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