



HR Analytics

Making People Decisions with Data

$$Y = f(X)$$

Problem Definition

- What is the business pain & what can HR do about it?
- Quantify how much impact can HR create?

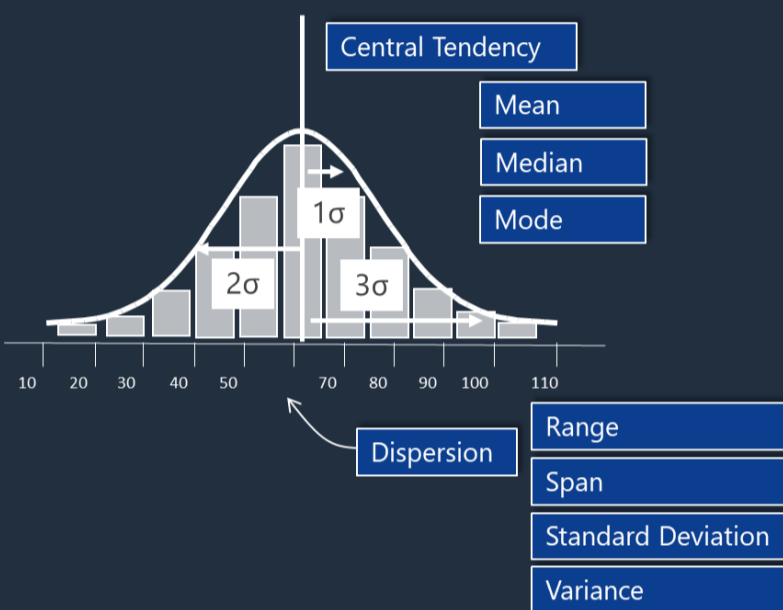
Data Collection

- What factors (Xs) impact the desired outcomes?
- What data is available & what needs to be collected?
- Collect sufficient data to that is representative of reality
- Clean data and prepare for Descriptive Analytics

- Measurement Data
- Absolute Counts
- Discrete Data (Y/N, H/M/L, AA/BB/CC)
- Ratios

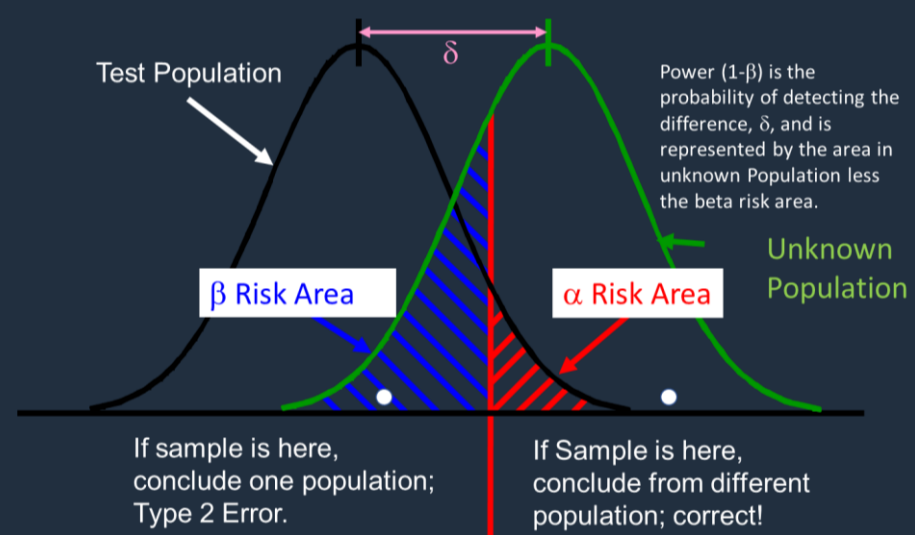
Descriptive Analytics

- Perform the following Analytics for each factor to study central tendency, dispersion, distortion and its impact on outcome:
- Distribution Plot/Histogram
- Boxplot
- Outlier Analytics
- Mean, Median, Mode
- Range, Span, SD
- Coeff of Variation, Skew(), Kurt()



Diagnostic Analytics

1. Framing the hypotheses – Ho & Ha Alternate
2. Decide on acceptable risks – α & β
3. Data collection
4. Selection of appropriate test
5. Perform test
6. Draw statistical inferences



Criteria

- p-value > 0.05 → Two groups are not different
- p-value < 0.05 → Two groups are different

| | | X Data | |
|--------|------------|------------------|--------------------------|
| | | Discrete | Continuous |
| Y Data | Discrete | χ^2 Test | Logistic Regression |
| | Continuous | T Tests ANOVA | Correlation & Regression |

Predictive Analytics

- Using Regressors to model data for prediction
- For Linear Relationships
 - Linear Regression
 - Logistic Regression
 - SVM
- For Non-linear Relationship
 - Naïve Bayes
 - Decision Trees – Classifier/Regressor
 - Neural Networks

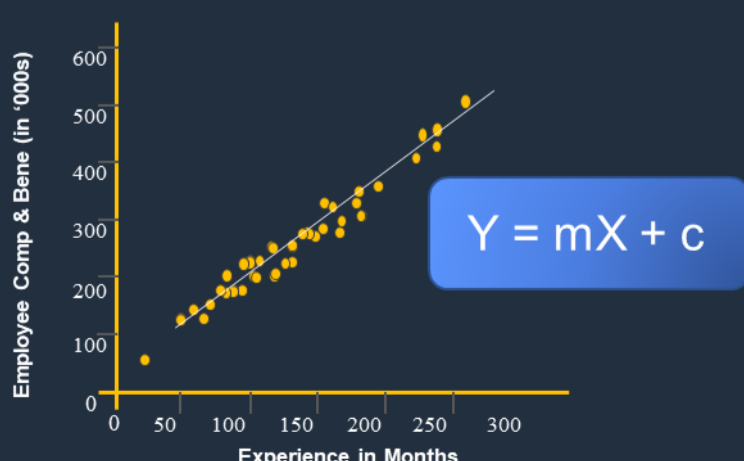
Direction of Relationship

Shape of Relationship

Strength of Relationship

Correlation

- Pearson's r beyond (+/-) 0.8 for linear
- Spearman's Rho for non-linear



Model Accuracy Measures

Regression

- Coeff of Determination R-sq > 65 % ~ Rsq Adj
- VIF < 5
- Residual Analysis

To know more about:

HR Analytics Education

HR-Analytics-As-A-Service

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