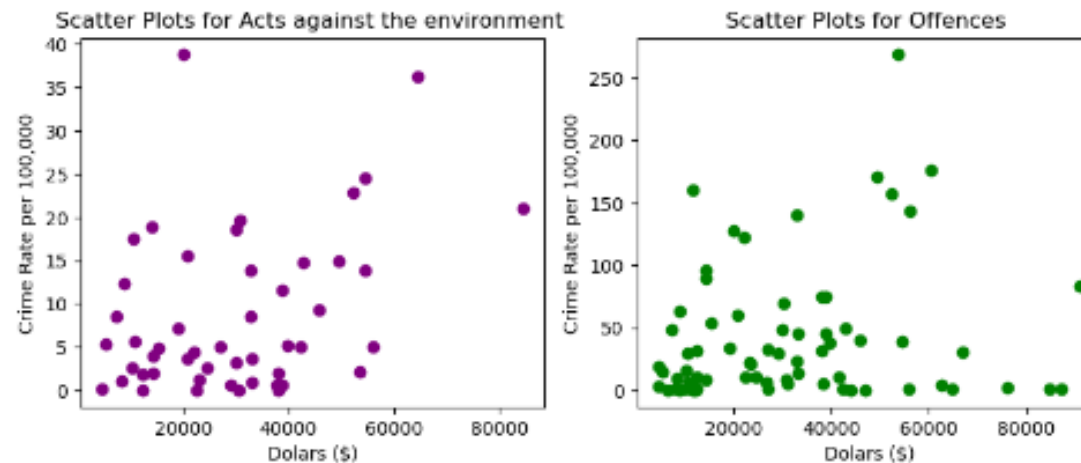
**Pearson correlation in Offences for feature Mean years of schooling is:**

Result=0.1907051603491727, P-value=0.10606560080347822



# ANALYSIS –FEATURE BASED SCORE COMPRESSION AND RESULT INTERPRETATION

Plotting compression Of Crime types for Feature :Gross national income (GNI) per capita



**Pearson correlation in Acts against the environment for feature Gross national income (GNI) per capita is:**

Result=0.20104353492277416, P-value=0.15296335289524418

**Pearson correlation in Offences for feature Gross national income (GNI) per capita is:**

Result=0.15606143954867518, P-value=0.18734625779754652

# CONCLUSIONS

- From the results of this study, we can infer that the correlation between the Human Development Index (HDI) and Crime Rates, encompassing both Environmental Crimes and Offenses, appears to be weak.
- However, a notable concern arises regarding the accessibility and completeness of crime data in certain regions of the world, particularly those with lower HDI scores. This issue is evident in the United Nations dataset, where some columns corresponding to the subcategories of both types of crimes are empty for these countries.
- This gap in data raises questions about the overall representation and reliability of crime statistics in lower HDI regions. The absence of comprehensive data in these areas suggests that the findings of this study might not fully encapsulate the global landscape of crime in relation to human development.

A series of white, thin, overlapping geometric lines and polygons on a black background, located on the left side of the slide. The lines form various shapes, including triangles and quadrilaterals, some of which are nested or intersecting.

# THANK YOU