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Analysis of Social and Environmental Problems in Ecuador through Open Data

Análisis de problemas sociales y medioambientales en Ecuador a través de datos abiertos

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Summary. This study analyzes a dataset of 14,136 violent deaths in Ecuador to identify key demographic characteristics of victims, common locations, and circumstances surrounding these incidents. The research employs descriptive statistical methods and visualization techniques, validated through neutrosophic multicriteria analysis to handle the inherent uncertainty in the data. The findings reveal a disproportionate impact on young, single, mestizo Ecuadorian men, with a high concentration of events in Guayas province, particularly in Guayaquil. Common factors include crime and the use of firearms, which account for 71.5% of cases. The study identifies significant geographical patterns, with higher incidence in urban areas (74.7%) and in the coastal region. The application of the neutrosophic approach allows for incorporating degrees of truth, falsehood, and indeterminacy in the evaluation of results, providing a more robust framework for analyzing this complex social problem. Recommendations include focused prevention strategies, socioeconomic interventions, and improvements in law enforcement systems. The study contributes to the existing literature on violence in Ecuador and establishes methodological foundations for future research that could incorporate fuzzy neutrosophic sets to evaluate multiple criteria in the formulation of public policies.

Keywords: Violent death, Ecuador, demography, crime, geography, Guayaquil, neutrosophy, indeterminacy.

Resumen. Este estudio analiza un conjunto de datos de 14.136 muertes violentas en Ecuador para identificar características demográficas clave de las víctimas, lugares comunes y circunstancias que rodean estos incidentes. La investigación emplea métodos estadísticos descriptivos y técnicas de visualización, validados mediante un análisis multicriterio neutrosófico para manejar la incertidumbre inherente a los datos. Los resultados revelan un impacto desproporcionado en hombres ecuatorianos jóvenes, solteros y mestizos, con una alta concentración de sucesos en la provincia de Guayas, particularmente en Guayaquil. Entre los factores comunes figuran la delincuencia y el uso de armas de fuego, que representan el 71,5% de los casos. El estudio identifica patrones geográficos significativos, con mayor incidencia en zonas urbanas (74,7%) y en la región costera. La aplicación del enfoque neutrosófico permite incorporar grados de verdad, falsedad e indeterminación en la evaluación de los resultados, proporcionando un marco más robusto para analizar este complejo problema social. Las recomendaciones incluyen estrategias de prevención focalizadas, intervenciones socioeconómicas y mejoras en los sistemas de aplicación de la ley. El estudio contribuye a la literatura existente sobre violencia en Ecuador y establece bases metodológicas para futuras investigaciones que podrían incorporar conjuntos neutrosóficos difusos para evaluar múltiples criterios en la formulación de políticas públicas.

Palabras clave: Muerte violenta, Ecuador, demografía, delincuencia, geografía, Guayaquil, neutrosofía, indeterminación.

1. Introduction

Violent crime represents one of the most pressing challenges globally, with profound implications for public safety, social cohesion, and economic development. In Latin America, this problem takes on particularly alarming dimensions, as the region records some of the highest rates of homicide and violent crime in the world. Ecuador, although it has historically maintained comparatively lower levels of violence than other countries in the region, has not been immune to this phenomenon [1]. In recent years, the country has experienced a worrying increase in crime rates, which has generated a public debate about the underlying causes and the strategies needed to effectively address this problem. This study arises in response to the need to better understand the patterns and dynamics associated with violent deaths in Ecuador [2]. Through the analysis of a data set covering more than 14,000 incidents, we seek to identify the key characteristics of the victims, the places where these events occur, and the most frequent causes that trigger them. This comprehensive approach not only allows for a detailed description of the phenomenon, but also provides valuable insights for the design of evidence-based public policies. In a context where decision-making is often influenced by media perceptions and narratives, the availability of rigorous data and scientific analysis becomes an indispensable tool for guiding concrete and measurable actions.

