Data Analysis using SPSS for Managers and Researchers

Instructor Profile
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Dr. Akhter Raza received his Ph.D. in 2011 from Dept. of Computer Science University of Karachi. He had an extensive experience in data analysis and Big Data Analytical modeling. Dr. Raza had several peer reviewed publications and authored 4 books out of which two were published from Germany and are available at amazon.com. His research interests include AI, soft computing, data mining, Big Data Analytics, simulations and stochastic modeling. He is a senior member of IACSIT and recipient of best teacher award by the Education Department Govt. of Sindh at the occasion of World Teachers Day 2011.

Course Description:
The overall objective of this course is to develop students' abilities to describe, analyze and interpret data soundly, making effective use of statistical software SPSS. Statistical methods are important across the range of Management School subject areas like accounting & finance, marketing, economics, operational and Business research. In this course real practical business research problems will be discussed and analyzed using SPSS. Most of the data analysis techniques will be covered and explained.

Learning Outcomes:
By the end of the course you should be able to do following tasks using SPSS:

- User interface of SPSS and overview of its desktop
- Entering, coding, validating and using data
- How descriptive measures of the data are obtained?
- When and how to apply discrete probability distributions (Uniform, Poisson and Binomial) including use of probability formulae and tables?
- Real applications of continuous probability distributions (Uniform, Normal and Exponential) including use of probability formulae and tables
- What are Inferential techniques including the Central Limit Theorem and confidence and prediction intervals
- Checking assumptions of randomness, normality, homoscedasticity, and Multicollinearity
- When and how to compare mean, variance and proportion of a population
- When and how compare means, variance, and proportions of two populations
- When and how to apply the Chi-Square Statistic to test for independence;
- Be aware of nonparametric statistical tests and their role in decision making
- When and how to fit simple linear and non linear regression models
- Appreciate the potential role of multiple regression models.
- Using dummy variables in regression models and inferential methods in regression and Correlation, logistic regression
- When and how to apply multiple and partial correlation
- When and how to use factor analysis in multivariate data analysis scenarios
• Analysis of variance for testing the equality of several population means with one-way, two-way and factorial designs
• be familiar with time series models ARIMA, ARCH and GARCH and their implementation

**Teaching Methodology:**
A fast moving, interactive, but structured training cum lecture based course comprised over 18 tutorial sessions each of two hours, most of them in computer lab. The lectures will present the concepts, methods and results, drawing on business research applications to illustrate using SPSS. Pdf files of lecture slides and other notes will be placed on Dr. Raza’s course portal https://sites.google.com/site/drakhter67

**Course Duration:**
Total duration of this course is 36 hours which is broken into 18 lectures each of two hours 3 lectures per week