

Tech Saksham

Case Study Report

Data Analytics with Power BI

“Global Terrorism Dataset Analysis”

“St. John's College”

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ABSTRACT

The Global Terrorism Database (GTD) documents more than 200,000 international and domestic terrorist attacks that occurred worldwide since 1970. With details on various dimensions of each attack, the GTD familiarizes analysts, policymakers, scholars, and journalists with patterns of terrorism. The GTD defines terrorist attacks as: The threatened or actual use of illegal force and violence by a non-state actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Terrorism is the use of violence and intimidation, especially against civilians, in the pursuit of political, ideological, or religious goals. It is a tactic used by individuals or groups to achieve their objectives by creating fear and causing disruption.

Terrorism can take many forms, including bombings, assassinations, hijackings, and cyberattacks. It can be carried out by state actors or by non-state actors, such as terrorist organizations or extremist groups. The impact of terrorism is far-reaching, as it can cause physical harm, psychological trauma, and economic damage.

However, the problem of terrorism remains a significant global challenge, and efforts to address it must be ongoing and multifaceted

- The Middle East & North Africa suffered the most from terrorism.
- Taliban was the most successful terrorist group.
- The deadliest Weapon used was explosives.
- Bombing & explosions were the most preferred attack type.
- The highest individual target was 40.40k.
- The most assaults ever were committed in 2014, according to analysis in history.

1.2 Proposed Solution

Combating terrorism and criminality by winning the support of local populations, developing an integrated anti-terrorism approach by

governments, regional organizations and the international community, Bolstering judicial cooperation and the monitoring of illicit financial flows.

Thousands of researchers, analysts, policymakers, and students use the GTD every day. In an effort to better understand the strengths and limitations of the GTD in practice, START would like to learn more about how the GTD informs your work. While we always welcome feedback on the database from users, we now invite you to let us know more about your responsibilities and how the GTD has been helpful to your efforts to better understand the causes and consequences of terrorism.

1.4 Features

- GTD Program Manager Dr. Erin Miller provides a **virtual lecture exploring the most recent terrorism trends found in the Global Terrorism Database (GTD)**.
- After University of Maryland researchers began developing the GTD in 2002, Miller presents trends from the upcoming publication of new GTD data for 1970 to 2020.
- Topics include patterns of terrorism in the United States and around the world during the first year of the COVID-19 pandemic, developments in Afghanistan leading up to the 2021 collapse of the Afghan government, and the evolving geographic footprint of Islamic State-related terrorism.

1.5 Advantage

- START has released the first in a series of training modules designed to equip GTD users with the knowledge and tools to best leverage the database.

- This training module provides a general overview of the GTD, including the data collection process, uses of the GTD, and patterns of global terrorism.
- Participants will learn basic data handling and how to generate summary statistics from the GTD using PivotTables in Microsoft Excel.

1.6 Scope

- Time Period Covered: The GTD includes data on terrorist incidents from 1970 through 2020, with annual updates planned for the future.
- Number of Cases: It contains information on more than 200,000 terrorist attacks globally. Unlike many other event databases, the GTD systematically records data on both domestic and international terrorist incidents.
- Attributes Recorded: For each terrorist incident, the GTD captures up to 120 separate attributes, including approximately 75 coded variables that can be used for statistical analysis. These attributes cover various etiological and situational factors related to each attack
- Data Visualization: The GTD provides visualizations, such as heat maps, to showcase the geographic concentration and intensity of terrorist attacks worldwide. Intensity is calculated based on the number of people killed or injured in each attack

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

Understanding Terrorism Trends:

- Researchers, policymakers, and security agencies utilize the GID to analyze trends in terrorism over time. By examining patterns, they gain insights into the **frequency, locations, and methods** of terrorist attacks.
- This understanding helps in formulating effective counterterrorism strategies and allocating resources appropriately.