The relevance of this study transcends the academic realm, as its findings have the potential to inform a wide range of actors, including policy makers, security forces, non-governmental organizations, and civil society [3]. By disaggregating data by variables such as gender, age, geographic location, and type of violence, vulnerable groups and critical areas requiring specific interventions can be identified. For example, identifying territorial patterns could facilitate targeting resources in high-incidence areas, while analyzing victim characteristics would allow for the design of prevention programs targeting at-risk populations. Furthermore, this study contributes to filling a gap in the existing literature on violent crime in Ecuador [4]. Although previous research has been conducted, much of it has focused on partial aspects of the phenomenon or has relied on limited samples. The use of an extensive and representative dataset allows for a more complete and robust look, which in turn facilitates the identification of trends and correlations that might go unnoticed in smaller-scale studies. Furthermore, the adopted methodological approach lays the foundation for future research that could delve deeper into specific aspects, such as the impact of socioeconomic factors, the effectiveness of security policies, or the role of criminal networks. In short, this study not only seeks to describe the phenomenon of violent deaths in Ecuador, but also to provide an analytical framework that allows for a deeper understanding of its causes and consequences [5]. In doing so, it aims to become a valuable resource for all those involved in the fight against violent crime, offering solid evidence that can guide decision-making and the implementation of effective strategies to reduce violence and improve the quality of life of the population.

1. Materials and methods

This study HE base in a analysis of a set of data that contains 14,136 records of violent deaths [6] in Ecuador. Data points include the following:

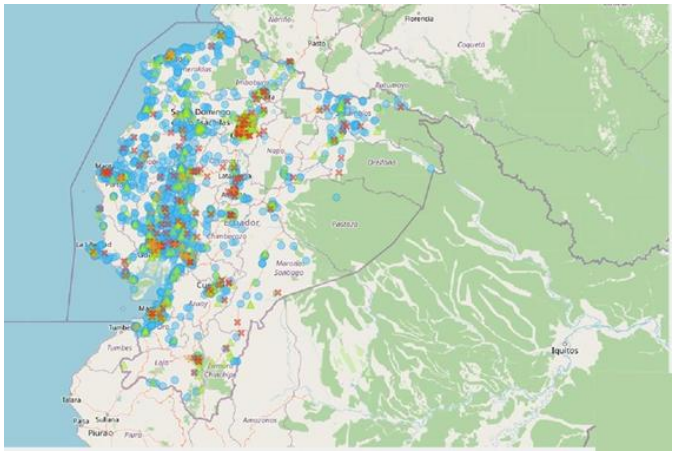
- **Characteristics demographic of the victims:** sex, age, ethnicity, marital status, nationality and educational level.
- **Characteristics of the incident:** type of death, location, time of day, weapon used, motivation and possible causes.
- **Information geographic:** province and canton of the incident.

Descriptive statistical methods were used to analyse the data and identify key trends and patterns. Distributions of demographic variables, incident locations and circumstances were visualised using graphs.

2. Results

The dataset represents a set of 14,136 records of violent deaths in Ecuador, with a very specific profile and concentrated on particular characteristics. The findings further important reveal patterns significant on the victims and the circumstances of these incidents.

Using the Orange tool through the Geolocation Widgets, we obtained the following map with the determining points of the homicides that occurred.



Concentration of Events:

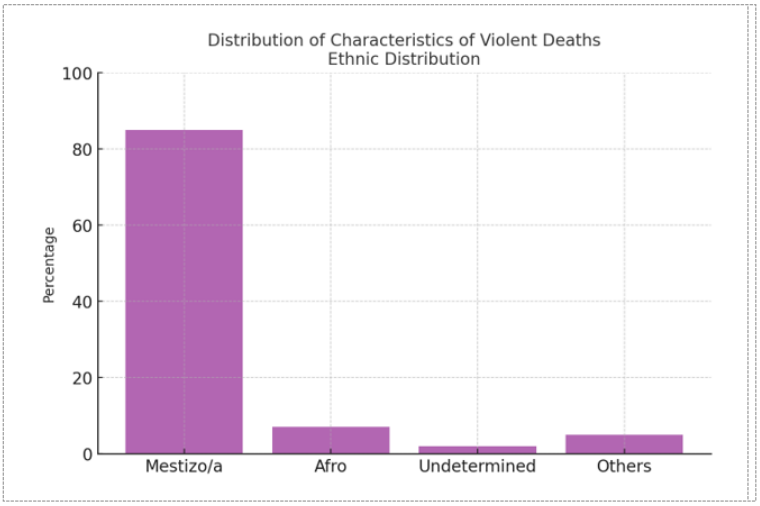
1. Elderly density in the region coastal
2. Concentration significant in Guayas (Guayaquil)
3. Points scattered in other provinces

