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AEB 6933 - Applied Valuation Methods

Food and Resource Economics Department
University of Florida

Fall 2019

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<u>**Instructors:**</u>

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<u>**Location and Class Hours:**</u>

Tuesday: MAT 0013 8:30 AM – 10:25 AM
Thursday: MAT 0013 9:35 AM - 10:25 AM

<u>**Course Description:**</u>

This is a class focusing on the application of valuation methods that are frequently used for the valuation of market and non-market goods and services. We will focus on the methods that estimate consumer willingness to pay (WTP) for products and services. We begin from the basic economic theory to derive the WTP measures, followed by the empirical methods that can be used to elicit consumer WTP. Three key methods will be covered. Choice experiments will cover choice experiment designs, underlying economic theory, and major econometric methods. Contingent valuation methods (CVM) will cover key methods including open ended CVM, close-ended, single-bounded referendum, and close-ended double-bounded referendum as well as corresponding econometric methods. Experimental auction discussions will cover major auction methods, BDM, 2nd price auction, random nth price auction, and the corresponding econometric method. The pros and cons of each method will also be discussed in the class.

<u>**Objectives:**</u>

By taking this class students should be able to:
1. Understand the theoretical foundation of valuation methods.
2. Understand the key difference between the valuation methods.
3. Choose the right methods and data collection process for consumer WTP estimation.
4. Employ appropriate statistical and econometric methods to analyze data.
5. Interpret the results from various valuation method and economic models.

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6. Obtain basic knowledge of the software that can be used for analyzing the data obtained from different valuation methods.

Prerequisites:

Knowledge of graduate microeconomics theory I (ECO 7115) and Ph.D. level econometrics is required. Knowledge of maximum likelihood method, econometric models for limited dependent variable such as Tobit, Logit, and Multinomial Logit model is also required.

Homework and Grading:

Homework based on class lectures and reading will be assigned across the semester. All assignments are due at the beginning of class on the due date. Each student is expected to give three in-class presentations and one final project.

The weights for different components are:

Homework	20%
Presentation 1	20%
Presentation 2	20%
Presentation 3	20%
Final Project	20%

Final grades are based on the weighted average of homework, presentations, and the final project.

Course Grade	Letter Grade	Grade Point
90 - 100	A	4.00
87 - 89	A-	3.67
84 - 86	B+	3.33
81 - 83	B	3.00
78 - 80	B-	2.67
75 - 77	C+	2.33
72 - 74	C	2.00
< 72	D	1.00

Presentation 1: Article Presentation
Each student would choose a paper from a list provided by the instructor and summarize the key finding of the paper. She/he also need to discuss the pitfalls and potential improvement of the paper as well as some future research topics related to the paper.

Presentation 2: Project Proposal Presentation
Present the research background of their project, including the motivations, the literature reviews, and the methods.

Presentation 3: Final Project Presentation
Present the results, conclusions, implications, limitation, and future research directions of the project.

Applied Valuation Methods Project:
The project can be group project with two or three members per group. The project can be 1) a complete study (or perhaps pilot) applying the valuation methods discussed in this class; 2) a comprehensive literature review of studies related to valuation methods or estimation of consumer preference of market and non-market goods using some statistical method such as Meta-analysis (https://en.wikipedia.org/wiki/Meta-analysis).

Suggested Project Structure (adapted from the Authors' guide of Food Quality and Preference, you can use other structure if you know the journals that you want to publish your paper in)

1. Title Page
   a. Report title
   b. Project group members and department
2. Abstract
   a. A brief statement of the motivations, the methods, the main results and key conclusions of the research project.
3. Report body
   a. Introduction: motivation of the research project, background, identification, and the significance of the research problem. Related literature should be discussed, but avoiding a detailed literature survey or a summary of the results.
   b. Material and methods (i.e. Data collection method; statistical and econometric models: Provide sufficient detail to allow the work to be reproduced. Methods already published should be indicated by a reference: only relevant modifications should be described.
   c. Theory/calculation: A Theory section should extend, not repeat, the background to the article already dealt with in the Introduction and lay the foundation for further work. In contrast, a Calculation section represents a practical development from a theoretical basis.
   d. Results: key tests, key tables, and figures, interpretation of the results.
   e. Discussion: This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is usually only appropriate for short communications. Avoid extensive citations and discussion of published literature.
   f. Conclusions: The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section. It should provide the take home message of the project, limitation of the project, future direction of the research.