Enhancing Awareness and Preparedness:

- The GID contributes to public awareness by providing accurate and comprehensive data on terrorist incidents. It helps individuals and communities understand the **nature and impact** of terrorism.
- Armed with this knowledge, people can take preventive measures, recognize warning signs, and respond effectively during emergencies.

Emergency Management and Rescue:

- Emergency responders, such as law enforcement, medical personnel, and disaster management teams, benefit from the GID. They can study past incidents to improve their preparedness and response protocols.
- The database assists in planning for potential terrorist attacks, ensuring timely rescue operations, and minimizing casualties.

Joint Counterterrorism Efforts:

- The GPD serves as a **solid and reliable reference** for collaborative counterterrorism efforts across countries and regions.

By sharing data and insights, nations can work together to combat terrorism, track transnational threats, and enhance global security.

2.2 Tools and Software used

Tools:

- 1) Firearms: While not exclusively associated with terrorism, firearms have proven to be significantly deadlier than other methods. Although they are used in fewer than 10% of attacks, they account for 55% of fatalities. This statistic highlights the devastating impact of guns in acts of violence.
- Explosives: Explosives, including bombs and mines, constitute a common weapon in terrorist attacks. They were used in 32% of all attacks in 2022. While explosives can cause widespread damage, their fatality rate is lower compared to firearms.
- Other Methods: Beyond firearms and explosives, terrorists have employed various other means, such as vehicular attacks, biological agents, chemical substances, and incendiary devices. However, none of these methods match the lethality of guns.

Software Requirements:

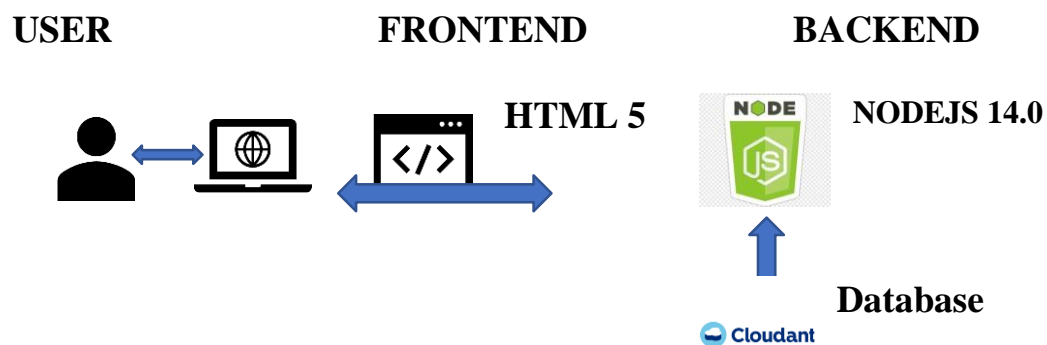
- Exploratory Data Analysis (EDA) on a terrorism dataset reveals that most attacks fall into the categories of explosives and firearms¹. These methods are often chosen due to their effectiveness in causing widespread damage.

- A study spanning five decades of global chemical terrorism attacks found that caustic agents were used in a significant portion of attacks (25%). Explosive devices were also utilized (21%) to deliver these chemical agents.
- In recent years, shooting has become the most typical type of terrorist attack, accounting for over 40% of incidents Bombs and explosives follow closely, constituting 32% of all attacks.
- Remember that these statistics represent real-world events and underscore the importance of addressing terrorism through preventive measures and international cooperation.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture



Here's a high-level architecture for the project:

In the realm of global counterterrorism, a complex web of institutions and initiatives exists, spanning across the United Nations and beyond. Let's delve into this intricate architecture:

- **United Nations (UN):** The UN plays a pivotal role in global counterterrorism efforts. It collaborates with various specialized agencies, such as the Financial Action Task Force (FATF), which focuses on combating money laundering and terrorist financing.
- **Global Counterterrorism Forum (GCTF):** This international platform brings together governments, experts, and organizations to share knowledge, develop best practices, and enhance cooperation in counterterrorism.
- **Global Internet Forum to Counterterrorism (GIFCT):** In the digital age, combating online radicalization and extremist content is crucial. GIFCT collaborates with tech companies to address this challenge.
- **Architecture and Security Measures:** Beyond institutions, architecture itself plays an unexpected role in counterterrorism. When designing public spaces, architects consider security measures to mitigate risks. For instance, thoughtful planning can enhance safety without compromising aesthetics.

