



## Effective Business Decisions Using Data Analysis Training

### Description

#### Introduction

This interactive, applications-driven 5-day course will highlight the added value that data analytics can offer a professional as a decision support tool in management decision making. It will show the use of data analytics to support strategic initiatives; to inform on policy information; and to direct operational decision making. The course will emphasize applications of data analytics in management practice; focus on the valid interpretation of data analytics findings; and create a clearer understanding of how to integrate quantitative reasoning into management decision making. Exposure to the discipline of data analytics will ultimately promote greater confidence in the use of evidence-based information to support management decision making.

This course will feature:

- Discussions on applications of data analytics in management
- The importance of data in data analytics
- Applying data analytical methods through worked examples
- Focusing on management interpretation of statistical evidence
- How to integrate statistical thinking into the work domain objectives

By the end of this course, participants will be able to:

- Appreciate data analytics in a decision support role.
- Explain the scope and structure of data analytics.
- Apply a cross-section of useful data analytics.
- Interpret meaningfully and critically assess statistical evidence.
- Identify relevant applications of data analytics in practice.

Contents

Day One

## Setting the Statistical Scene in Management

Introduction; The quantitative landscape in management

Thinking statistically about applications in management (identifying KPIs)

The integrative elements of data analytics

Data: The raw material of data analytics (types, quality and data preparation)

Exploratory data analysis using excel (pivot tables)

Using summary tables and visual displays to profile sample data

Day Two

## Evidence-based Observational Decision Making

Numeric descriptors to profile numeric sample data

Central and non-central location measures

Quantifying dispersion in sample data

Examine the distribution of numeric measures (skewness and bimodal)

Exploring relationships between numeric descriptors

Breakdown analysis of numeric measures

Day Three

## Statistical Decision Making – Drawing Inferences from Sample Data

The foundations of statistical inference

Quantifying uncertainty in data – the normal probability distribution

The importance of sampling in inferential analysis

Sampling methods (random-based sampling techniques)

Understanding the sampling distribution concept

Confidence interval estimation

Day Four

## Statistical Decision Making – Drawing Inferences from Hypotheses Testing

The rationale of hypotheses testing

The hypothesis testing process and types of errors

Single population tests (tests for a single mean)

Two independent population tests of means

Matched pairs test scenarios

Comparing means across multiple populations

Day Five

## Predictive Decision Making – Statistical Modeling and Data Mining

Exploiting statistical relationships to build prediction-based models

Model building using regression analysis

Model building process – the rationale and evaluation of regression models

Data mining overview – its evolution

Descriptive data mining – applications in management

Predictive (goal-directed) data mining – management applications

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