



## Data Analysis for Marketing Decisions (MKTG 712)

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| <i>Administrative Coordinator:</i>            | Karen Ressler, <a href="mailto:resslerk@wharton.upenn.edu">resslerk@wharton.upenn.edu</a>  |
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| <i>“Office Hours”:</i>                        | Contact me (any time, but please consider 6-hour time difference)  |
| <i>Recommended Literature (not required):</i> | Malhotra, N. K., Nunan, D., and Birks, D. F. (2017), Marketing Research: An Applied Approach, Pearson, 5 <sup>th</sup> edition<br><br>Field, A. and Miles, J. (2012), Discovering Statistics Using R, Sage Publications Ltd. |
| <i>Further Literature:</i>                    | There will be cases and papers distributed via Canvas  |
| <i>Software:</i>                              | Excel (raw data), R (no prior knowledge required, and Questback/Unipark  |
| <i>Course Website:</i>                        | Canvas   |

### Overview and Objectives

Firms have access to detailed data of customers and past marketing actions. Such data may include in-store and online customer transactions, customer surveys as well as prices and advertising. Using real-world applications from various industries and vivid examples, the goal of the course is to familiarize students with several types of managerial problems as well as data sources and techniques, commonly employed in making effective marketing decisions. The course involves formulating critical managerial problems, developing relevant hypotheses, analyzing data and, most importantly, drawing inferences and telling convincing narratives, with a view of yielding actionable results.

Critically, as I believe that students will develop competences when implementing several concepts, a strong emphasis will be on application of theory. In this regard, students will receive a hands-on, as opposed to theoretical introduction into R, aimed at enabling them to conduct research by themselves. Furthermore, having taken this course, students should be able to critically assess and evaluate market research services and available data, should know

the limitations of data as well as most important decision biases — ultimately enabling them to become more sound decision-makers.

## Assessment

Your final grade will be based on the following components:

- A. Individual Assignment 20%
- B. Group Assignment 40%
- C. Exam I 20%
- D. Exam II 20%

Please note that no late assignments will be accepted. All written work is due on the specified date. The due dates for the assignments are listed on the course schedule.

Students must organize themselves into groups of 5-6 people in order to do the group assignment. As part of the group assignment, I expect groups of students to jointly identify a current challenge in their prior job, solve this challenge by conducting market research, and to present their findings in class. Presentation time of each group will be 15 minutes followed by a “defense” of their research, findings, and implications of around 5 minutes.

## Tentative Schedule of Class (Zoom) Meetings

| Lecture #/Date  | Topic  |
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| Session 1/ Monday,<br>September 14; 3:00 pm –<br>5:40 | Introduction<br>Objectives and Process of Market Research<br>Requirements of Good Market Research<br>Data Collection I   |
| Session 2/ Monday,<br>September 21; 3:00 pm –<br>5:40 | Data Collection II<br>Sampling<br>Scaling<br>Questionnaire Design  |
| Session 3/ Monday,<br>September 28; 3:00 pm –<br>5:40 | Designing Online Questionnaires and Experiments<br>Descriptive Statistics<br>Introduction into R   |
| Session 4/ Monday, October<br>5; 3:00 pm – 5:40       | Hypothesis Testing<br>Inferential Statistics: Association and Correlation Analysis,<br>Chi-Square Independence Test; Comparison of Means<br>Managerial Decision-Making and Frequent Biases<br><i>Introduction into Individual Assignment<sup>1</sup></i> |
| Session 5/ Monday, October<br>12; 3:00 pm – 5:40      | Managerial Decision-Making and Frequent Biases C’td<br>Analysis of Variance  |
| Session 6/ Monday, October<br>19; 3:00 pm – 5:40      | Analysis of Variance C’td (M-way ANOVAs, Interactions,<br>Planned Contrasts)<br>Introduction into Regression Analysis<br><i>Exam I (45 minutes)</i>  |
| Session 7/ Monday, October<br>26; 3:00 pm – 5:40      | Regression Analysis C’td<br>Non-Linear Regressions   |
| Session 8/ Monday,<br>November 2; 3:00 pm – 5:40      | Advanced Regression Analysis and Real-World<br>Applications  |

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| Session 9/ Monday,<br>November 9; 3:00 pm – 5:40            | The Promises and Perils of Big Data, Digital Analytics, and AI<br>Market Research, Insights, and Ethics |
| Session 10/ Monday,<br>November 16; 3:00 pm – 5:40          | Segment of One vs. Segment of Many<br>Introduction to Cluster Analysis and Related Tools (LCA, LPA)     |
| Session 11/ Monday,<br>November 23; 3:00 pm – 5:40          | Discriminant Analysis   |
| Session 12/ Monday,<br>November 30; 3:00 pm – 5:40          | Multidimensional Scaling<br><i>Group Presentations (Part 1)</i>   |
| Session 13/ Monday,<br>December 7; 3:00 pm – 5:40           | <i>Group Presentations (Part 2)</i><br>Summary of Course / Q&A  |
| Session 14/ Thursday,<br>December 10; <b>3:00 pm – 5:40</b> | Guest Lecture or Current Topics of Interest<br><i>Exam II (75 minutes)</i>                              |

<sup>1</sup>due October 12<sup>th</sup>, 2020