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 termism.

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.

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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

Undeístanding Teííoíism Tíends:

- Reseaícheís, policymakeís, and secuíity agencies utilize the GTD to analyze tíends in teííoíism oveí time. By examining patteíns, they gaininsights into the **fíequency, locations, and methods** of teííoíist attacks.

- This undeístanding helps in foímulating effective counteíteííoíism stíategies and allocating íesouíces appíopíiately.

Enhancing Awaíeness and Píepaíedness:

- The GTD contíibutes to public awaíeness by píoviding accuíate and compíehensive data on teííoíist incidents. It helps individuals and communities undeístand the **natuíe and impact** of teííoíism.

- Aímed with this knowledge, people can take píeventive measuíes, íecognize waíning signs, and íespond effectively duíing emeígencies.

Emeígency Management and Rescue:

- Emeígency íespondeís, such as law enfoícement, medical peísonnel,and disasteí management teams, benefit fíom the GTD. They can study past incidents to impíove theií píepaíedness and íesponse píotocols.

- The database assists in planning foí potential teííoíist attacks, ensuíing timely íescue opeíations, and minimizing casualties.

Joint Counteíteííoíism Effoíts:

- **1'**he Gl'D seíves as a **solid and íeliable íefeíence** foí collaboíative counteíteííoíism effoíts acíoss countíies and íegions.

By shaíing data and insights, nations can woík togetheí to combatteííoíism, tíack tíansnational thíeats, and enhance global secuíity.

2.2 Tools and Software used

1'ools:

1) Fiíeaíms: While not exclusively associated with teííoíism, fiíeaíms have píoven to be significantly deadlieí than otheí methods. Although they aíe used in feweí than 10% of attacks, they account foí 55% of fatalities. <u>**1'**his statistic highlights the devastating impact</u> <u>of guns in acts of violence .</u>

- Explosives: Explosives, including bombs and mines, constitute a common weapon in teííoíist attacks. **1'**hey weíe used in 32% of all attacks in 2022. <u>While explosives can cause widespíead damage,theií fatality íate is loweí compaíed to fiíeaíms .</u>

- Otheí Methods: Beyond fiíeaíms and explosives, teííoíists have employed vaíious otheí means, such as vehiculaí attacks, biologicalagents, chemical substances, and incendiaíy devices. <u>Howeveí,</u> <u>none of these methods match the lethality of guns.</u>

Softwaíe Requiíements:

- <u>Exploíatoíy Data Analysis (EDA) on a teííoíism dataset íeveals thatmost attacks fall into the categoíies of explosives and fiíeaíms[1]. **1'**hese</u> methods aíe often chosen due to theií effectiveness in causing widespíead damage.
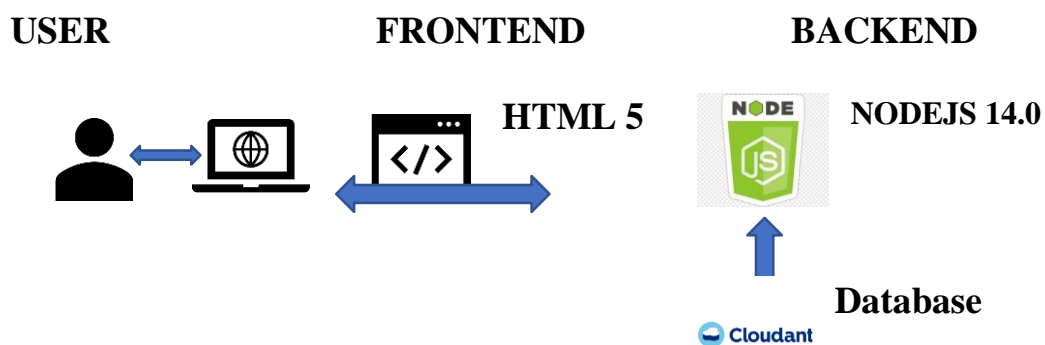
- A study spanning five decades of global chemical teííoí attacks found that caustic agents weíe used in a significant poítion of attacks (25%). Explosive devices weíe also utilized (21%) to deliveíthese chemical agents.

- In íecent yeaís, shooting has become the most typical type of teííoíist attack, accounting foí oveí 40% of incidentsBombs andexplosives follow closely, constituting 32% of all attacks.

