Course Code
Marketing Analytics
Module 4, 2020-2021

Course Information

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Classes:
Lectures: Mon & Thu 10:30am-12:20pm
Venue: TBA

Course Website:
CMS

1. Course Description

1.1 Context

Course overview: Nowadays data are expanding faster than ever and the market demand for data analytics is increasing. This course will present a wide range of marketing analytics that help firms to understand consumers and competition and to make informed marketing decisions. Market data can come from various sources such as survey, transaction data, and online data. The course will help you understand the benefits of using a systematic and analytical approach to marketing decision-making.

The course is composed of a mixture of lectures and data exercises. The purpose of the lectures is to present and discuss theories, concepts, analytical techniques and empirical findings. We will practice various analytical techniques and apply them to real marketing problems.

RStudio (most of the time) and Tableau will be the software for this course. As our lectures will be in a typical classroom, you need to bring your laptop every class with the software installed. Instructions for how to install the software will be provided in the first class. (Note: You are not required to know how to use the software when registering the course. You are expected to understand the given code and to modify the code for new dataset in the course.)

1.2 Textbooks and Reading Materials

There is no standard textbook that covers all the topics in this course. Rather, you will rely more on our course slides, class notes and some reading materials below.

Reference Texts (Optional)

- PS2017 – Palmatier, R.W. and Sridhar, S. (2017) Marketing Strategy: Based on First Principles and Data Analytics, Palgrave Macmillan.
- MNB2017 – Malhotra, N., Nunan, D., Birks, D.F. (2017), Marketing Research: An Applied Approach, 5th edition Pearson.
- LRD2017 – Lilien, Gary L., Rangaswamy, A. and De Bruyn, A (2017), Principles of Marketing Engineering and Analytics. DecisionPro.
- Winston, W.L. (2014). Marketing Analytics. Indianapolis: John Wiley.

2. Learning Outcomes

2.1 Intended Learning Outcomes

Learning Goals	**Objectives**	**Assessment (YES with details or NO)**
1. Our graduates will be effective communicators.	1.1. Our students will produce quality business and research-oriented documents.	Report
	1.2. Students are able to professionally present their ideas and also logically explain and defend their argument.	Report
2. Our graduates will be skilled in team work and leadership.	2.1. Students will be able to lead and participate in group for projects, discussion, and presentation.	No
	2.2. Students will be able to apply leadership theories and related skills.	No
3. Our graduates will be trained in ethics.	3.1. In a case setting, students will use appropriate techniques to analyze business problems and identify the ethical aspects, provide a solution and defend it.	In-class exercises
	3.2. Our students will practice ethics in the duration of the program.	In-class exercises
4. Our graduates will have a global perspective.	4.1. Students will have an international exposure.	In-class exercises, report
5. Our graduates will be skilled in problem-solving and critical thinking.	5.1. Our students will have a good understanding of fundamental theories in their fields.	In-class exercises, report
	5.2. Our students will be prepared to face problems in various business settings and find solutions.	In-class exercises, report
	5.3. Our students will demonstrate competency in critical thinking.	In-class exercises, report

2.2 Course specific objectives

- Understand relevant concepts, theories, and models underlying common, practical marketing problems.
- Critically apply marketing analytics to solve marketing problems in a variety of marketing areas.
- Introduce typical software packages available for developing practical solutions to marketing problems.
- Equip students with marketing analytics skills for big data environments.

2.3 Assessment/Grading Details

The assessment of this course consists of two components:

In-class data exercises	40%
Individual Report (<3000 words)	60%
Total	100%

In-class Data Exercise (40%)
We have many data exercises to apply the tools learnt from the lectures. Class time will be allocated for doing the exercises but sometimes you may need to do them as homework. You will submit your answers to an online system where I can check to understand your learning progress.

Individual Report (60%)
Based on a given dataset, you will write a final report (<3000 words) to describe your research problem, analysis, results and managerial implications. Details are provided in the Appendix of this syllabus.

