DRIVE SMARTER DECISION-MAKING

Een kennismaking met het IIBA Data Analytics Framework

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Welcome!

- Introductions
- The **Business Data Analytics Framework** illustrated using a case

The Business Data Analytics Framework helps Business Analysis Professionals in transforming data to usable insights that directly impact the success of the organisation.

Please allow us to introduce ourselves..



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IIBA® Dutch Chapter
Analysis Changes Everything

International Institute of Business Analysis

30,000 Members in 160 Countries

1500 Volunteers

120 Chapters in 40 Countries

500 Partners

ECBA™ CERTIFIED IIBA®

CCBA® CERTIFIED IIBA®

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Komende evenementen

IIBA NL Jaarcongres 2024
Hogeschool Utrecht
okt. 31, 2024
11:00 - 17:00 UTC+01:00

Data Informed Decision Making by Stephan Vlieland (Shell)
Hogeschool Rotterdam (HRO)
apr. 03, 2025
15:30 - 18:00

IIBA®

Raise your hand if you have *'data'* in your title/role name.



The scientific method



Case: the Titanic



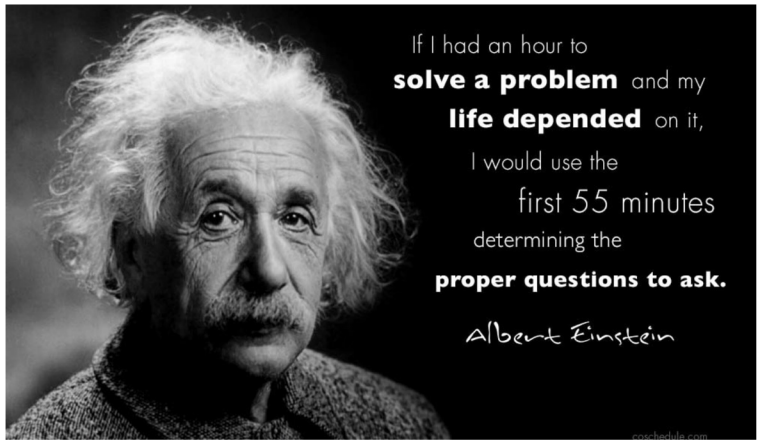
The value of a framework



Identify the research questions

Framework

- The research question is directly related to the *business need*.





- Stakeholder management
- What value is expected from the outcome?
- What are available resources for data analytics?
- Create a plan.
  - Types of questions.
  - Scalability (start with a pilot?)

Identify the research questions

Case

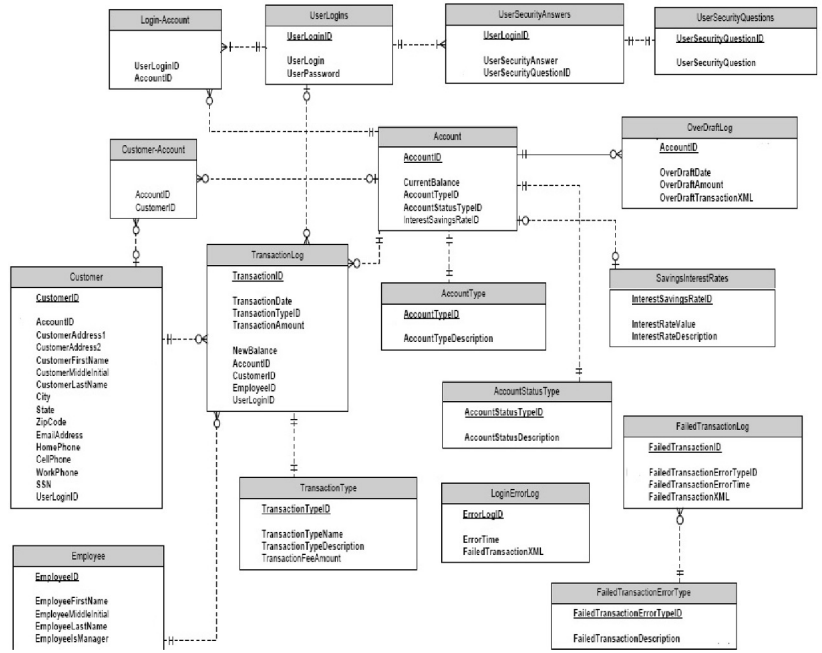
Which combination of variables are good predictors for survival?

- If you are a child (<18y) your survival chance is higher.
- If you are a woman your survival chance is higher
- If your cabin is closer to the deck/exit your survival chance is higher.
- If your ticket is higher class, your survival chance is higher.

Source data

Framework

- This may require (a lot) of technical knowledge.
- Plan
  - What data is needed when, with what frequency and (how) is it available?
  - How do we validate collected data?
- Determine data sets
  - Data types, dimensions, relations
  - BA's may support with visualisation and cost, risk, value, timing perspective
- Collecting data
  - Passive/ active
  - Analysts understand the sources and the needed transformations.



Source data

Case

- Which data do we need to answer the central research questions?