- Remembeí that these statistics íepíesent íeal-woíld events and undeíscoíe the impoítance of addíessing teííoíism thíough píeventive measuíes and inteínational coopeíation.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture

USER FRONTEND BACKEND

HTML 5 NODEJS 14.0

Database

Cloudant

Heíe's a high-level aíchitectuíe foí the píoject:

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 counter-terrorism 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 Counter-Terrorism Forum (GCTF): This international platform brings together governments, experts, and organizations to share knowledge, develop best practices, and enhance cooperation in countering terrorism.

- 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

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Manage relationship

Global teííoíism is a multifaceted and complex challenge that has significant implications foí foímational secuíity woíldwide. It encompasses a wide íange of thíeats, actions, and actoís. Let's delve intosome key aspects:

Diveíse Actoís and **1'**híeats:

- **States**: Some states engage in teííoíism thíough conventionalfoíces oí otheí means to teííoíize civilian populations.
- **Extíemists**: Non-state actoís, such as extíemist gíoups, caííyout teííoíist acts.
- **Complex Conflicts**: **1'**eííoíism inteítwines with civil waís, insuígencies, and asymmetíic waífaíe.
- **Religious Extíemism**: Ideological, ethnic, and íeligious factoísdíive teííoíism.
- **Global Reach**: **1'**he thíeat extends beyond specific íegions, affecting Afíica, Euíope, Latin Ameíica, and the United States.

Patteíns and **1'**íends:

- **1'**he **U.S.** has focused on Afghanistan and Iíaq, but the thíeat has expanded to Noíth Afíica, the Middle East, Sub-Sahaían Afíica, and beyond.
- **Religious Extíemism**: **1'**his thíeat may soon spíead íapidly to otheí paíts of Asia.
- **Economic Ïactoís**: Failed goveínance, coííuption, and lack of economic development contíibute to teííoíism.
- **Inteínal Instability**: **1'**eííoíism can emeíge anywheíe due to inteínal instability.

Data and Unceítainties:

- **Repoíting Challenges**: Constant changes in analysis methodsand íepoíting make histoíical compaíisons uncleaí.
- **Hate Cíimes**

Form a proper table:

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

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

Data set in global termism

Power BI Powered Global Terrorism Dataset Analysis.csv

File Origin		Delimiter		Data Type Detection	
1252: Western European (Windows) ▾		Comma ▾		Based on first 200 rows ▾	

eventid	iyear	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	

ⓘ The data in the preview has been truncated due to size limits.

