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, group homework assignments, individual quizzes, and a final simulation to develop these skills.

Grading

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

Class Participation **:** 10%
Individual Quizzes : 30%
Group Homework Assignments : 30%
Marketing Analytics Final Simulation : 30%

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.

Materials

Venkatesan, R., Farris, P. and Wilcox, R. (2021). Marketing Analytics: Essential Tools for Data Driven Decisions, https://www.amazon.com/Marketing-Analytics-Essential-Data-Driven-Decisions/dp/0813945151

Media Attribution Simulation, for the exam. Available through Darden Business Publishing. More details on the simulation will be provided during the course.

Software

Statistical Software in this Course: Much of what we will be doing can be completed in R.

You may also use SPSS by IBM. It is, however, the most expensive and can be obtained here: https://www.ibm.com/analytics/us/en/spss/spss-students/

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 raw output and/or programming from the software. Submit the pertinent statistics, and/or graphs and/or visuals that are appropriate for your analysis. Extraneous output should not be presented. The primary focus of these assignments should be on analysis, interpretation and managerial application. Imagine your audience as a Marketing manager in this regard. Submit your homework assignments (one submission per team) to the LMS at least one hour prior to that week's live session.

Quiz

The course will have three individual quizzes that are scheduled throughout the term. We will announce the dates of the quiz during the 1st synchronous session.

Readings List

All readings are chapters from the book;

Venkatesan, R., Farris, P. and Wilcox, R. (2021). Marketing Analytics: Essential Tools for Data Driven Decisions, https://www.amazon.com/Marketing-Analytics-Essential-Data-Driven-Decisions/dp/0813945151

The numbers below represent the case or technical note number that is in the upper right hand corner of individual chapters.

Unit	Asynchronous Session	Synchronous Session
1	Introduction	
2	Chapter 2, pages 22-32	Chapter 2, pages 22-32
3	Chapter 2, pages 32-44	Chapter 2, pages 32-44
4	Chapter 4, pages 67-93	Chapter 4, pages 93-99
5	Chapter 5, pages 100-112	Chapter 5, pages 100-112

6	Chapter 9, pages 194-205	Chapter 9, pages 194-205
7	Chapter 9, pages 205-208	Chapter 9, pages 205-208
8	Chapter 3, pages 43-56	Chapter 3, pages 56-66
9	Chapter 6, pages 123-132	Chapter 6, pages 132-148
10	None	None

Homework I
Due: At least 1 hour prior to week 3 live session

Assigned Material:
Segmentation at Sticks Kebob Shop, Chapter 2, 32-44
Segmentation at Sticks Kebob 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 Kebob 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**	**Consumer Spend**	**Consumer Spend Per Household**	**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: At least 1 hour prior to week 7 live session

Assigned Material:
Retail Relay (C), Chapter 9, pages 205-208

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:

Use the Relay train data to develop a model to predict customer retention. You may use logistic regression to predict the variable "retained". For each of the regressions listed below, estimate the model coefficients in the train data and predict retention using the estimated model 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". Calculate the hit rate. This can be calculated as % of matches between the value of pretain and retained in the test data.

1. Use esent, eclickrate, avgorder, ordfreq, paperless, refill, doorstep as independent variables to estimate the model using train data. Report the model coefficients. Predict retention, and calculate hit rate in the test data.

2. Use avgorder, ordfreq, paperless, refill, doorstep as independent variables to estimate the model using train data. Report the model coefficients. Predict retention, and calculate hit rate in the test data.

3. Use esent alone as independent variables to estimate the model using train data. Report the model coefficients. Predict retention, and calculate hit rate in the test data.

4. Create a dummy variable called weekend which is 1 if favday is Friday, Saturday or Sunday, and 0 otherwise. Use esent, eclickrate, avgorder, ordfreq, paperless, refill, doorstep, and weekend as independent variables to estimate the model using train data. Report the model coefficients, and predict retention, and calculate hit rate in the test data.

   Answer the following questions based on the 4 regression outputs above.

5. Why is esent a strong predictor of retention? Do you see any issues with using esent as a predictor for retention? Recommend transformations of esent that can overcome the issues of using esent as a predictor.

6. Does the sign of the coefficients for avgorder, ordfreq, and weekend make sense? What consumer behavior explanation can you provide for the sign of these coefficients?

7. What are your recommendations to Relay Foods Management for improving their customer retention?

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.