Data Analysis Methods

How To Abstract Commanding Information From Data

Introduction

Everyone knows that the secret to success in the workplace is evidence-based decision making. The data that businesses possess can be a very rich and potent source of evidence in a world where everything is now measured and recorded, but only if it can be properly and consistently analysed and understood. Delegates will learn how to analyse and evaluate data through this training course on data analysis techniques, which will enable them to make solid and convincing business decisions based on facts.

Using actual data, the Data Analysis Methods training course teaches participants how to utilise Microsoft Excel to conduct a wide range of potent analyses and interpretations. This is feasible because, despite the fact that the majority of people are familiar with Microsoft Excel, they typically utilise just a small portion of its full potential. Through an explanation and demonstration of many of Excel's extremely potent analytical, visualisation, and interpretation tools, this training session will teach attendees how to get the most out of the programme.

The following will be covered in this Course N Carry Data Analysis Methods training course:

- Take a rational approach to solving a data analysis issue.
- Reduce the possibility of errors and increase the accuracy of the analysis
- Identify and convey information from intricate numerical data
- Analyse data aspects and make judgements based on the best available evidence.
- Conduct a "what if" examination of the situation.
- Regression analysis can be used to forecast a system's or process's future behaviour.
- Use data science techniques to forecast a system's or process's future behaviour.
- Utilise ANOVA, or analysis of variance, to reduce the possibility of incorrect interpretation.
- Utilise as many of Microsoft Excel's sophisticated capabilities as possible to get the most out of it.

Objectives

The goal of this Data Analysis Methods training course is to give participants who analyze numerical data the knowledge and skills they need to turn data into information through appropriate analysis, communicate these findings to other members of the

organization easily, and use the information to make evidence-based business decisions.

Upon completion of this training session on Data Analysis Methods, you will possess:

- A solid grasp of and a great deal of hands-on experience with a variety of standard analytical tools and approaches for numerical data interpretation
- The capacity to identify which analytic techniques are most appropriate for a given set of issues
- The capacity to determine when the application of a procedure is likely to provide inaccurate results
- A solid grasp of a variety of standard statistical techniques and procedures
- The capacity to evaluate and comprehend a variety of real data kinds using Microsoft Excel 2016, 2019, or Office365
- Knowledge of how to convert numerical data into proof, and hence, the ability to make well-informed commercial decisions.

Training Methodology

With a focus on problem-based learning, this Data Analysis Method training course presents participants with a series of extremely practical data analysis problems drawn from a broad range of applications, including engineering, finance, product sales, and Six Sigma quality control.

Every challenge has been specifically selected to showcase and illustrate a particular data analysis methodology. Since all of the analytical techniques are general, they can be used on data from any kind of organisation, business, or industry.

During the full hands-on training session on Data Analysis Techniques, participants work exclusively with Microsoft Excel to answer the given challenges.

Organizational impacts

The modern business culture requires ongoing savings in operating, maintenance, support service, and administrative costs in addition to gains in workplace efficiency.

In order to find improvements and efficiencies, support business decision-making, and meet ever-higher performance goals, managers, administrators, and analysts must keep utilising data more effectively.

Employees will leave this training session on data analysis techniques with the knowledge and skills necessary to evaluate any type of numerical business data and use that data to support sound, fact-based decisions.

Personal Impact

As delegates acquire experience, they will become more confident in their ability to tackle data analysis problems logically and with planning. Students will gain knowledge and experience in deriving insights from diverse numerical data sets and applying this knowledge to create evidence-based decisions.

Additionally, delegates will get a great deal of proficiency utilising Microsoft Excel, including many of its sophisticated capabilities like Pivot Tables, Forms Controls-powered interactive spreadsheets, the Data Analysis Tool Pack, and the Solver built-in solving engine.

Who should attend?

Any professional whose work entails the manipulation, analysis, representation, and interpretation of data—along with the ensuing process of making evidence-based business decisions—is intended to benefit from this training program.

Delegates should enjoy dealing with numerical data on a computer and be numerate. Experience with a PC is required, especially with Microsoft Excel (2013 or later).

Although this Course N Carry Data Analysis Methods training course is appropriate for professionals in any industry sector, those in the following fields will particularly benefit from it:

- Evaluation and tracking of performance
- Planning
- Data Interpretation
- Leadership and Management
- Finance
- Human Resource
- Quality assurance
- Technology and Engineering
- Actually, any job function makes judgments based on facts.

Course Outline

Day 1

Pivot tables, Descriptive Statistics, and Logical and Trustworthy Data Analysis

- Importing data into Excel
- Optimal procedures for data analysis

- Interpreting and displaying coded data
- What does descriptive statistics mean?
- Carrying out a frequency analysis
- Utilising pivot charts and tables
- Handling outliers, statistical significance, and noisy and incomplete data

Day 2

Analysis of Data Mode and Shape

- Data Plotted Against Time
- Creating Mode Shapes for Data
- Curves fitting data
- Mode form and time-based events are related.
- Time series analysis interpretation
- Computations of the moving average

Day 3

Scenario Analysis and Spreadsheets That Are Interactive

- Analytical difficulties represented as MIST (Multi-Input, Single-Output) systems
- Analysis of deterministic systems
- Visual scenario analysis and what-if
- Spreadsheets that are dynamic or interactive and the usage of forms control
- Adaptive, conditional, and moving window computations
- Assessing the responsiveness of computed variables

Day 4

Correlation and Regression Analysis

- Curve equations
- Regression analysis is the process of predicting future behavior from the shape of data.
- Power curve, polynomial, exponential, and linear fits
- The dangers of excessive fitting
- Data end-effects
- R2 and goodness of fit, or sum of square error, or SSE
- Equation evaluation, equation solving, and Solver use
- Causality and correlation

Day 5

Data-Driven Approaches and Variance Analysis

- Non-linear system
- Data-driven techniques
- Future prediction is one step ahead with data science (multivariate correlation)
- ANOVA, or Single Factor Analysis of Variance
- Two-factor variance analysis
- An example of artificial intelligence: is the problem of the traveling salesman

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