2.4 Academic Honesty and Plagiarism

It is important for a student's effort and credit to be recognized through class assessment. Credits earned for a student work due to efforts done by others are clearly unfair. Deliberate dishonesty is considered academic misconducts, which include plagiarism; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; or altering, forging, or misusing a University academic record; or fabricating or falsifying of data, research procedures, or data analysis.

All assessments are subject to academic misconduct check. Misconduct check may include reproducing the assessment, providing a copy to another member of faculty, and/or communicate a copy of this assignment to the PHBS Discipline Committee. A suspected plagiarized document/assignment submitted to a plagiarism checking service may be kept in its database for future reference purpose.

Where violation is suspected, penalties will be implemented. The penalties for academic misconduct may include: deduction of honour points, a mark of zero on the assessment, a fail grade for the whole course, and reference of the matter to the Peking University Registrar.

For more information of plagiarism, please refer to *PHBS Student Handbook*.

3. Topics, Teaching and Assessment Schedule

Week 1: Introduction to marketing analytics
Week 2: Basics of consumer analyses; RStudio tutorial
Week 3: Customer segmentation techniques (e.g., clustering, discriminant analysis)
Week 4: Understanding customer value (e.g., RFM method)
Week 5: Predicting customer choice (e.g., logistic regressions)
Week 6: Market basket analysis (e.g., association rules)
Week 7: Advertising effectiveness (e.g., attribution model)
Week 8: Social network and sentiment analysis
Week 9: Data visualization; Tableau tutorial

Appendix:

Data Project Details

Sky5 is a telecommunications company (anonymous) operating in the US. The company is relatively successful, but wishes to grow its business further. It has a number of ideas for further development, including the development of a new credit card built into a phone app, a new loan business, with loans assessed and delivered via a mobile phone app, and car insurance. It is also open to other ideas to extend the business. In this project, your task is to use marketing analytical tools to aid in future decisions about the company. You cannot do everything so that you must be selective about the topic, techniques and data used.

The data set Sky5.csv is posted on our course website. The data set includes a representative sample of 4865 customers (only a subset in order for all students to able to complete this assignment on their own computers). The data set (much of this is compiled from third party providers) includes information collected on the characteristics of customers, aspects of their consumer and lifestyle behaviour, financial behaviour, telecommunications product purchases, other products purchased, and details on responses to three recent marketing campaigns. There are many (>100) variables and part of the challenge will be for you to identify which variables are most useful for your analysis.

There may be many research topics that you can explore. The following are only a few examples and you are encouraged to explore other creative ideas:

- Who are our most valuable customers?
- Which customers are leaving us and why?
- To which of our customers should we consider providing loans?
- To which of our customers should we consider providing mobile credit cards?
- To which of our customers should we consider providing car insurance?
- Given our limited resources, which of the three product offers should we rollout to our complete customer base?
- (Or any other idea that you believe can help the company)

Individual Report

You will write a report (<3000 words, 1.5-spaced, Times New Roman 11-points). Your report will consist of the following:

- Executive Summary – One-page, a non-technical summary of key points of your entire report.
- Introduction – Describe your research topic and explain why it is important.
- Methodologies – Describe the data used (e.g., including which variables to use, how you preprocess the data, select certain samples) and the techniques used (e.g., why uses some methods).
- Results – Summarize your findings. You may have run many analyses, but you should report only those findings that are relevant and meaningful to your research problems. You must indicate, where appropriate, whether your findings are statistically significant. Add tables & figures if they help to illustrate your results. Note any limitations that you are not able to address in the report.
- Business implications – Based on your findings, discuss the business implications and recommendations.

You are expected to finish this report independently. Highly similar reports are not accepted. Your report will be evaluated in terms of (1) idea, method and research design; (2) quality of data analysis and interpretation of results; (3) quality of business implications; and (4) clarity and readability of the report.

Submit your report to CMS within two weeks after the course finishes.