

[Lesson 1: Introduction to Predictive Analytics](#)

Overview

What is Analytics?

Why do We Use Analytics?

Few Real-Life Applications of Analytics:

Analytics in Decision Making?

Type of Analytics

Tools Used

Predictive Analytics

Organizations using Predictive Analysis

Predictive Analysis Outline of process

Typical House of Analytics Excellence

What has changed to push analytics

Challenges in setting up Analytics

Analytics in Different Industries:

Consumer Product & Service Industry

Insurance & Risk assessment

Manufacturing

Health Care

IT

Telecom

Supply Chain

Digital Analytics

Road Map of Implementing Analytics

Type of Analytics Tools Used

[Lesson : Analysing Relationships](#)

Covariance

Covariance Meaning and Perspective:

How to Measure degree of Relationship

How to Calculate

Correlation

Correlation Meaning and Perspective

How to Measure degree of Relationship

How to Calculate

Regression O

Regression Meaning and Perspective

How to Measure degree of Relationship

How to Calculate

What to use When

[Lesson : Terms for every Analyst \(Part 1\)](#)

Linear and Non Linear Relationships

R Square

Multiple R

Adjusted R Square

Residual

Degree of Freedom (Df) 6

Standard Error

Standard Error or Standard Error of Measurement

Standard Error of Estimate (SE)

Standard Error of Mean

At a Glance

Normal Distribution

Statistics Involving Z

Confidence Interval

Confidence Level

Z-Score

Critical Value

Critical Z

Z Test

T-Stats

Critical T

Effect Size

Margin of Error

Sample Size

Sum of Square

Total SS

Residual SS or Error SS

Regression SS

Mean Square

Types of MS
Regression MS
Residual MS

[Lesson : Terms for every Analyst \(Part \)](#)

F Test

Significant F
F Value or Ratio
F-Critical Value

P - Value

Relation between P – Value And Level of Significance
Upper and Lower Limit 9%

Type of Test 0

One-Sided Test

Left Tailed Test
Right Tailed Test

Two-Sided Test

Determine which test to use

Using Tables for One- and Two-Tailed Tests

Hypothesis Testing

Simple Hypothesis
Composite Hypothesis

Hypothesis Steps Tests

Making Assumption – Ground Work
State the hypotheses
Set the criteria for a decision
Make a decision
Consequences of Type I and Type II Error

[Lesson : Introduction to Regression](#)

Regression 1

Definition
Direction
Form
Strength

Dependent & Independent Variable

Classification of Regression

Linear & Non Linear Regression

A look into Non-linear Regressions

Michaelis–Menten model

Exponential Regression

Logarithmic Regression

Trigonometric functions

Power functions

Gaussian function

Logistic Regression

Linear Regression

Assumptions

Factors to Consider

Interpretation

Regression Model Development 1

[Lesson 6: Building Regression Model](#)

Linear Model Building

Assumptions

Linearity

Homoscedasticity

Weak Exogeneity

Independence of errors (AKA No autocorrelation)

No multicollinearity

What Regression Does

Equation

Goal of Regression is

Method of Ordinary Least Squares (OLS)

Check for Potential Problems with linear regression which needs to be avoided

Validate Your Model

Linear Relationship

Fitting the Model

R

[Lesson : Multiple Regression Model](#)

Multiple Regression

Multiple Regression Meaning and Perspective:

Type of Multiple Regression:

Multiple Regression is not Multivariate Regression

Difference between Multiple & Multivariate Regression

Objective of using Multiple Linear Regression:

Multiple Regression for Prediction:

Multiple Regression for Explanation:

Multiple Regression for Hypothesis testing in Model:

Factors that can affect the result of Multiple Regression

Nature of Dependent Variable

Multicollinearity

Singularity

Endogeneity

Semi partial (Part) Correlation

Partial Correlation

How to Measure degree of Relationship:

Example

Making Predictions:

Creating a Model

Goals

Check for Potential Problems with linear regression which needs to be avoided

Example