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MORE > MOORE

Shark Attack Analysis 19.01.24

Context

300 000

people participate in water sports (USA, Australia, South Africa) every year

1 in 500

are attacked by a shark

7% of those attacks are fatal

Business problem

Hypotheses:

#1 Certain locations are more likely to lead to shark-related fatalities

#2 Certain activities are more likely to lead to shark-related fatalities

#3 Certain age groups are more vulnerable to shark-related attacks

#4 Certain months are more dangerous when considering shark-related fatalities

Data cleansing and manipulating activity:

Examples:

- made spelling uniform
- cleansed null values
  - removed
  - replaced with mode and median
- grouped activities to remove duplicates
- added additional columns:
  - activity risk scale (our perception thereof)
  - injury severity
- built risk calculator

Hypothesis 1: Certain locations are more likely to lead to shark-related fatalities

Visualisation of all shark attacks globally for all time

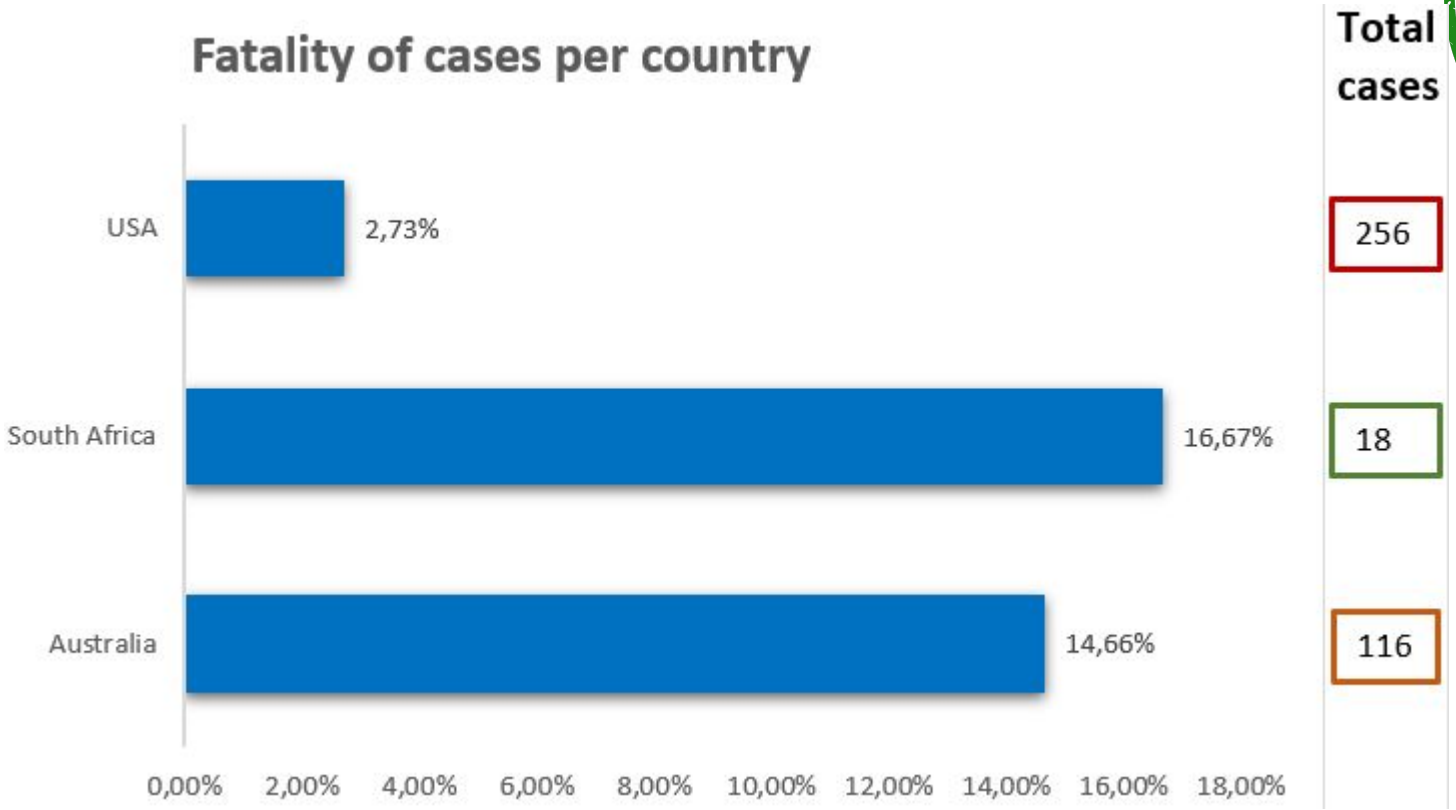
Hypothesis 1: Certain locations are more likely to lead to shark-related fatalities

Correlation coefficient (attacks, fatalities)