- https://www.kaggle.com/datasets/yasserh/titanic-dataset

Analyze data

Framework



- Plan
  - What (pre-processed) data is needed?
  - What models will be applied?
- Preparing dates
  - Gain access.
  - Making connections between data.
  - Ensure that data is 'in balance', e.g. no biases.
- Exploring data
  - Check/validate.
  - Identifying trends/patterns/missing data.
  - Explore applicability for specific models.
- Apply models
- Assessing the approach
  - Do the results help to answer the research question?

Analyze data

Case

- Create your data analysis plan: which technique(s) will you use?
- Look at your data: are there missing values? Are there values that need conversion?

Overview Titanic data set

The Titanic dataset contains 891 entries and 12 columns.

- PassengerId: unique identifier for a passenger
- Survived: binary indicator (0 = No, 1 = Yes) to indicate whether a passenger survived or not
- Pclass: Passenger ticket class (1 = First, 2 = Second, 3 = Third).
- Name: full passenger name
- Sex: passenger sex
- Age: passenger age *(some missing values)*
- SibSp: number of siblings or spouse(s) on board
- Parch: number of children or parents on board
- Ticket: ticket number
- Fare: ticket price
- Cabin: cabin number *(many missing values)*
- Embarked: location the passenger embarked (C = Cherbourg, Q = Queenstown, S = Southampton) *(some missing values)*

Interpret & report results

Framework



- Re-assess your understanding of the stakeholders
  - What is their stake?
  - Relevance of research questions?
  - Can they cope with models?
- Plan communication
  - What needs to be communicated to who in what way?
  - What are specific stakeholder needs? (e.g. level of detail, formality).
- Getting insights
  - Use tools, visuals, data models
- Capture and share results
  - Explain the proces
  - The power is in the facts. Let the data speak and tell the story in “business language”.

Interpret & report results

Case

- Create your communication plan: how will you communicate the results to your stakeholders?
- Which visualisations can aid you to communicate your results?

TITANIC SURVIVAL ANALYSIS

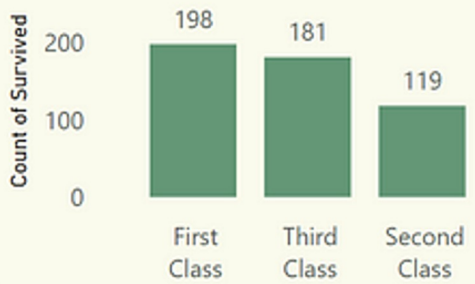
Average Fare	Total Passengers	Survivors	Female Deaths	Male Deaths	Total Deaths
33.22	1307	498	127	682	809

This titanic dataset has information about passengers on board in the titanic ship in 1912. It has information about various records of their gender, age, passenger class, and survival status.

