Prof. Inés Alegre
Assistant Professor of Managerial Decision Sciences

DECISION ANALYSIS

Introduction

Making decisions is a crucial element of a manager's job. Good decision making matters. It matters to the decision maker and his or her surroundings, to other people and to entire organizations. This course is designed to help you improve your ability to make good decisions by learning about the different elements of decisions and about how to structure and analyze decisions.

Objectives

Managers often face decisions in a cloud of ambiguity, with uncertain consequences that extend over time. Do managers deal correctly with such problems? Many only use intuition and overall some are successful but many are not. The objective of this course is to foster certain habits and give you a tool-box of methods that lead to well-structured decisions, taking into account human cognitive imperfections. This involves improving analytical skills and educating intuition.

By the end of the course students will be able to: (i) understand the structure of a decision problem; (ii) understand the concepts of sensitivity analysis and the value of information; (iii) be able to apply Monte Carlo simulation to business problems; (iv) understand people's attitudes towards risk and its implications for managers; (v) be familiar with the most frequent biases in the decision making process.

Learning Outcomes

1. Capture the key traits of a situation in a Decision Tree, specifying alternatives and consequences.
2. Evaluate how changes in the relevant variables can change the course of action.
3. Decide whether critical information is missing and, if so, evaluate how much it is reasonable to pay for it.
4. Perform investment analyses. Use NPV and IRR and detect shortcomings.
5. Distinguish risk preferences and understand how they can impact the outcome of a decision.
6. Apply probability judgments to managerial decisions.
7. Determine optimal order quantities under uncertain demand.
8. Use scenario simulation to understand the risks involved in complex business situations.
9. Evaluate decision-making habits with respect to standards of rationality and detect biases.

Competences

General Competences:
Decision Making. Critical Thinking. What-If Analysis. Judgment.

Specific Competences:
Understand and apply quantitative and qualitative analysis and tools to the decision-making process in the presence of risk and uncertainty and when outcomes occur over time. Generate consistent and unbiased judgments that take into account the risk attitudes of the decision maker.

Content

1. The Decision Making Process and the Value of Information
2. Time Value of Money
3. Production Decisions
4. Scenario Simulation
5. Risk Attitudes and Biases in the Decision Making Process
6. How to Manage Risk and Complexity

Methodology

The course is case based, complemented with lectures and exercises. Cases describe general situations from a variety of industries such as airlines, oil companies, movie industry, sports, software, and services.

Evaluation

Grading is based on contribution to in-class learning (20%), a midterm exam (30%), and a final exam (50%).

Professor's Biography

Prof. Inés Alegre
Assistant Professor of Managerial Decision Sciences

Prof. Inés Alegre holds a Ph.D. in Management by IESE Business School and a Master's degree in Industrial Engineering by the Universitat Politecnica de Catalunya (UPC). Before joining IESE, she was assistant professor at Universitat Internacional de Catalunya (UIC) and at Universitat Politècnica de Catalunya. She has collaborated at other institutions such as Universitat Pompeu Fabra (ESCI-UPF), ISM in Vilnius or the European Venture Philanthropy Association in Brussels.
She belongs to the Decision Analysis Department where she teaches courses related to quantitative methods and decision analysis. Her research and publications are focused on the area of social entrepreneurship, social businesses and crowdfunding. She has published several book chapters and research papers in addition of presenting her research at conferences such as the Academy of Management or EGOS.