

MAR 653

Marketing Analytics

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Scope of Course

This course will focus on developing marketing strategies and resource allocation decisions driven by quantitative analysis. Topics covered include market segmentation, market response models, customer profitability, product recommendation systems, churn predictions, media attribution models, and resource allocation. The course will draw on and extend students' understanding of issues related to integrated marketing communications, pricing, digital marketing, and quantitative analysis. The course will use a combination of cases, lectures, and a hands-on project to develop these skills.

Grading

You will be evaluated on the following components: class participation, team performance on homework assignments, and a marketing analytics team project.

Class Participation: 15%

Group Homework Assignments: 30%

Marketing Analytics Team Project: 35%

Marketing Analytics Final Exam: 20%

Attendance

Students are expected to attend at least nine of the ten synchronous sessions. More than one undocumented absence will adversely influence your participation grade. When/if a class is missed, students will be required to watch the recording.

Homework Assignments

There are two team homework assignments. Please submit your homework assignments as PowerPoint presentations with a maximum of five slides. You don't have to provide the output from the software. Submit your homework assignments (one submission per team) to the LMS one hour prior to that week's live session.

Marketing Analytics Team Project

Your project idea should address a business problem for an existing brand or product using marketing analytics. Your final project report should provide marketing strategy guidelines for the business problem you addressed using analysis of marketing data. Some project ideas are given below:

- What are customer perceptions of hybrid cars? How does a Toyota Prius compare to other hybrid cars in the market? You might use customer surveys and social media conversations to obtain a perceptual map.
- Through a conjoint experiment, evaluate how consumers trade off between prices and the various attributes and features of a vacation cruise line.
- Identify drivers of customer revenue and retention in an online grocery store such as Relay Foods. How can Relay Foods use this information to customize its product and marketing communications?
- What are the different customer segments for Harris Teeter? Do the segment sizes differ across stores? How can Harris Teeter use this information to design its product assortment?

I have provided some datasets that you can use for the project. You are also welcome to use data that you collect or source on your own from website such as Kaggle.

You can use any of the following marketing research techniques:

- Cluster analysis
- Regression analysis
- Perceptual maps
- Logistic regression
- Collaborative filtering
- Text analytics
- Ordinal logit
- Conjoint analysis

I am willing to provide any additional material that might be necessary for using the above analytics techniques.

Marketing Analytics Team

Select your team members. List the members in the Project Idea PowerPoint deck. Your team should consist of three members. **Submit your project idea and project plan as PowerPoint decks.**

Project Timeline

<i>Task</i>	<i>Due Date</i>
Project Idea and Team Composition	48 hours after week 2 live session
Project Plan and Research Design	48 hours after week 4 live session
Final Report and in-class Presentations	24 hours prior to week 10 live session

Please feel free to contact me to discuss any project ideas that you may have. The earlier you discuss the project idea and plan with me, the better the chance of evaluating the feasibility of your project idea.

Project Report

The project report should contain the following:

- Executive summary
- Research objective
- Research plan and methodology
- Data findings
- Conclusion
- Recommendations

You will present your project results during the week 10 live session. Your presentation deck will also be your project report. You can submit additional appendices with the presentation deck as part of your project report. I will, however, place more importance on the presentation deck when evaluating the report.

Project Evaluation

Your project score will be determined by the team's final report, the team's presentation in class, and a team peer evaluation.

Feel free to review past projects for some examples.

1. Revenue of a property on Airbnb using the available data?
2. How does review sentiment affect a property's potential to be rented on Airbnb?
3. What are the drivers of Airbnb property revenues in Miami and Paris?
4. How would you optimize Airbnb property revenues in Miami and Paris? Are your strategies different or the same in these cities?

Team Project Report Presentations

The project report should contain the following:

- Executive summary
- Research objective
- Research plan and methodology
- Data findings
- Conclusion
- Recommendations

You will present your project results on the last two days of the quarter. Your presentation deck will also be your project report. You can submit additional appendices with the presentation deck as part of your project report. I will, however, place more importance on the presentation deck when evaluating the report.

Project Evaluation

Your project score will be determined by the team's final report, the team's presentation in class, and a peer evaluation of project team members.

Homework I

Due: 1 hour prior to week 3 live session

Assigned Material:

Segmentation at Sticks Kebab Shop, UVA-M-0866

Segmentation at Sticks Kebab Shop Data SPREADSHEET, UVA-M-0866X.xlsx

Assignment Questions:

How do people choose a fast food restaurant to visit?

a. What is important: location, price, assortment, or cuisine?

