KOENIG SOLUTIONS · COURSE OUTLINE

# Excel Analytics: Linear Regression Analysis in MS Excel

Learn to prepare data, build linear regression models in Excel and apply them to optimise business decisions.

| 8 Hours | 5 | 39 | 3 |
|---|---|---|---|
| DURATION | MODULES | TOPICS | HANDS-ON ACTIVITIES |

## COURSE OVERVIEW

Identify the business problem which can be solved using linear regression technique of Machine Learning. Create a linear regression model in Excel and analyse its result. Confidently practice, discuss and understand Machine Learning concepts

## WHO THIS COURSE IS FOR

- **Working Professionals beginning their Data journey**
- **Anyone curious to master Linear Regression in short span of time**

## LEARNING OBJECTIVES

- Identify business problems suited to linear regression
- Gather business knowledge and explore data for modelling
- Treat outliers and impute missing values in Excel
- Create dummy variables for qualitative data
- Analyse correlation between variables using a correlation matrix
- Build simple and multiple linear regression models
- Assess model accuracy using RSE, R squared and F-statistic
- Apply Solver and Scenario Manager to optimise business models

COURSE SYLLABUS

# 5 Modules, 39 Topics

01

## Introduction

TOPICS

Introduction

02

Quiz

## Getting Data Ready for Regression Model

TOPICS

- Gathering business knowledge
- Data Exploration
- Course Resources
- This is a milestone!
- The Data and the Data Dictionary
- Univariate analysis and EDD
- Descriptive Data Analytics in Excel
- Outlier Treatment
- Identifying and Treating Outliers in Excel
- Missing Value Imputation
- Identifying and Treating missing values in Excel
- Variable Transformation in Excel
- **Dummy variable creation:** Handling qualitative data
- Dummy Variable Creation in Excel
- Correlation Analysis
- Creating Correlation Matrix in Excel

03

2 Quizes

## Creating Regression Model

TOPICS

- The Problem Statement
- Basic Equations and Ordinary Least Squares (OLS) method
- Assessing accuracy of predicted coefficients
- **Assessing Model Accuracy:** RSE and R squared
- Creating Simple Linear Regression model
- Multiple Linear Regression
- The F - statistic
- Interpreting results of Categorical variables
- Creating Multiple Linear Regression model
- **Excel:** Running Linear Regression using Solver

04

## Optimizing Business Models - Case Studies

TOPICS

- Introduction
- Goal-seek and Scenario Manager in Excel
- Solver in Excel
- Different Solving methods of Excel Solver
- Solving a Transportation problem
- Price Skimming
- Excel - Price Skimming model
- Concept of Customer lifetime Value
- Excel - Calculating customer lifetime value

05

## Bonus Section

TOPICS

Popular Excel charts · The final milestone! · Bonus Lecture

HANDS-ON ACTIVITIES

# Practise What You Learn

| # | MODULE | ACTIVITY |
|---|---|---|
| 02 | **Getting Data Ready for Regression Model** | Quiz |
| 03 | **Creating Regression Model** | ■ Quiz<br>■ Quiz |

WHAT IS INCLUDED

## Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

## Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

## Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

### Ready to Get Started?

Talk to a learning advisor about schedules, group training and customised delivery.

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