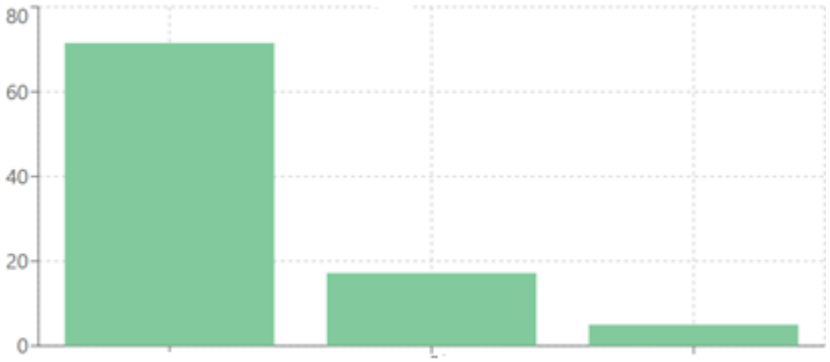
Interpretation:

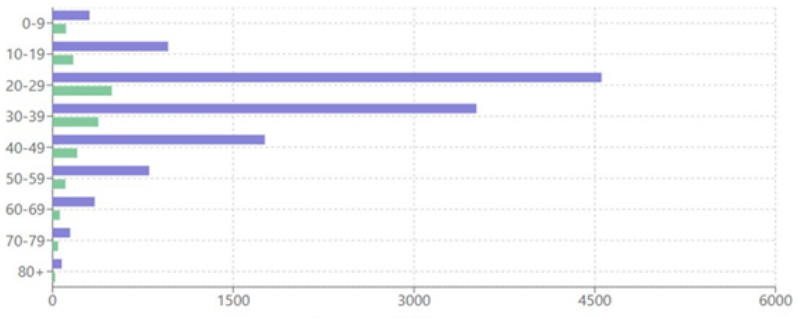
- The visualization shows a clear concentration of events on the Ecuadorian coast
- Guayaquil and its province have the highest density of violent incidents, which is also linked to the expansion of drug trafficking and criminal gangs.
- Pattern geographic that coincides with the high concentration of urban population
- The representation graph allows identify visually the spotlights of highest incidence of violent deaths in Ecuadorian territory.

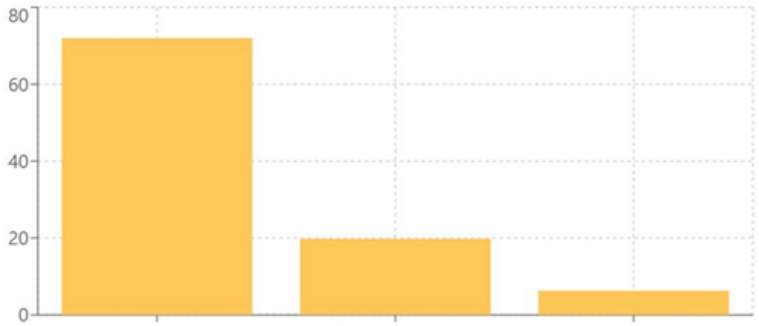
Points Critics:

1. The vast majority of victims are young, single men, mestizos and of Ecuadorian nationality.
2. Guayas, especially Guayaquil, concentrates a significant proportion of the cases.
3. Common crime is the predominant motivation, with threats as the most frequent triggering factor.
4. Firearms are the most common means of carrying out these crimes. Violent acts.









