Course Proposition and Executive Summary

Where information or data is not available, primary data collection often is needed. As much as the ideal case is to collect information or data from the entire population, at times this becomes an impossible feat due to its massiveness. That is why sampling is required and to ensure the data remains robust and representative of the larger population, unbiased sampling techniques are often performed. Furthermore, where data gathering involves surveys, the methodology and approach is often imperative to the representativeness of the population behavior. One of the ways to test the reliability and construct of a surveys is to perform a factor analysis, of which has been used widely in social research in terms of behavioral sciences and psychological studies in terms of psychometrics.

In this course, participants will not only learn the importance and types of unbiased sampling techniques and survey methodologies, factor analysis in terms of validating the reliability of the constructs of a survey will also be covered.

This course is designed for executives, analysts and researchers looking to learn and apply the concepts of factor analyses. Starting from the basics, participants will learn when and how to perform factor analyses, how to test for underpinning assumptions of model and make improvements to it. The course also provide case-in-point examples to facilitate understanding and learning of concepts pertaining to factor analyses.

Who is this course for?

Covering theories and practical applications, surveyors, analysts, researchers looking at learning how to unbiasedly perform sampling, or to write better surveys, or to propose and/or validate the constructs of a survey will find this course relevant and useful.

This course is designed for participants who may not have the relevant training in school or work but are keen to learn the ropes of application of sampling and factor analyses. Participants with relevant training will find this course offering refreshing insights and applying the principles of analytics in their work.

Course Content

Introduction to survey methodology and sampling

- Biased and unbiased sampling approaches and their differences
- Sample sizes and basic concepts and calculation
- Process of survey methodology: Pitfalls and best practices
- Survey design and its impact on non-response rate
- Case studies and examples

Introduction to factor analysis

- Exploratory factor analysis (Principal components analysis)
- Assumptions and interpretations
- Types of Rotational tests: Oblique and Varimax tests
- Reliability tests, its interpretation and role in factor analysis (Cronbach's alpha)
- Case studies and examples

*The course will be conducted with computer-aided data analysis software and participants will get a chance to see how analytics are being applied in real-life scenario.

Course Objectives

After attending this course, participants will be able to:

1. Differentiate between biased and unbiased sampling and explain when to use the relevant techniques,
2. Explain the process of survey methodology and apply it to their field of research,
3. Interpret the results on how to validate a survey construct using the factor analysis technique.

Participants will be given an open book quiz where they can look forward to applying principles and concepts of survey methodology in terms of sampling and factor analysis discussed during the course.

Pre-requisite

Participants are expected to be familiar with basic statistics and comfortable with quantitative discussion.

Mode of Assessment

Participants are required to sit for an open book quiz which exemplifies the fundamentals and applications of survey methodology in terms of sampling and factor analysis.

Price Schedule

$850/pax

Certificates/Awards

Certificate of Performance/Achievement will be awarded if participant satisfies the course criteria.

Profile of Trainer

Mr. Ng Jinsheng joined IBM SPSS in 2008 as an Executive in Training and Consulting after his graduation from the National University of Singapore (NUS) with a Degree in Statistics and Applied Probability. During his stay in IBM SPSS, he has trained hundreds of participants from the public service and private sector in statistical and data mining concepts, tools and applications in solving business problems. He has also led consulting projects and worked with C-level executives in addressing pressing business issues during which he received numerous praises and testimonies. During his working with IBM SPSS, Mr. Ng Jinsheng also completed his Masters of Science in Knowledge Management [M.Sc(KM)] from the Nanyang Technological University (NTU) and graduated one of the top in his cohort with a Dean's List award in academic excellence. He later joined SAS Institute as an Education Specialist in the Training department, and thereafter as a Senior Associate in professional Consulting services.

An academic paper he has co-authored was nominated for the Best Paper Award in the 20th International Conference on Computers in Education (2012). He is currently a founding member of AnaVantage Management Consultancy LLP, and lectures and trains at Tertiary Institutions in Singapore in the area of business statistics, data mining and analytics, and develops analytics courses for undergraduate programmes in Singapore. He is also an IBM Business Analytics Certified Specialist in IBM SPSS Modeler (Professional) and IBM SPSS Statistics, as well as SAS Certified Predictive Modeler using SAS Enterprise Miner and SAS Certified Business Analyst using SAS 9: Regression and Modeling.

Professionally as a Trainer, Jinsheng possessed an Advanced Certificate in Training and Assessment (ACTA) conferred by the Workforce Development Agency of Singapore (WDA) and a proud recipient of the prestigious "Excellence in Teaching" Award (EIT) conferred by the Singapore Polytechnic (SP) during the Annual Excellence in Teaching and Training Convention 2015. He is also conferred the title of an *Associate Adult Educator* by the Institute of Adult Learning (IAL) in 2016, an Adult Educators' Professionalisation recognition which awards pedagogical and professional excellence.