MKT 511 Marketing Analytics

Tutorial 2 – Consumer and Customer Analytics

UNIVERSITY OF MANNHEIM
Business School

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Consumer and Customer Analytics

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- **Part A) Binary Choice: Logistic Regression**
  - Exercise 1
  - Exercise 2
- **Part B) Product Choice: Multinomial Logit Model**
  - Exercise 3
- **Part C) Markov Chain Model**
  - Exercise 4
  - Exercise 5

Part A) Logistic Regression

Exercise 1

- Sales data for season passes to an amusement park

- Reviewing different data representation types (**a & b**)
- Considering the use of ordered factor levels (**c**)
- Using the odds ratio to interpret coefficients (**d**)
- Exploring different model specifications by including more regressors or interaction effects (**e & f**)

Part A) Logistic Regression
Exercise 2

- Transaction data for customers of an e-commerce website

- Similar to Exercise 1, estimating and interpreting various logit models to predict purchase

Part B) Mulitnomial Logit Model

Exercise 3

- Heating system data for Californian houses

- Estimating multinomial logit models, exploring different model specifications and comparing them using the likelihood ratio test (**b, f, g, h, k, l & m**)
- Comparing observed shares with predicted probabilities (**c & i**)
- Calculating WTP and relating it to the underlying discount rate (**d, e, & j)**

Part C) Markov Chain Model

Exercise 4

- Lunch choice data

- Data entry in vector and matrix form (**a & b**)
- Predict future shares using the known starting and transition probabilities, all the way to a steady state (**c – e**)

$$(0.7 \quad 0.2 \quad 0.1) * \begin{pmatrix} 0.1 & 0.6 & 0.3 \\ 0.5 & 0.4 & 0.1 \\ 0.2 & 0.8 & 0 \end{pmatrix} = (0.19 \quad 0.58 \quad 0.23)$$

Part C) Markov Chain Model
Exercise 5

- Website browsing behavior

- Preliminary data descriptives and preparation (**a - g**)
- Estimating the Markov Chain to obtain transition probabilities and predict next page requests (**h – j**)

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Questions?

Please feel free to ask all of them in the Q&A Forum on ILIAS!

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