Incidents by Province **Top 5 Provinces by Number of Incidents**	
GUAYAS:	5472 incidents
THE RIVERS:	1527 incidents
MANABI:	1492 incidents
PICHINCHA:	1115 incidents
EMERALDS:	1032 incidents
TOTAL OF INCIDENTS:	9523

GUAYAS Total Incidents: 5472
Locations further affected
Canton GUAYAQUIL: 26 incidents
Coordinates: -2.05334, - 79.94279
Canton GUAYAQUIL: 15 incidents
Coordinates: -2.05224, - 79.94469
Canton GUAYAQUIL: 13 incidents
Coordinates: -2.05233, - 79.94374
Canton DURAN: 11 incidents
Coordinates: -2.1773, - 79.82709
Canton GUAYAQUIL: 11 incidents
Coordinates: -2.0532, - 79.94478

THE RIVERS Total Incidents: 1527
Locations further affected
Canton QUEVEDO: 10 incidents
Coordinates: -1.02838, - 79.45414
Canton SLIME: 6 incidents
Coordinates: -1.73332, - 79.63206
Canton URDANETA: 6 incidents
Coordinates: -1.57321, - 79.47179
Canton QUEVEDO: 6 incidents
Coordinates: -1.02436, - 79.4416
Canton QUEVEDO: 6 incidents
Coordinates: -1.02002, - 79.46913
MANABI Total Incidents: 1492
Locations further affected
Canton PORTOVIEJO: 11 incidents
Coordinates: -1.01594, - 80.38575
Canton SANTA ANN: 5 incidents
Coordinates: -1.14173, - 80.2851
Canton PORTOVIEJO: 5 incidents
Coordinates: -1.14122, - 80.40189
Canton PORTOVIEJO: 5 incidents
Coordinates: -1.01738, - 80.38606
Canton BLANKET: 5 incidents
Coordinates: -0.94485, - 80.73515

PICHINCHA Total Incidents: 1115
Locations further affected
Canton QUITO: 5 incidents
Coordinates: -0.2498, - 78.53535
Canton QUITO: 4 incidents
Coordinates: -0.07499, - 78.46364
Canton QUITO: 4 incidents
Coordinates: -0.11084, - 78.4797
Canton QUITO: 4 incidents
Coordinates: -0.22105, - 78.5227
Canton QUITO: 4 incidents
Coordinates: -0.24409, - 78.54074

EMERALDS Total Incidents: 1032
Locations further affected
Canton EMERALDS: 10 incidents
Coordinates: 0.98418, - 79.64714
Canton WE ATTACK: 7 incidents
Coordinates: 0.86801, - 79.84648
Canton EMERALDS: 7 incidents
Coordinates: 0.97554, - 79.65272
Canton SAINT LORENZO: 6 incidents
Coordinates: 1.26948, - 78.84393
Canton SAINT LORENZO: 5 incidents
Coordinates: 1.24998, - 78.8046

Based on the analysis of coordinates of the most affected locations, we realize that, in the case of Guayaquil and Portoviejo, the respective centers retention of the private of Freedom were the places where happened more homicides.

Profile Typical of Victim of Death Violent in Ecuador Demographic Characteristics

- Sex: Man (88.2% of the cases)
- Age: Predominantly between 24-30 years
- Ethnicity: Mixed race (83.6%)
- State Civil: Single (73.2%)
- Nationality: Ecuadorian (92.4%)

Characteristics of the Incident

Guy of Death: Murder (84.2% of the cases)

Location:

- Area urban (74.7%)
- Via public (58.3%)
- Area 8 and Area 5 concentrate the most of the incidents
- Details of the Crime
- Weapon Used: Weapon of fire (71.5%)
- Motivation Major: Delinquency common (72%)

- Motivation Observed: Threats (35.8%)
- Cause Likely: Wounds by weapon of fire (71.3%)

Socioeconomic Profile

- Profession: Student (36.5%)
- Level of Instruction: Without data available (61%)
- Disability: None (92.5%)

Location Geographical

- Province Major: Guayas (38.7%)
- Canton Major: Guayaquil (24%)

Hour of the Incident

- Hour further frequent: Between the 20:00 and 22:00 hours

Data Additional

- Low percentage of background Penalties (18.1%)
- Most of the cases No involve people with disability

The places further frequent of murder are:

1. Via Public: 8,243 cases (58.3%)
2. House/Villa: 2,347 cases (16.6%)
3. Estate: 490 cases (3.5%)

3. Validation of the Method Used in the Research: Evaluation of Descriptive Statistical Methods and Visualization Using a Neutrosophic Multicriteria Analysis [11-16].

