Executive MBA
Fall 2020
MGMT 900 – Business Research and Statistics

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Online course link: https://zoom.us/j/7818724947

Course Overview and Objectives

One of the success factors in professional life is the ability to understand, describe, and analyze data and make decisions based on the analysis. The main objective of this course is to provide a basic understanding of important statistical concepts and tools that can be used to assist with problems arising in various business settings.

This course will help you
- Present data in a clear and meaningful way,
- Understand basic descriptive and inferential statistics,
- Learn about the statistical models of causality,
- Derive sound conclusions and make better decisions based on data and analyses,
- Identify dubious data, analyses, and conclusions, and
- Develop "Fermi" estimates

We focus on applications of statistics in many business functions such as finance, marketing, human resources, and operations. We study through small cases some of which rely on real or *real-like* data sets. Although we review mathematical concepts and tools for building theory, we rely on examples and practical exercises to strengthen our understanding of tools. We will also utilize computer based analyses, using mainly Excel spreadsheets. Each class will be a mix of lecture and discussion of mini-cases and exercises. We will utilize some basic functions of Excel. Finally, we will discuss how statistics is misused by various groups that have stake in the outcome of conclusions in social as well as in business settings. You are advised (but not required) to bring computers for in-class software practice and examples.

Course Material (distributed as a course pack):

- Class notes/slides
- "MBA Fundamentals: Statistics" by Paul W. Thurman (the main textbook)
- Online courses will be recorded and made available for subsequent viewing

Future Reading Material:

Popular Statistics Books:

Levitt, Steven D. and Stephen Dubner, "Freakonomics: A Rogue Economist Explores the Hidden Side of Everything", Harper Prennial, 2009.

Taleb, Nassim "Fooled by Randomness: The Hidden Role of Chance in the Markets and in Life" Texere, New York, NY, 2001.

Whelan, Charles, "Naked Statistics: Stripping the Dread from Data", W. W. Norton & Company, 2014.

Estimation:

Hubbard, Douglas W. "How to Measure Anything: Finding the Values of "Intangibles" in Business", Wiley, Hoboken, NJ, 2010.

Santos, Aaron. "How many Licks: Or how to estimate damn near anything?", Running Press, Philadelphia, PA, 2009.

Weinstein, L. and John A. Adam "Guesstimation: Solving the World's Problems on the Back of a Cocktail Napkin", Princeton University Press, Princeton, NJ, 2008.

Weinstein, L. "Guesstimation 2.0: Solving the World's Problems on the Back of a Napkin", Priceton University Press, Princeton, NJ, 2012.

Misuse of Statistics and Visuals:

Best, Joel "Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists" University of California Press, Berkeley, CA, 2001.

Huff, D. "How to Lie with Statistics" WW Norton, 1993 (revised edition, originally 1954).

Tufte, Edward "The Visual Display of Quantitative Information" 2nd ed. Graphic Press, Chesire, CT, 2001. [Also check out http://www.edwardtufte.com]

Grading*:

Attendance (Individual)	10%
Project (Group)	20%
Reflection paper (Individual)	20%
Exam (Individual)	50%

*In case a grade item is not completed, the percentage will be moved to the rest of the items proportionally.

Attendance: During the course, a few exercises will be given and discussed and completed as a group. The attendance grade will be based on the attendance of the course and participation of these group exercises.

Project: Each group will prepare a very short presentation (5 minutes) on dubious use of statistics (in a broader sense). I will ask each group two such examples, with one from media. The groups will also be required to post at least one of them to LinkedIn.

Exam: The exam will contain mainly problem solving and essay type questions. <u>It will be held as take-home. It will be posted on the website on Saturday October 17, at 17:00 and must be submitted via course website in 24 hours; i.e., by Sunday at 17:00.</u>

Reflection paper: Each student will write a reflection paper that describes a "data-problem" related to their professional work and how one or more methods/concepts can help them resolve that problem. The paper should not exceed 750 words and 2-pages, including the text and the illustrations, tables, etc. The papers should be submitted as pdf files.

Course Schedule: This schedule is subject to change. The actual material covered will be dictated by the progress and interest in the class.

Day 1	Date/Time:	**Wednesday, 9:00 – 16:00**
	Topics:	Fermi Estimation
		Sampling
		Descriptive Statistics
	Readings:	Chapter 1 from "MBA Fundamentals Statistics"
		Additional Material in the Course-pack
Day 2	Date/Time:	**Thursday, 9:00 – 16:00**
	Topic:	Introduction to Distributions
		Estimating Population Mean
	Reading:	Chapters 3, 4, 5, 6 from "MBA Fundamentals Statistics"
Day 3	Date/Time:	**Friday, 9:00 – 16:00**
	Topic:	Introduction to Regression
		Multiple Regression
	Readings:	Chapters 9 and 10 from "MBA Fundamentals Statistics"
Day 4	Date/Time:	**Saturday, 10:00 – 13:00**
	Topic:	Project presentation
		Further information on Exam, Reflection paper
	Readings:	Material in the Course-pack
EXAM	Date/Time:	**October 17-18, 17:00**
Reflection Paper	Date/Time:	**November 29, 17:00**