Uncertainty, Data & Judgment

Professor: Enrico Diecidue  
enrico.diecidue@insead.edu  
Office 506  
Ext 5360

Assistant: Siti Hajar Syed Abdullah  
sitihajar.syedabdullah@insead.edu  
Office 540  
Ext 5385

Course Objectives

Regardless of the setting, management decisions are necessarily made under conditions of uncertainty. This course introduces a framework for thinking about problems involving uncertainty and, building on this framework, develops some tools for interpreting data. While some technical analysis is essential, the course material is developed and presented from the perspective of a manager, rather than from the viewpoint of a technician. The goal is to provide an appropriate foundation in probability and statistics for subsequent courses at INSEAD and for your managerial career, to develop your ability to use data to complement and improve your judgment, and to have an awareness of the growing importance of data in business.

Prerequisites

It is desirable to be familiar with some descriptive statistics (frequency distribution, histogram, measures of central tendency, variability, and position). Participants can find supporting material in the prerequisites section of the course packet. This material is considered to be background knowledge and will not be covered in class.

Exercises and Readings

It is recommended that you read the assigned material for each session before coming to class. However, the material for this course cannot be effectively mastered by only reading and listening in class. These are necessary but not sufficient activities. The course packet also includes exercises for the four sessions. The participants are strongly recommended to attempt the exercises assigned for a session prior to that session. Even if you cannot complete some (or even most) of the exercises, you should read each exercise and give some thought to what it is you’d need to know to be able to answer the questions fully. Solutions to the exercises will be handed out at the end of the session.
Online Survey
An online survey link will be emailed to you before the classes begin allowing sufficient time to answer the questions. The survey should take you at most 15 minutes to complete. Answers are anonymous and you are not expected to do any calculations or research -- in fact, you are requested not to do any research as the goal is to get a sense of your intuitive answers. The results will be discussed in class and will contribute to your learning experience.

Group Assignments

The course packet also includes material for one group assignment based on the case “Harmon Foods, Inc.” (see material for session 4). The deadline for submission of group assignment will be communicated in class. The assignment will be graded (see grading below).

Tutor

There will be optional tutorial sessions to assist those who need more hands-on practice with exercises. The tutor will review the material discussed in class and go step-by-step over solutions to exercises. The last tutorial session will include a general review, using a past test.

Outline of Class Sessions

Session 1
Understanding and modelling uncertainty.

Session 2
Making Estimations and Decisions Based on a Sample.
Sampling accuracy. Point and interval estimates. Statistical decisions.

Session 3
Understanding Relationships from Data.
Correlation. Simple and Multiple Regression Analysis.

Session 4
Making Predictions Based on Data.
Building and interpreting regression models. Forecasting. Applications.

Final Test (timing, closed-book, no laptop)

There will be a two-hour, in class, closed-book, final test. Participants are allowed to bring cheatsheet(s). No computer is allowed, but a small calculator will be needed (any simple calculator will do, just make sure it has a square root function). Examples of past tests will be given in class. The solution of the final test will be provided together with the grading.
Course Packet

The course packet includes the following:

3. Cases mentioned in the course outline.
4. Exercises for the sessions: four problem sets, one for each session.
5. Statistical Tables.

Supporting material (practice exercises, handouts, data files) will be available online.

In addition to the course packet, the following may be useful: 

Grading

Grades will be based on the following:

- Group assignment: 20%
- Final Test: 80%

Learning Outcomes

After taking this course you should expect to be able to build and interpret models for forecasting relevant managerial variables. You will also be able to understand and manage the uncertainty around the forecast. To do so we build on a set of necessary preliminary learning steps entailing probability distributions, sampling, and test of statistical hypotheses. These preliminary steps have their own independent managerial value but you will learn to put them in context while interpreting forecasting models.
Enrico Diecidue graduated in Economics from Bocconi University, Italy, in 1996 with a specialization in Mathematical Economics. He then joined the CentER (Center for Economic Research), Tilburg University, The Netherlands, where he received his Ph.D. in 2001.

Since 2001 he has been a resident faculty member at INSEAD, except for 2008-2009 when he was a Visiting Professor at Wharton and 2010-11 when he was on sabbatical at the Erasmus School of Economics (The Netherlands). His main research interests are in individual decision making under uncertainty, health decisions, and experimental economics. He is interested in the role of regret, aspiration levels, and time in individual decisions. His current research is also addressing the role of groups in complex decisions. Enrico's research has appeared in leading journals including Decision Analysis, International Economic Review, Journal of Economic Theory, Journal of Mathematical Psychology, Journal of Risk and Uncertainty, Management Science, Mathematical Social Sciences. He is in the Editorial Board of Journal of Risk and Uncertainty and Associate Editor for Decision Analysis and for Management Science.

He regularly gives talks and consults for several organizations in the area of Decision Making Processes. Enrico has extensive experience designing and delivering impactful learning experiences for senior executives and boards to allow them to overcome decision biases, as well as steer decision making within their organizations more effectively. He teaches Uncertainty, Data & Judgment (MBA, EMBA), Management Decision Making (MBA), Risk Management (MBA), Executive modules on decision making and risk management (EDP), and Decision Sciences (Ph.D.). He is co-director of the International Director Program at INSEAD. He has won teaching awards at INSEAD and Wharton. His personal interests are in reading, sport, music, and traveling.