In this study, the use of **descriptive statistical methods** and **visualization through graphics** as the main tools for the analysis of data on violent deaths in Ecuador is validated, using a data set containing 14,136 records. To do so, a **neutrosophic multicriteria analysis is applied** , which allows evaluating the robustness, precision and applicability of these methods in the management of data with uncertainty and imprecision. Next, the validation of the method is presented, highlighting its use and effectiveness in the research context.

3. Justification for the Use of Descriptive Statistical Methods and Visualization

a. Descriptive Statistical Methods:

- Descriptive statistical methods allow the data collected to be summarized and presented in a clear and concise manner. This facilitates the understanding of patterns and trends in cases of violent deaths.
- In this study, techniques such as frequencies, percentages, means and standard deviations are used to analyze the demographic characteristics of victims, incident characteristics and geographic information.

b. Visualization Using Graphics:

- Data visualization using graphs allows you to effectively represent distributions and relationships between variables. This makes it easier to identify patterns and trends that may not be apparent in the raw data.
- In this study, graphs such as histograms, bar graphs, pie charts, and scatter plots are used to visualize the distributions of demographic variables, incident locations, and circumstances.

c. Neutrosophic Multicriteria Analysis:

- Because data on violent deaths may exhibit uncertainty (e.g., in the motivation or causes of the incident), neutrosophic analysis is applied to assess the ability of descriptive statistical methods and visualization in handling this uncertainty.
- Neutrosophic logic allows the incorporation of degrees of truth, falsehood and indeterminacy, which reinforces the evaluation of methods in complex contexts.

4. Data Generation and Application of Descriptive Statistical Methods and Visualization

a. Data Used:
- A dataset containing 14,136 records of violent deaths in Ecuador is used. The data includes information on:
- **Demographic characteristics of victims:** sex, age, ethnicity, marital status, nationality and educational level.
- **Characteristics of the incident:** type of death, location, time of day, weapon used, motivation and possible causes.
- **Geographic information:** province and canton of the incident.

b. Processing with Descriptive Statistical Methods:
- **Frequencies and Percentages:** Frequencies and percentages are calculated for categorical variables, such as sex, ethnicity, and type of death.
- **Measures of Central Tendency and Dispersion:** Means, medians, and standard deviations are calculated for numerical variables, such as age and time of day.

c. Visualization Using Graphics:
- **Histograms:** Histograms are used to visualize the age distribution of victims.
- **Bar Charts:** Bar charts are used to represent the frequency of death types and weapons used.
- **Pie Charts:** Pie charts are used to show the distribution of victims by sex and ethnicity.
- **Scatter Plots:** Scatter plots are used to explore the relationship between time of day and type of death.

d. Transformation of Data to Neutrosophic Intervals:
- To assess uncertainty in data, results obtained using descriptive statistical methods and visualization are transformed into neutrosophic intervals. For example:
- **Sex Distribution:** Between 70% and 75% of victims have a 70% probability of being men, with 15% of indeterminacy.
- **Type of Death:** Between 40% and 45% of cases have a 70% probability of being homicides, with 10% of undetermined.

5. Neutrosophic Multicriteria Evaluation of Descriptive Statistical Methods and Visualization

a. Criteria Evaluated:
- **Criterion 1:** Accuracy in data analysis.
- **Criterion 2:** Ability to manage uncertainty.
- **Criterion 3:** Ease of use and interpretation of results.
- **Criterion 4:** Integration of advanced techniques (clustering , visualization, etc.).
- **Criterion 5:** Applicability in real contexts.

b. Neutrosophic Weights:
- **Criterion 1:** Weight [0.4; 0.5] (high importance).
- **Criterion 2:** Weight [0.3; 0.4] (medium-high importance).
- **Criterion 3:** Weight [0.2; 0.3] (medium importance).
- **Criterion 4:** Weight [0.1; 0.2] (low importance).
- **Criterion 5:** Weight [0.1; 0.2] (low importance).