Notes:

1. We understand that one semester may not be enough to complete a full project that requires primary data collection. If you choose option 1) you can do a pilot data

collection with a small sample size (i.e. collecting data from your classmate or friends). But you still need to analyze your data with the models discussed in this class. Hopefully, this process can help you identify the potential problems in your data collection and analysis so that you can make an improvement if you want to collect a larger sample size in the future to write a full research paper.

2. We strongly recommend bringing your own laptop to class which will be used to create questionnaires online and do data analysis in class.

3. Your laptop should have the following software installed: SAS, Stata, R, and R Studio. We may discuss the use of other software such as Nlogit and Biogeme. But they are not required now.

4. SAS or Stata student license can be purchased from UF. If you don't want to purchase the license, you can use both online at https://apps.ufl.edu/vpn/index.html.

5. R and R Studio can be obtained https://cran.cnr.berkeley.edu/ and https://www.rstudio.com/, respectively.

6. We will also discuss designing an experimental auction using zTree or oTree software which is specifically tailored for lab and online economic experiments. You can download zTree (https://www.ztree.uzh.ch/en.html) and/or oTree (https://otree.readthedocs.io/en/latest/) for free online.

7. Software for reference management: We strongly suggest you install Zotero for reference management. Zotero is a free reference management software and browser add-on for reference management. Zotero also integrates with Microsoft Word. You should use it to share the references used in your project report so that we can double check the references. Zotero can be downloaded at https://www.zotero.org/

8. The IRB, if you are going to collect data for your project, you need to get IRB approval. Before you apply for IRB, you need to finish the IRB training session at http://irb.ufl.edu/irb02/required-training-for-irb-02.html

9. Qualtrics: Qualtrics is an online platform to create questionnaires for online data collection. UF have purchased the license so you can use the Qualtrics for free as long as you have a valid UF ID. You can log in Qualtrics at https://ufl.qualtrics.com/ . If this is the first time that you use Qualtrics, you may need to activate your account.

Suggested Textbooks (not required):

Choice Experiments

1. Hensher, D.A., Rose, J.M., Greene, W.H., 2005. Applied Choice Analysis: A Primer. Cambridge University Press.

2. Kuhfeld, W.F., 2010. Marketing research methods in SAS. Experimental Design, Choice, Conjoint, and Graphical Techniques. Cary, NC, SAS-Institute TS-722. http://support.sas.com/techsup/technote/mr2010.pdf
3. Louviere, J.J., Hensher, D.A., Swait, J.D., 2000. Stated Choice Methods: Analysis and Applications. Cambridge University Press.
4. Train, K.E., 2009. Discrete choice methods with simulation. Cambridge university press. http://eml.berkeley.edu/books/choice2.html

Experimental Auctions
1. Lusk, J.L., Shogren, J.F., 2007. Experimental Auctions: Methods and Applications in Economic and Marketing Research. Cambridge University Press.
2. Moffatt, P. 2016. Experimetrics: Econometrics for Experimental Economics. Macmillan Education UK.
3. Krishna, V. 2009 Auction Theory. (In-depth theoretical treatment.)

Contingent Valuation
1. Arrow, K., Solow, R., others, 1993. Report of the NOAA panel on contingent valuation. National Oceanic and Atmospheric Administration Washington, DC.
2. Hausman, J.A., 2012. Contingent valuation: A critical assessment. Elsevier.
3. Mitchell, R.C., Carson, R.T., 2013. Using surveys to value public goods: the contingent valuation method. Routledge.

Readings:

A reading a list will be given across the semester. You are expected to read those chapters/papers with asterisks. You are also responsible for the material in handouts that will be distributed in class. Some supplemental papers and provided for each topic. Students may read unassigned chapters/papers at their discretion.

Attendance Policy:

Class attendance is expected. Students should inform instructors of expected absences. Excessive unexcused absences will result in negative consequences.

Policy on In-Class Cell Phone Use and Text Messaging:

Cell phones should be silenced and should not be answered during class. Non-emergency, in-class text messaging is not acceptable.

Academic Honesty:

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the

following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities:

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Campus Helping Resources:

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu

- U Matter We Care, www.umatter.ufl.edu/

- Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/