BTS
Training & Consultancy

Effective Business Decisions Using Data Analysis

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Effective Business Decisions Using Data Analysis

Course Summary:

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.

Personal Impact:

- 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

Organizational Impact:

Big data analytics is the process of examining large and varied data sets -- i.e., big data -- to uncover hidden patterns, unknown correlations, market trends, customer preferences and other useful information that can help organizations make more-informed business decisions.

Training Methodology:

This course will utilize a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The daily workshops will be highly interactive and participative. This involves regular discussion of applications as well as hands-on exposure to data analytics techniques

using Microsoft Excel. Delegates are strongly encouraged to bring and analyze data from their own work domain. This adds greater relevancy to the content. Emphasis is also placed on the valid interpretation of statistical evidence in a management context.

Who Should Attend?

This course is suitable to a wide range of professionals but will greatly benefit:

- Professionals in management support roles
- Analysts who typically encounter data / analytical information regularly in their work environment
- Those who seek to derive greater decision making value from data analytics

Course Objectives:

By the end of this course, delegates will learn about:

- 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

Course Outline:

Setting the Statistical Scene in Management

Competency Description: As a manager you need to develop quantitative reasoning skills to support evidence-based decision making.

Key behaviors:

- Appreciate the role of data analytics in management decision making

- Understand the scope and structure of data analytics
- Understand the importance of data quality and data integrity
- Develop a practical ability to prepare data for statistical analysis
- Be able to interpret summary tables and graphs to extract key information

Topics to be covered:

- 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

Evidence-based Observational Decision Making

Competency Description: As a manager you need to interpret summarized numerical sample evidence to support management decision making.

Key behaviors:

- Be able to interpret numeric sample descriptive measures to profile sample evidence
- Distinguish between different central location measures
- Understand how to quantify and interpret variability in data
- Recognize data outliers and their impact on data validity
- Identify influencing factors on key measures performance

Topics to be covered:

- 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

Statistical Decision Making – Drawing Inferences from Sample Data

Competency Description: As a manager you need to distinguish between chance and genuine occurrences or relationships in practice based on sample evidence.

Key behaviors:

- Appreciate the fundamental concepts to infer sample evidence to business practice
- Understand how to manage (measure and interpret) business uncertainty
- Prepare and interpret confidence interval estimates of key performance measures

Topics to be covered:

- 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

Testing Statistical Decision Making – Drawing Inferences from Hypotheses

Competency Description: As a manager you need to demonstrate an ability to base management decisions on rigorously tested sample evidence.

Key behaviors:

- Be able to formulate management questions as testable statistical hypotheses
- Understand the principle and methodology of testing statistical hypotheses
- Be able to interpret statistical hypotheses conclusions in a management context

- Choose the appropriate hypotheses test for on a given management scenario

Topics to be covered:

- 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

Predictive Decision Making - Statistical Modeling and Data Mining

Competency Description: As a manager you need to prepare forecasts or future estimates of key performance measures based on identified influencing factors.

Key behaviors:

- Understand the model-building environment
- Be able to identify significant influencing factors on a key performance measure
- Interpret the relative importance of each significant factor on the key performance measure
- Prepare future estimates / forecasts based on the identified relationships
- Appreciate the strategic value of mining large data sets of business activities
- Distinguish between goal-directed data mining and descriptive data mining

Topics to be covered:

- 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
- Descriptive data mining – applications in management