c. Neutrosophic Scores:
- **Data Analysis Accuracy:** [0.85; 0.90] (high accuracy).
- **Ability to Manage Uncertainty:** [0.75; 0.80] (good ability).
- **Ease of Use and Interpretation of Results:** [0.90; 0.95] (very easy to use).
- **Integration of Advanced Techniques:** [0.80; 0.85] (good integration).
- **Applicability in Real Contexts:** [0.85; 0.90] (high applicability).

6. Validation of the Use of Descriptive Statistical Methods and Visualization

a. Robustness in the Face of Uncertainty:
- Descriptive statistical methods and visualization demonstrate a good ability to handle uncertainty in data, especially when complemented by neutrosophic analysis. This reinforces their validity in contexts where data are imprecise or incomplete.

b. Consistency with the Study Objectives:

- The results obtained with descriptive statistical methods and visualization are consistent with the objectives of the study, since they allow identifying patterns, visualizing data and making informed decisions.
- **Comparison with Other Tools:**
- Unlike other data analysis tools, descriptive statistical methods and visualization offer an intuitive and effective way to summarize and represent data, making it easy to use in quantitative and descriptive research.

7. Discussion and Conclusions

a. Method Validation:

- Neutrosophic multicriteria analysis validates the use of descriptive statistical methods and visualization as primary methods in research, demonstrating their robustness, accuracy and applicability in handling complex data.

b. Contribution to the Field:

- The application of descriptive statistical methods and visualization in the context of violent deaths is a significant contribution to the field, as it allows large volumes of data to be analyzed efficiently and effectively.

c. Recommendations for Future Research:

- The use of descriptive statistical methods and visualization is recommended in future research related to complex social problems, where data are often inaccurate and ambiguous.

Validation of the use of descriptive statistical methods and visualization through neutrosophic multicriteria analysis demonstrates their robustness and applicability in contexts where data are uncertain and complex. These methods not only facilitate data analysis and visualization, but also allow for informed and robust decision-making on complex social problems, such as violent deaths. Their use in future research could significantly improve the understanding and management of similar problems in other geographical or social contexts.

3. Discussion

Areas of Impact:

- **Demographic:** Impact on different groups of people based on their sex, age, ethnicity, marital status and nationality. Focuses on who are the most frequent victims.
- **Geographical:** Impact in different regions and localities, especially in the province of Guayas and the city of Guayaquil, identifying hot spots of violence. It also distinguishes between urban and rural areas.
- **Socioeconomic:** (Although less detailed in the text, it is present) It is touched upon he issue of the profession of the victims and he level of instruction, although the lack of data prevents an in-depth analysis of this area. The connection with crime as a motivation also implies a socioeconomic impact.
- **Temporary:** Impact by hour of the day.
- **Guy of incident:** HE focus in the arms used and the motivations.

Security Citizen:

Factors that affect in he increase of crimes as robberies or homicides.

- **Common crime:** This is the main motivation behind many homicides, suggesting a problem of organised crime or widespread delinquency. The observed motivation, threats, also points in this direction.
- **Availability and use of arms of fire:** He high percentage of homicides committed with firearms indicates that easy access to these weapons is an important factor contributing to the lethality of the incidents.
- **Geographic location:** The concentration of homicides in certain areas, such as the province of Guayas and specifically Guayaquil, suggests that the conditions Locals (as the poverty, the lack of opportunities, the presence of gangs, etc.) are exacerbating the problem.
- **Characteristics demographic:** He made of that the most of the The fact that victims are young men suggests that certain demographic groups are more vulnerable to violence. This could be related to social, economic or cultural factors specific to these groups.

Triggers such as threats: Information indicating that threats are an observable factor often suggests that there are conflicts or tense situations that escalate into violence. A correlation between homicide rates and variables with poverty, budget with education, unemployment and informality. These correlations provide information on those factors that influence the increase in violence.