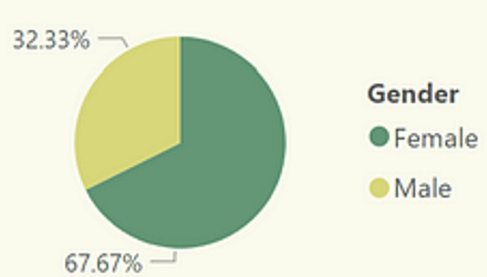
Embarked

- [ ] Cherbourg
- [ ] Queenstown
- [ ] Southampton

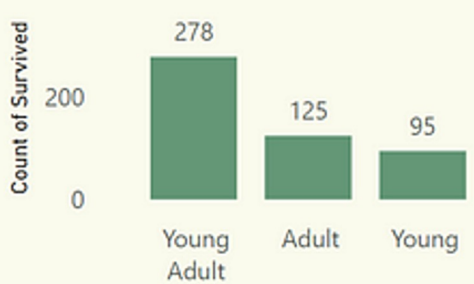
Survival by passenger class



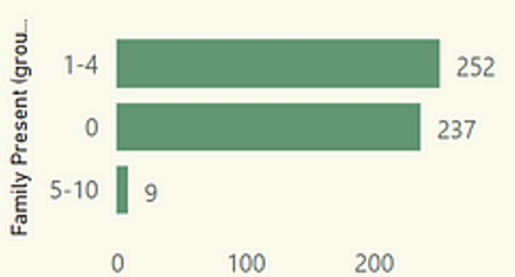
Gender Ratio



Survival by age group

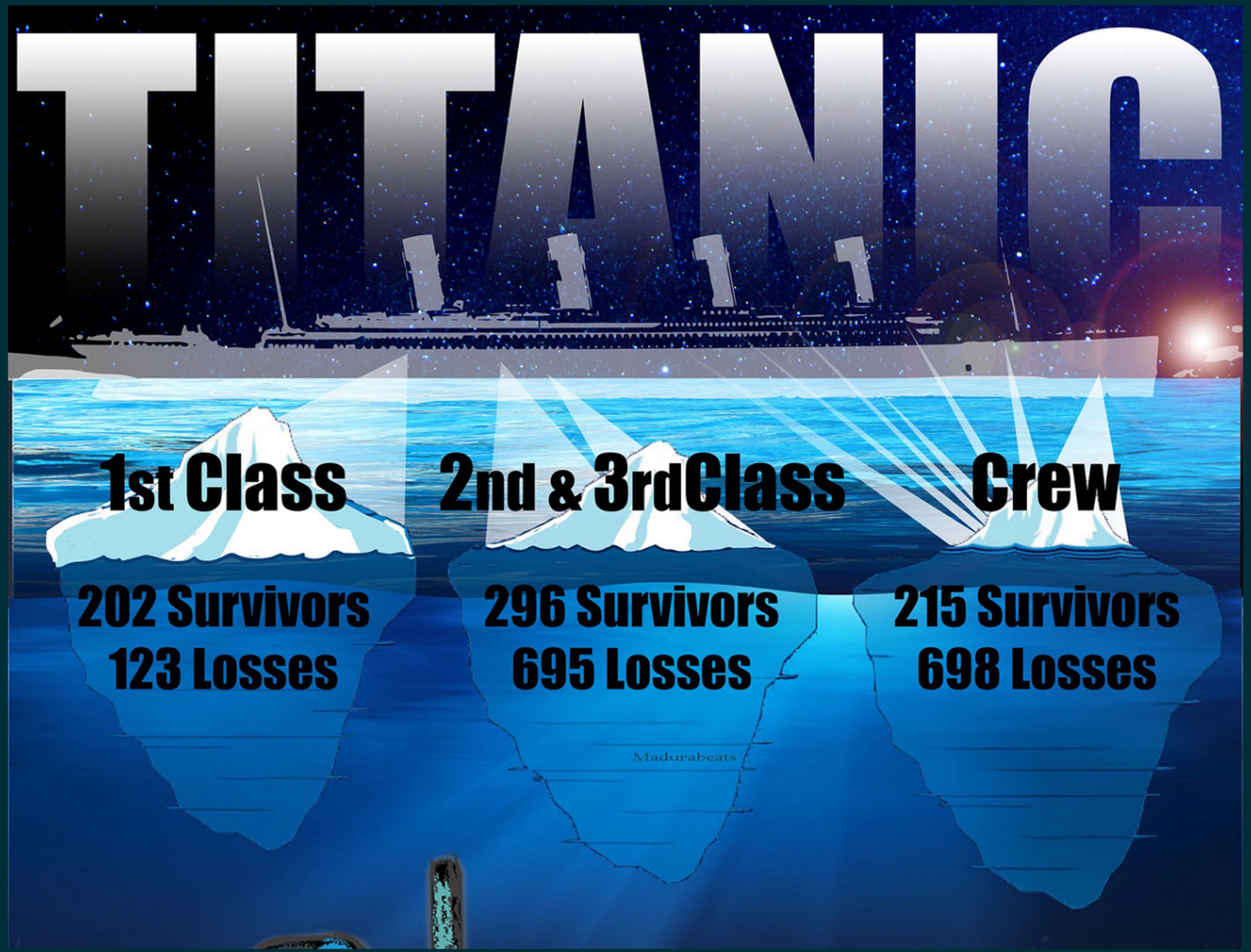


Survival by family present



The analysis showed that passengers who were young adults(16-40) had a higher survival rate compared to the other age groups.
It was also showed that passengers in the first class had a higher survival rate(198) compared to those in the second class(119) and third class(181)

In the analysis carried out, it was shown that females had a higher chance of survival and a speculation around this factor is that the women and children were prioritized
The chances of surviving when you have more than 4 family members was also found to be low in the analysis
Upon the completion of this analysis, some factors were discovered that influenced the survival of most passengers during the accident


TITANIC
1st Class
2nd & 3rd Class
Crew
202 Survivors
123 Losses
296 Survivors
695 Losses
215 Survivors
698 Losses
Madurabeats

Use results to influence business decision making

Framework

- To support decision-making, also in real-time (e.g. in e-commerce)
- Evaluates the success of data analytics; has the research question been adequately answered?
- In the end, the problem/opportunity must be addressed.
- Translation into recommendations/options for solutions.
  - Analytics results play a role in this, but the regular BA tasks are also discussed here.
- Create implementation plan
  - No different from other initiatives.
- Manage the change
  - As usual, the BA supports a “Change management team”



Use results to influence business decision making

Case

- People travelling in a higher class had a better chance of survival.

  “Ensure that passengers have access to life saving appliances, regardless of class.”

- People who traveled in larger families has a lower chance of survival.

  “Create protocols to evacuate large families (and other groups) and test these protocols during safety drills.”

Is the CBDA certificate for you?

The Certification in Business Data Analytics is useful for business analysts who already work with data, or want to work with data.



- There are no specific prerequisites or required (work) experience.
- You don’t need an IIBA core certificate (ECBA, CCBA, CBAP); but it helps if you are familiar with the BABoK.
- You will learn new ways to analyse data, formulating research questions, finding and assessing data.
- Data analysis is a growing field that is receiving increasing attention within companies.


Thank
you







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The Daily Business Analyst