Australia = 0.96
USA = 0.96
South Africa = 0.89

By isolating USA, Australia and South Africa (top 3 countries for shark attacks), we can sample 2/3 of the data 'population' (*4610/6880 instances*):

Hypothesis 1: Certain locations are more likely to lead to shark-related fatalities



Hypothesis 2

Certain activities are more likely to lead to shark-related fatalities

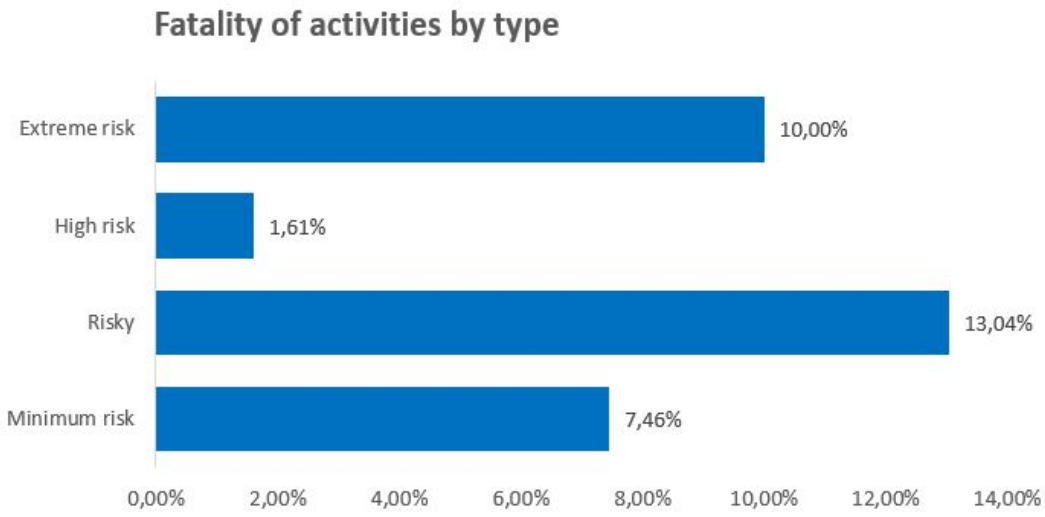
FAILED

Extreme risk - underwater activities (e.g. diving)

High risk - fishing

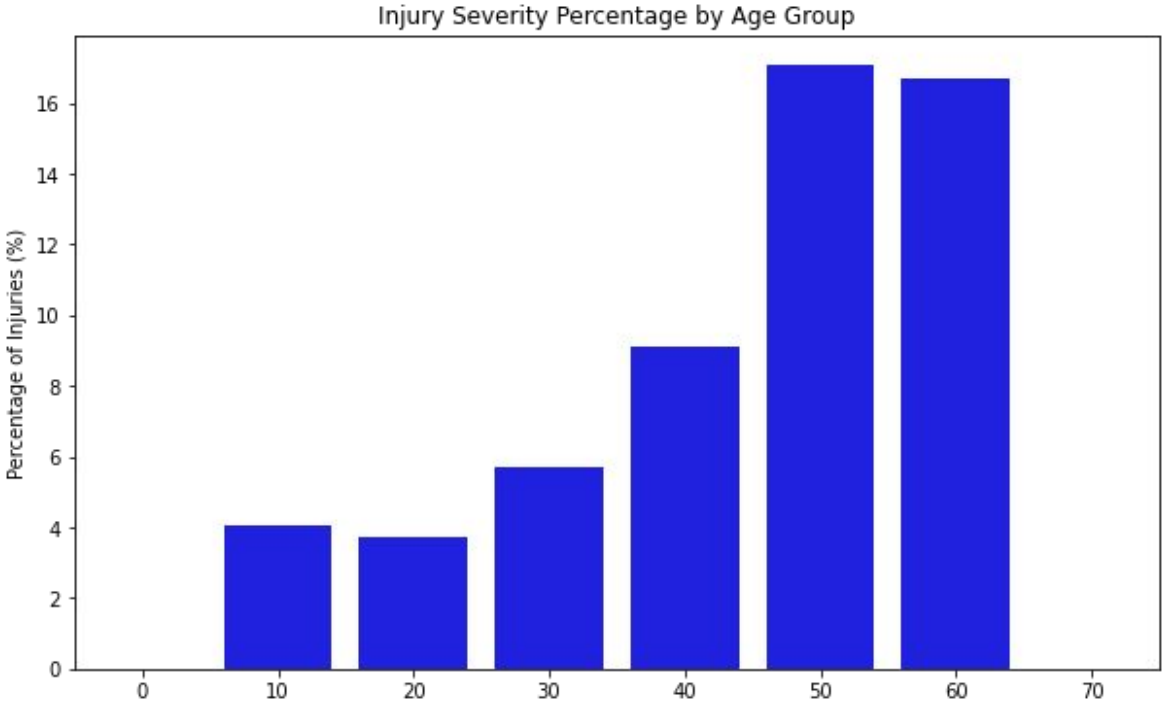
Risky - on-water activities (e.g. surfing, boarding)