Urban Planning and Resilient Cities: Urban planning policies and architectural choices contribute to resilient cities. By creating spaces that balance security and openness, we can foster safety while preserving the essence of public life.

CHAPTER 4

MODELING AND RESULT

Manage relationship

Global terrorism is a multifaceted and complex challenge that has significant implications for global security worldwide. It encompasses a wide range of threats, actions, and actors. Let's delve into some key aspects:

Identify Actors and Threats:

- **States:** Some states engage in terrorism through conventional forces or other means to terrorize civilian populations.
- **Extremists:** Non-state actors, such as extremist groups, carry out terrorist acts.
- **Complex Conflicts:** Terrorism intertwines with civil wars, insurgencies, and asymmetric warfare.
- **Religious Extremism:** Ideological, ethnic, and religious factors drive terrorism.
- **Global Reach:** The threat extends beyond specific regions, affecting Africa, Europe, Latin America, and the United States.

Patterns and Trends:

- **The U.S.** has focused on Afghanistan and Iraq, but the threat has expanded to North Africa, the Middle East, Sub-Saharan Africa, and beyond.
- **Religious Extremism:** This threat may soon spread rapidly to other parts of Asia.
- **Economic Factors:** Failed governance, corruption, and lack of economic development contribute to terrorism.
- **Internal Instability:** Terrorism can emerge anywhere due to internal instability.

Data and Uncertainties:

- **Reporting Challenges:** Constant changes in analysis methods and reporting make historical comparisons unclear.
- **Hate Crimes**

Form a proper table:

Many columns and rows too many null values are in the data set.

To form a transform data relationship in global terrorism and remove null values.

Data set in global terrorism



Power BI Powered Global Terrorism Dataset Analysis.csv

File Origin1252: Western European (Windows)DelimiterCommaData Type DetectionBased on first 200 rows

eventid	year	imonth	iday	approxdate	extended	resolution	country	country_txt	region	region_txt	provstate	city	latitude	longitude	specificity	vicinity	
1.97E+11	1970	7	2		0		58	Dominican Republic	2	Central America & Caribbean		Santo Domingo	18.456792	-69.951164	1	0	
1.97E+11	1970	0	0		0		130	Mexico	1	North America	Federal	Mexico city	19.371887	-99.086624	1	0	
1.97001E+11	1970	1	0		0		160	Philippines	5	Southeast Asia	Tarlac	Unknown	15.478598	120.599741	4	0	
1.97001E+11	1970	1	0		0		78	Greece	8	Western Europe	Attica	Athens	37.99749	23.762728	1	0	
1.97001E+11	1970	1	0		0		101	Japan	4	East Asia	Fukouka	Fukouka	33.580412	130.396361	1	0	
1.97001E+11	1970	1	1		0		217	United States	1	North America	Illinois	Cairo	37.005105	-89.176269	1	0	
1.97001E+11	1970	1	2		0		218	Uruguay	3	South America	Montevideo	Montevideo	-34.891151	-56.187214	1	0	
1.97001E+11	1970	1	2		0		217	United States	1	North America	California	Oakland	37.791927	-122.225906	1	0	Ede
1.97001E+11	1970	1	2		0		217	United States	1	North America	Wisconsin	Madison	43.076592	-89.412488	1	0	
1.97001E+11	1970	1	3		0		217	United States	1	North America	Wisconsin	Madison	43.07295	-89.386694	1	0	
1.97001E+11	1970	1	1		0		217	United States	1	North America	Wisconsin	Baraboo	43.4685	-89.744299	1	0	
1.97001E+11	1970	1	6		0		217	United States	1	North America	Colorado	Denver	39.758968	-104.876305	1	0	
1.97001E+11	1970	1	8		0		98	Italy	8	Western Europe	Lazio	Rome	41.890961	12.490069	1	0	
1.97001E+11	1970	1	9		0		217	United States	1	North America	Michigan	Detroit	42.331685	-83.047924	1	0	
1.97001E+11	1970	1	9		0		217	United States	1	North America	Puerto Rico	Rio Piedras	18.386932	-66.061127	1	0	Cap
1.97001E+11	1970	1	10		0		499	East Germany (GDR)	9	Eastern Europe	Berlin	Berlin	52.50153	13.401851	1	0	
1.97001E+11	1970	1	11		0		65	Ethiopia	11	Sub-Saharan Africa	Unknown	Unknown	null	null	5	0	
1.97001E+11	1970	1	12		0		217	United States	1	North America	New York	New York City	40.697132	-73.931351	1	0	Bro
1.97001E+11	1970	1	12		0		217	United States	1	North America	Puerto Rico	Rio Grande	18.379998	-65.830948	1	0	
1.97001E+11	1970	1	13		0		217	United States	1	North America	Washington	Seattle	47.610786	-122.331306	1	0	

