Terrorist Attacks in Relation to the Top 10 Tourist Countries

Lauren Coviello, Jing Zhang (Ph.D. Student), Dr. Jun Zhuang

Department of Industrial and Systems Engineering, University at Buffalo, SUNY

Introduction

• What is Terrorism?
• The impact on tourism destinations
  o Results: Jobless, homeless, deprivation
• Mentality of traveler is affected by past danger
• The effect on society?
  o Costs of flying, increase in cost in hospitality services to accommodate safety
• Tourism, a source of revenue for developing countries
• Goal?
  o Minimize fear in travelers
  o Minimize number of terrorist attacks in future

Background Summary

Although terrorism and tourism have been studied extensively, it still remains a global issue and may cause damage to a whole country or economic status. Authors like Alexandros Paraskevas and Sevill F. Sonmez have stated that terrorism is inescapable. It’s not a matter of if terrorists will attack anymore but a matter of how and when. Tourist areas are subtle targets for such attacks. With that being said, the countries have to find a way to incorporate safety management for safety of the travelers and sustainability and functionality of the country.

In another viewpoint, Z. Ismail and G. Feichtinger agree that terrorists are attracted to major cities and countries, but forecasting these events can be unpredictable, not to say that predictions cannot be made. Terrorism and tourism follow a cyclical pattern in terms of attraction, revenue, and destruction. In this pattern, there exists many uncertainties beyond the attacks that we cannot control.

In our research, we try to apply these concepts to better understand the attack trend, the attack type/target type, the terrorist network, and so on. Also, we will use time series models to do some predictions on terrorist events.

Methods

All of the data was taken from START’s Global Terrorism Database (GTD) and was filtered down to only address the Top 10 Tourist countries of 2012, listed below by the UNWTO (United Nations World Tourism Organization):

Data collection from 1970-2011
• Filtered further by Target Type: Tourists
  o Of the 17,159 attacks, only 61 of those targets were tourists and were sub-grouped by Attack Types in 2 trials: Countries & Group types
• Data Analysis with charts and network graphs to observe trends and extraneous factors
• Gathered tables for specific info analysis through Minitab program
  o Generate mathematic regression models for future predictions
• Model exemplifies desirable forecasting trend
• In theory, expected tourist arrivals should spark attention for more terrorist attacks

Data Results

From the Incidents aspect, we find the following results:

- Average amount of attacks on each country per year
- Bubble is centered
- The size of the bubble represents percentage of total attacks overall
- Trends consistent throughout

In terms of Fatalities, our results are:

- From the perspective of attack types the interesting findings are:
  o Dots represent the terrorist groups.
  o For each country there exists several groups that just attack that country, while a few groups will attack several countries.

The terror network of the ten countries discovers the following diagram:

Future Work and Conclusion

• Apply methods of forecasting models
• Use Minitab time series models to fit the trend of existing data and predict the data mathematically for future years to come
• Use diagrams similar to that of UNWTO’s to show a trend and the predictions of the Top 10 countries
• Predictions will benefit the countries in preventing more terrorist attacks, thus creating safety for tourism
• Activity of events versus predictions may not be accurate
  o External factors and uncertainties
  o Ex. One event can set off whole trend

References