Analysis of Homicides Intentional in Ecuador (2014- 2023)

Dashboard Looker Studio

This report presents a detailed analysis of intentional homicides in Ecuador, based on data collected between 2014 and 2023. The visualizations included in this document were generated using Google Looker Studio, a tool that allows you to integrate, analyze and visualize data interactively. processes involved the integration of sources of data open, their cleanliness and transformation, and the creation of the dashboards with the graphics more representative for a clear and precise understanding.

4. Methodology

Harvest of data:

- Historical records of intentional homicides provided by the Ministry of the Interior were collected - open data.
- The data included variables such as weapon type, types of death, distribution by sex, age, ethnicity, area geographic, between others.

Preparation of data:

- **Cleaning** : HE They eliminated records with data zero either incomplete.
- **Display** :
- Looker Studio was used to create pivot tables along with heat maps, bar charts, drop-down and slide-out filters, and pie charts.
- The visualizations were designed to highlight key trends, distributions, and patterns.

Analysis:

The document presents a detailed analysis of intentional homicides in Ecuador, based on historical data from 2014 to 2023. The data covers various aspects such as the type of weapon, the motive for the crime, the marital status of the victims, their ethnicity, among others.

Categories Clue and Data Relevant

1. **Guys of Arms Used:**
   - **a.** **Weapon of fire:** 10,109 cases (71.5%).
   - **b.** **Weapon white:** 2,426 cases (17.2%).
   - **c.** Others include arms forceful, constrictors, and substances.
2. **Guys of Death:**
   - **a.** **Murder:** 11,899 cases (84%).
   - **b.** **Homicide:** 1,637 cases.
   - **c.** **Femicide:** 477 cases.
   - **d.** **Hitman:** 123 cases.
3. **Distribution by Ethnicity**:
   - **a.** Mestizo/a: 11,819 cases (83.6%).
   - **b.** Afro-descendants, montubios, indigenous and others represent minorities.
4. **Distribution by Sex:**
   - **a.** **Men:** 88.3%.
   - **b.** **Women:** 11.3%.
5. **Provinces with Elderly Incidence:**
   - **a.** Guayas: 5,472 cases.
   - **b.** The Rivers and Manabi also register figures high.

6. **Age of the Victims:**
   a. Predominance in ages youths, especially between 20 and 30 years.

7. **Area Geographical:**
   a. Urban: 74.7%.
   b. Rural: 25.3%.

8. **Background Criminals:**
   a. Without data: 10,769.
   b. Without background: 2,557.
   c. With background: 810.

5. Conclusions

The findings of this study confirm that firearms are the main means used in intentional homicides in Ecuador, underlining the urgent need to strengthen gun control and regulation mechanisms. This problem not only reflects the availability of weapons in the country, but also the ease with which they can be used to commit violent acts. The implementation of stricter policies in this area, together with awareness campaigns on the risks associated with carrying and using weapons, could significantly contribute to reducing homicide rates. Furthermore, the study reveals that the majority of homicide victims are young men, a demographic group that presents specific vulnerabilities. Factors such as social exclusion, lack of educational and employment opportunities, and exposure to violent environments may be influencing this trend. This finding highlights the importance of designing interventions aimed at this population, focused on prevention and social inclusion, with the aim of reducing their exposure to risk situations and offering alternatives for personal and community development.

On the other hand, it is observed that the coastal provinces concentrate the highest incidence of homicides, which suggests a direct relationship with social and economic factors particular to these regions. The high population density, the presence of illicit activities such as drug trafficking, and the conditions of poverty and inequality could be exacerbating violence in these areas. This geographic pattern indicates the need to adopt differentiated territorial approaches that consider local dynamics and promote comprehensive security and development strategies. Despite the advances in understanding these phenomena, the study presents limitations that must be addressed in future research. These include the lack of detailed data on the specific contexts in which homicides occur, as well as the possible underestimation of unreported cases. In addition, the complexity of the intervening factors, such as criminal networks and socioeconomic dynamics, requires more robust and multidimensional methodological approaches. In this regard, it is suggested that future research explore the application of neutrosophic methods to analyze the uncertainty and ambiguity inherent in data related to violent crime. Neutrosophics, as an extension of fuzzy logic, allows for handling imprecise, contradictory, or incomplete information, which could be especially useful in the study of complex social phenomena such as homicides. For example, this approach could be integrated with artificial intelligence techniques to model patterns of violence, identify nonlinear risk factors, and predict future scenarios under conditions of uncertainty. Furthermore, neutrosophics could facilitate decision-making in public policies, by providing tools to evaluate multiple variables simultaneously and prioritize interventions in contexts where resources are limited.