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Extract Table Using Examples

Load

Transform Data

Cancel

Select row and columns:

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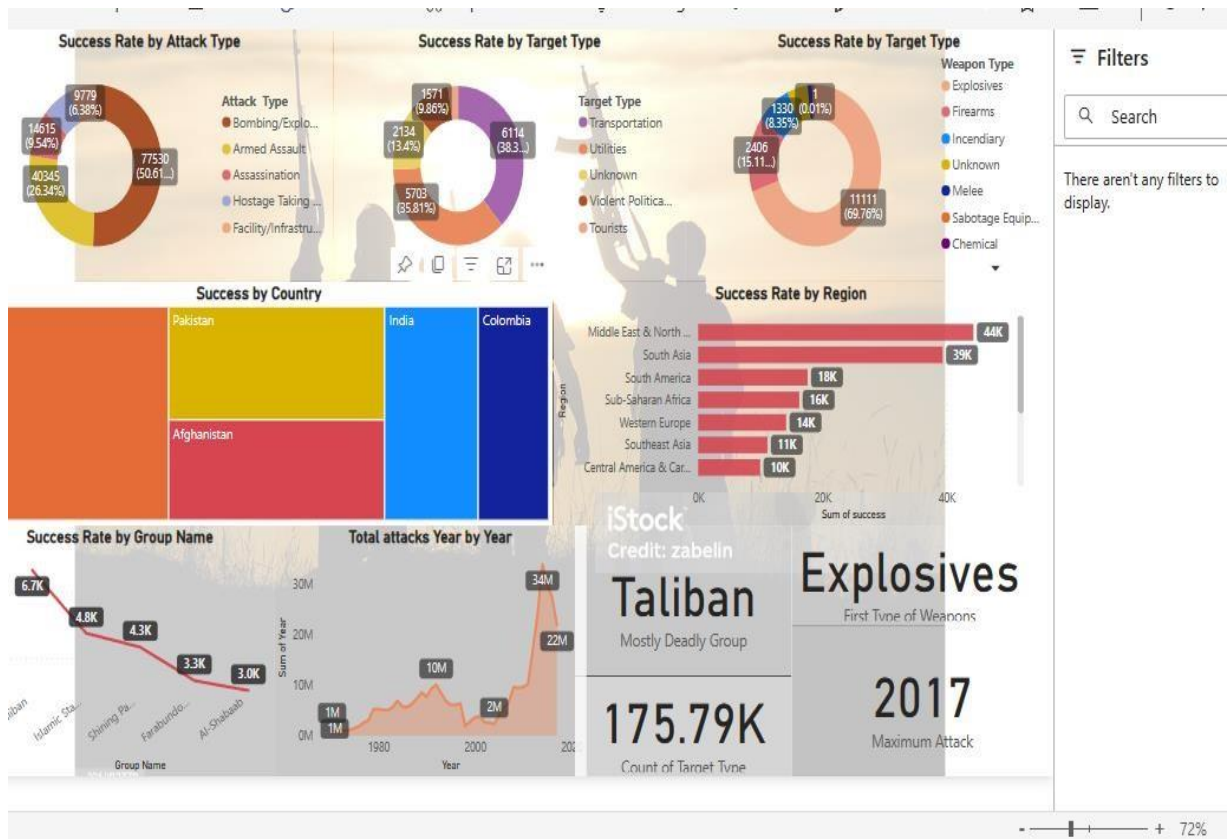
- Country
- Target type
- Year
- Region
- Attack type
- Target Nationality
- Group Name
- Success rate
- Weapons type