Minimum risk - everything else



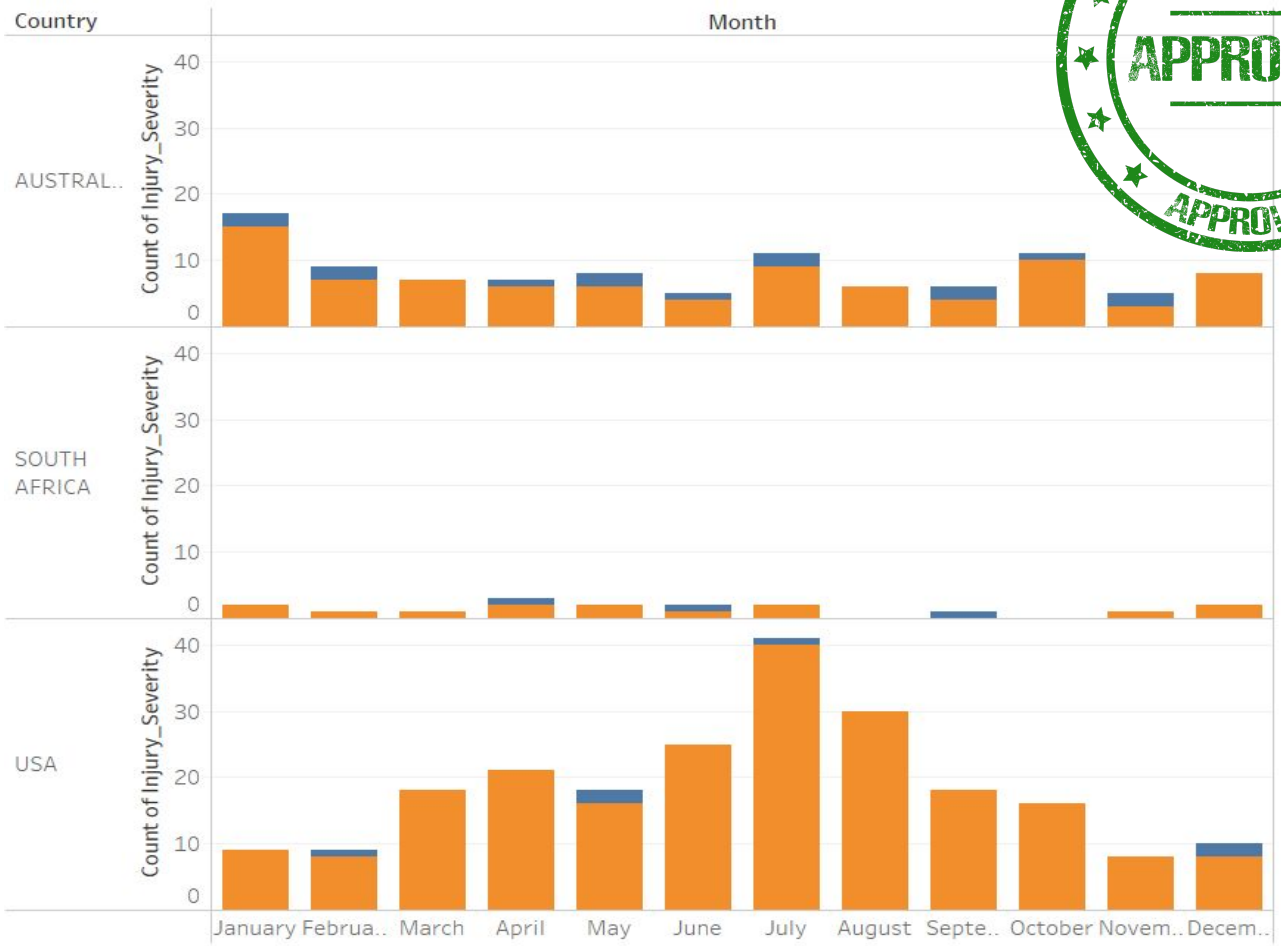
Hypothesis 3

Certain age groups are more vulnerable to shark-related attacks



Hypothesis 4

Certain months are more dangerous than others when considering shark-related fatalities



Hypotheses:

#1 Certain locations are more likely to lead to shark-related fatalities **VALIDATED**
Action: Increase tour offering in the USA

#2 Certain activities are more likely to lead to shark-related fatalities **FAILED**
Action: Further risk assess activities

#3 Certain age groups are more vulnerable to shark-related attacks **VALIDATED**
Action: Introduce protective measures for kids and over 50s

#4 Certain months are more dangerous when considering shark-related fatalities **VALIDATED**
Action #1: Improve marine monitoring in summer months (i.e. drones) due to increased demand for watersports
Action #2: Further research what drives increase in attack count in summer months

HOW MIGHT WE MITIGATE RISK?

Increasing transparency of risk through risk calculator