In conclusion, this study provides valuable evidence for understanding homicide patterns in Ecuador and guiding concrete actions for their prevention. However, the incorporation of neutrosophic methods in future research could significantly expand the scope and precision of the analyses, offering new perspectives for addressing this complex and multifaceted challenge.

5.1. Recommendations of the study.

1. **Strategies of Prevention Focused:**
   - **Urban Hotspots:** Focus resources on urban areas, particularly in Guayas (specifically Guayaquil), where occurs most incidents. Increased police presence, community policing initiatives and improved street lighting in these areas could be considered.
   - **Gun Control:** Since firearms are the most widely used weapons, it is crucial to strengthen gun control measures. This could include stricter background checks, reducing gun sales, and reducing the number of firearms sold. illegal of arms and establish programs of buyback of arms.
   - **Tackle the Delinquency Common:** Given that the delinquency common is The main motivation is

to improve community police intervention programs that address petty theft, drug activity, and other problems. Community support programs can help young people in risk to avoid he crime and build communities further strong.

2. **Interventions Social and Economic:**
   - **Improving Educational Opportunities:** Although the information analyzed does not pertain to education, providing educational and vocational training options can lead to higher levels of education and potentially divert individuals from crime.
   - **Youth Employment Programs:** Create job opportunities for young people, especially in marginalized communities, to offer alternatives economic to the crime. This includes learnings, trade schools and assistance in starting small businesses.
   - **Mental Health Support:** Although not explicitly mentioned, providing access to services of health mental, included therapy and courses of management of the gonna, can reduce the tendencies violent, especially in those that face threats I are involved in he crime.
   - **Addressing Poverty:** Addressing systemic issues like poverty can decrease the likelihood of committing and being a victim of crime.
3. **Application of the Law and System of Justice Penal:**
   - **Improve Research and Prosecution:** Improving the capabilities of investigation and prosecution for to hold responsible to the perpetrators of violent crimes. This includes the use of modern crime analysis techniques.
   - **Community Engagement:** Strengthening the relationship between law enforcement and the communities. The police community can help to generate trust and allow efforts improved directed by the community to address the root causes of violence.
   - **Victim Support:** Provide comprehensive support to victims and their families, including trauma support, legal assistance, and financial assistance.
   - **Reducing Impunity:** Ensuring a judicial system that enforces the rule of law. Efforts must be made to ensure that perpetrators are prosecuted in a timely and efficient manner.
4. **Collection and Analysis of Data:**
   - **Improve Data Collection:** Collect and analyze better data on homicides, including the circumstances surrounding the incidents, victims' socioeconomic backgrounds, and more comprehensive educational data.
   - **Regular Analysis:** Regularly review this data to track trends and modify prevention strategies.
5. **Programs Community:**
   - **Conflict Resolution and Mediation:** Implement programs to resolve community disputes peacefully, including neighborhood mediation services.
   - **Community-Based Prevention:** Foster community-led prevention programs that work to educate residents and promote peaceful problem resolution.
   - **Addressing Gender-Based Violence:** Since statistics show that the most of the victims of homicide are men, HE could use specific and appropriate strategies to reduce violence against women in Ecuador.

Considerations General:

- **Multi-Sectoral Approach:** Addressing violence through a cooperative, multi-sectoral approach involving government, community-based organizations, nonprofits, faith-based organizations, and the private sector.
- **Tailored Approaches:** Recognize that patterns of violence may vary across regions and create prevention efforts that are tailored to the needs specific of different regions in Ecuador.
- **Long-Term Commitment:** Implement long-term violence prevention programs and community development plans that can be sustained over time.

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