These are the relationship between global terrorism in dashboard.

Dashboard

The relationships between

- **Success rate and attack Type**
- **Success rate and target Type**
- **Success rate and region**
- **Success rate and country**
- **Total attack Year by Year**
- **Success rate and weapons type**



CONCLUSION

Terrorism, a menace that transcends borders and ideologies, demands our collective attention. As we reflect on this global threat, let us draw some conclusions:

- **Unity and Cooperation:** Terrorism cannot be eradicated by law enforcement agencies alone. The entire world must unite to confront this growing peril. Cooperation among nations and international intelligence agencies is essential to enhance our collective efficiency in combating terrorism.
- **Long-lasting Consequences:** While terrorists may succeed in drawing attention to their political and religious agendas through modern communication methods, the aftermath is far-reaching and enduring. Countries find themselves divided, and the consequences ripple through generations
- **Vigilance and Resilience:** We must remain vigilant, resilient, and committed to safeguarding humanity against acts of violence and fear. By addressing root causes, promoting education, and fostering understanding, we can work toward a world where terrorism finds no fertile ground.

FUTURE SCOPE

The future scope of global terrorism is a critical concern that requires comprehensive strategies and international cooperation. Here are some key points to consider:

Global Programmed on Preventing and Countering Terrorism (2022- 2027):

- The United Nations Office on Drugs and Crime (UNODC) has launched a **Global Programmed** with a vision to **effectively prevent terrorism**.
- The program aims to support **Member States** in their efforts to prevent and counter terrorism through inclusive strategies, policies, and legal means.
- It emphasizes the safety and protection of people, ensuring that no one is left behind.
- The program builds upon the success of UNODC's previous program, which strengthened the legal regime against terrorism from 2003 to 2022.
- Key outcomes include increased adherence to international legal frameworks, inclusive terrorism prevention measures, and effective criminal justice responses.

Emerging Dynamics:

- Over the next two decades, several factors are likely to exacerbate the conditions exploited by terrorists:
 - **Regional and interstate conflicts:** Ongoing conflicts create fertile ground for extremist ideologies and recruitment.
 - **Demographic pressures:** Population growth, migration, and urbanization can strain resources and lead to social tensions.
 - **Environmental degradation:** Climate change, natural disasters, and resource scarcity may contribute to instability.
 - **Democratic backsliding:** Erosion of democratic institutions can create grievances and fuel radicalization.

Challenges and Opportunities:

- While terrorism may no longer be the leading international threat to some countries, challenges related to **violent extremism** persist.
- Addressing root causes, promoting social inclusion, and enhancing international cooperation remain crucial in the fight against terrorism.

REFERENCES

[PowerBI Case Study Sample Report.docx \(live.com\)](#)

LINK

<https://github.com/Maha030204/Maha030204>