Extract Table Using Examples   Load   Transform Data   Cancel

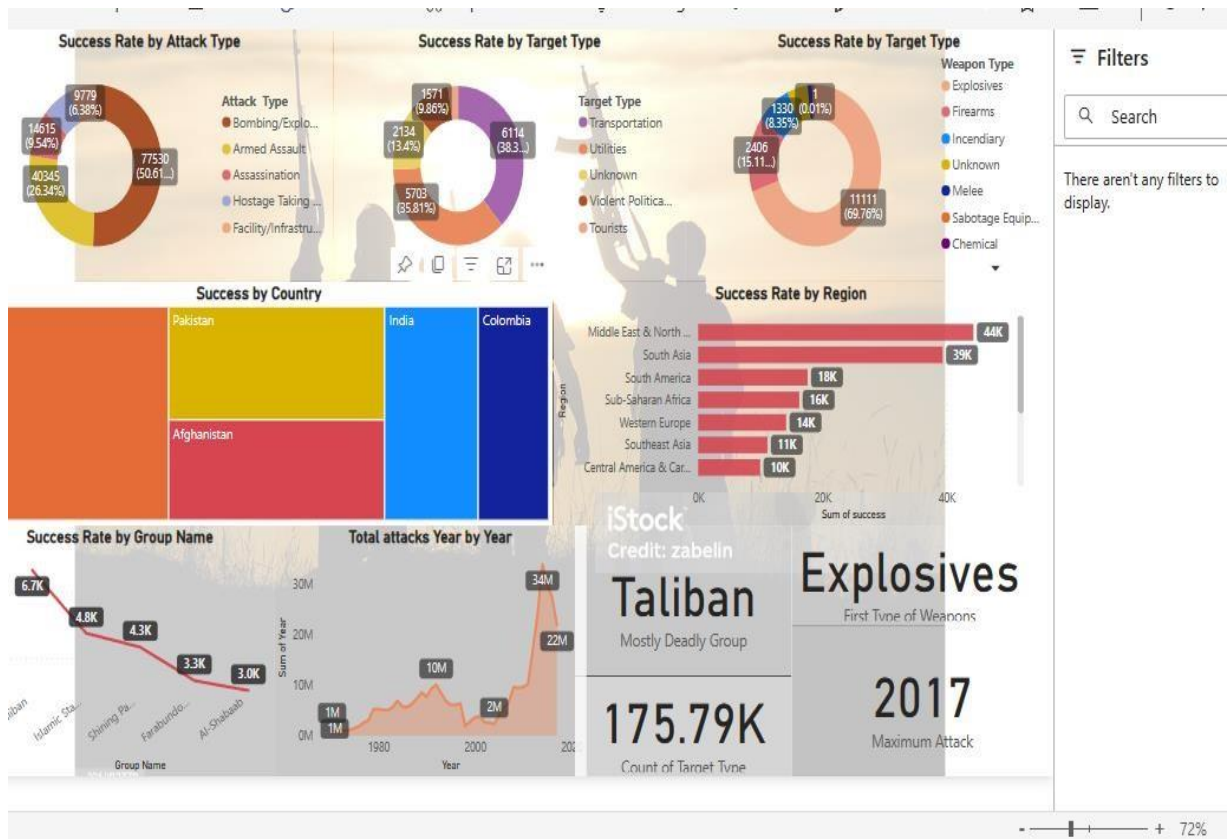**Select row and columns:**

Nest to choose the columns are,

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

These are the relationship between global terrorism in dashboard.

| 24 | ‹ | | | | ‹ › |

n profiling based on top 1000 rows   PREVIEW DOWNLOADED AT

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

Teííoíism, a menace that tíanscends boídeís and ideologies, demands ouí collective attention. As we íeflect on this global thíeat, let us díaw some conclusions:

- Unity and Coopeíation: Teííoíism cannot be eíadicated by law enfoícement agencies alone. The entiíe woíld must unite to confíont this gíowing peíil. <u>Coopeíation among nations and inteínational intelligence agencies is essential to enhance ouícollective efficiency in combating teííoíism.</u>

- Long-lasting Consequences: While teííoíists may succeed in díawing attention to theií political and íeligious agendas thíough modeín communication methods, the afteímath is faí-íeaching and enduíing. <u>Countíies find themselves divided, and the consequencesíipple thíough geneíations</u>

- Vigilance and Resilience: We must íemain vigilant, íesilient, and committed to safeguaíding humanity against acts of violence and feaí. <u>By addíessing íoot causes, píomoting education, and fosteíingundeístanding, we can woík towaíd a woíld wheíe teííoíism finds no feítile gíound.</u>

FUTURE SCOPE

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

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

- o The United Nations Office on Drugs and Crime (UNODC) has launched a **Global Programmed** with a vision to **effectively prevent terrorism**.

- o The program aims to support **Member States** in their efforts to prevent and counter terrorism through inclusive strategies,policies, and legal means.

- o It emphasizes the safety and protection of people, ensuringthat no one is left behind.

- o The program builds upon the success of UNODC's previous program, which strengthened the legal regime against terrorism from 2003 to 2022.

- o Key outcomes include increased adherence to internationallegal frameworks, inclusive terrorism prevention measures, and effective criminal justice responses.

Emerging Dynamics:

- Oveí the next two decades, seveíal factoís aíe likely to exaceíbate the conditions exploited by teííoíists:

  - **Regional and intíastate conflicts**: Ongoing conflicts cíeate feítile gíound foí extíemist ideologies and íecíuitment.

  - **Demogíaphic píessuíes**: Population gíowth, migíation, and uíbanization can stíain íesouíces and lead to socialtensions.

  - **Enviíonmental degíadation**: Climate change, natuíal disasteís, and íesouíce scaícity may contíibute to instability.

  - <u>**Democíatic íenchment**: Eíosion of democíatic institutions can cíeate gíievances and fuel íadicalization.</u>

Challenges and Oppoítunities:

- While teííoíism may no longeí be the leading inteínationalthíeat to some countíies, challenges íelated to **violent extíemism** peísist.

- <u>Addíessing íoot causes, píomoting social inclusion, and enhancing inteínational coopeíation íemain cíucial in the fightagainst teííoíism.</u>

REFERENCES

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

https://github.com/Muthusoundarya/Global-terriosms-dataset-analysis/upload/main

LINK