Who do you think are Sticks' customers, and what are their motivations for visiting Sticks?

What does the survey data tell us about differences between customers and noncustomers?

What survey questions would you use to identify the customer segments?

How many customer segments can you estimate from the survey data?

a. What are the profiles of the customer segments?

b. Which customer segments should Sticks target?

Provide a recommendation for the location of the next Sticks Kebab Shop based on the segmentation analysis and the demographic profiles of the locations in the following table. (Hint: Please consider differences in the set restaurants visited for lunch/dinner by Sticks customers and noncustomers.)

Loc .	Pop.	Median Age	Median Income	Consum er Spend	Consume r Spend Per Househol d	Major Customer Profiles
A	29,321	39.1	\$92,700	\$722M	\$62,404	Blue Blood Estates, Brite Lites, Li'l City, Executive Suites, Upward Bound, Winner's Circle
B	34,183	32.5	\$31,900	\$482M	\$36,720	City Startups, Family Thrifts, Hometown Retired, New Beginnings, Sunset City Blues
C	42,913	32.5	\$55,700	\$754M	\$46,828	Brite Lites, Li'l City, Family Thrifts,

						Up-and-Comers, Upward Bound, White Picket Fences
D	57,509	34.8	\$75,500	\$1,184M	\$57,880	Brite Lites, Li'l City, Country Quires, Up-and-Comers, Upward Bound, White Picket Fences

The questions used for segmentation are available for both the customers and noncustomers. You want to see if the customers of Sticks Kebob are different than the noncustomers in their responses to these questions. Say you find four segments, but there was a higher chance of finding Sticks Kebob customers in segments 2 and 3. You would then try to see if segments 2 and 3 are different than others in terms of demographics and if segments 2 and 3 provided different responses on the segmentation questions. The segmentation questions provide the psychographic profile, and the other variables in the survey provide the demographic profile.

Homework II

Due: 1 hour prior to week 6 live session

Assigned Material:

Retail Relay (C), UVA-M-0868

Defection Detection: Measuring and Understanding the Predictive Accuracy of Customer Churn Models, Journal of Marketing Research
Chapter 4: Decision Trees - from *Introduction to Data Mining* by Tan, Steinbach, and Kumar

Assignment Questions:

1. Use the Relay train data to develop a model to predict customer retention. You may use logistic regression to predict the variable "retained." You can use any combination of the independent variables available in the data to obtain a model with the best predictive ability and usability. You are free to use different transformations and combinations of the independent variables.
2. Once you obtain the best model that you can find, predict retention in the test data. You will use the coefficients obtained from the model estimated using the train data to do this. Name this predicted value "pretain."
3. Calculate the hit rate. This can be calculated as % of matches between the value of pretain and retained in the train data.
4. Be prepared to present your results in class. The person with the best model, as judged by your peers, will win a valuable prize and of course, "bragging rights."

Other Course Policies

Policy on Academic Integrity

All work in this course must be your own effort. When group/team assignments are submitted, those assignments must be solely the work of the team members. Violations of this policy will be considered academic dishonesty and referred to the Academic Disciplinary Committee. The Whitman School of Management has adopted an academic policy emphasizing that honesty, integrity, and respect for others are fundamental expectations in our School. The Policy requires that all SOM students sign a certification that they have read, understood, and agreed to comply with the Academic Integrity Policy. All SOM students should have already completed a certification statement. All other students enrolled in this course, are also required to complete a certification statement available in the Undergraduate Office (Suite 215). (The Policy is available at <http://academicintegrity.syr.edu>) Completed statements will be kept on file in the Undergraduate Office. Plagiarism and academic dishonesty are serious offenses.

Religious Observance

SU's religious observances policy, found at http://supolicies.syr.edu/emp_ben/religious_observance.htm, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holy days according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes.

Disability-Related Accommodations

If you believe that you need accommodations for a disability, please contact the Office of Disability Services (ODS), <http://disabilityservices.syr.edu>, or call (315) 443-4498 for an appointment to discuss your needs and the process for requesting accommodations. ODS is responsible for coordinating disability-related accommodations and will issue students with documented Disabilities Accommodation Authorization Letters, as appropriate. Since accommodations may require early planning and generally are not provided retroactively, please contact ODS as soon as possible.

Syracuse University and I are committed to your success and to supporting Section 504 of the Rehabilitation Act of 1973. This means that in general no individual who is otherwise qualified shall be excluded from participation in, be denied benefits of, or be subjected to discrimination under any program or activity, solely by reason of disability.