



EFFECT OF OYSTER ATTRIBUTES ON WILLINGNESS TO PAY FOR RAW OYSTERS

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About me

- First year M.Sc. Student
- Agricultural Economics, Mississippi State University
- Research Interest
 - Environmental Economics
 - ❖ Non-market valuation
 - ❖ Resource economics
 - Climate Change
 - ❖ Adaption strategies
 - ❖ Mitigation policies
 - Food security



Mentor

- Dr. Daniel R. Petrolia
- Associate Professor at the Department of Agricultural Economics, Mississippi State University
- Areas of Interest
 - Environmental and Natural resource economics
 - Non-market Valuation



Background

- The project seeks to investigate the effect of oyster attributes on WTP for raw oysters.
- Specifically it focusses on the effect of oyster attributes on Gulf and Non-Gulf markets for raw oysters.
- What constitute Product Attribute?
 - Price
 - Name of oyster
 - Wild
 - Salt
 - Size



- Price of oysters ranges from a minimum of \$7 to a maximum of \$18
- Salt level is categorized into
 - sweet
 - mildly salty
 - salty
 - saltiness varies
- Size is also grouped into
 - small sized
 - medium sized
 - large sized
 - sizes vary
- Wild
 - wild caught
 - cultivated
- Name

<ul style="list-style-type: none"> a.) Apalachicola Bay, Florida b.) Chesapeake Bay, Virginia c.) Hood canal, Washington d.) Galveston Bay, Texas e.) Willipa Bay Washington f.) Point aux Pins, Alabama 	<ul style="list-style-type: none"> g.) Cape Cod, Massachusetts h.) Coastal Louisiana i.) Netarts Bay, Oregon j.) Bay Saint Louis, Mississippi k.) Gulf of Mexico l.) Moonstones, Rhode Island
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Survey Data

- A survey questionnaire was administered by GfK Custom Research to panelists on their Knowledge Panel.
- The panelists were screened for respondents that consume raw oysters at least once a year.
- Respondents indicated
 - oyster variety they are most likely to buy at the stated price,
 - oyster variety they are least likely to buy at stated prices.



- Imagine you were at a restaurant that is known to serve high quality raw oysters on the half-shell in say November, and that the following selection of oysters is on the menu at the following prices.
- Suppose they sold only as a half –dozen and you could only order one variety of oysters at a time.
- Based on the menu shown below, which oyster are you **most likely to buy** and which oyster are you **least likely to buy**.

<i>Oysters on the half-shell</i>	<i>Price per half -dozen</i>	<i>Most likely to buy</i>	<i>Least likely to buy</i>
Point aux Pins, Grand Bay, Alabama Cultivated oysters, medium sized, mildly salty	\$12	✓	
Cape Cod, Massachusetts Wild oysters, small size, sweet	\$18		✓
Gulf of Mexico Wild oysters, sizes vary, saltiness varies	\$9		

<input type="checkbox"/> I am not willing to buy any of these oysters at these prices.		
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What I did

- Using Stata commands I created the following variables
- Dependent variable
 - Vote (which indicated the choice respondents made)
- Independent variables
 - Name of oysters (each name was coded as binary)
 - Price
 - Size
 - Salt
 - Wild
 - High-Information
 - Generic
- All these variables were hidden in the choice information obtain from the survey data.



The results of the variables generated for analysis were of the form as shown below:

Name	Size	Salt	Wild	vote	Price	Chesapeake	Gulf_of_Mexico	High_Info	GENERIC
4	1	1	1	1	0	18	0	0	0
11	2	2	2	1	1	10	0	0	0
13	4	4	4	1	0	16	0	0	0
4	1	1	1	1	0	14	0	0	0
11	2	2	2	1	0	16	0	0	0
7	3	1	1	2	1	14	0	0	0
8	2	2	2	1	0	18	0	0	1
13	4	4	4	1	0	12	0	0	1
7	3	1	1	2	1	7	0	1	1
13	4	4	4	1	0	18	0	0	1
4	1	2	2	2	1	12	0	0	1
1	2	1	1	2	0	16	1	0	1
13	4	4	4	1	1	18	0	0	1
1	2	1	1	2	0	9	0	1	1
13	4	4	4	1	0	16	1	0	1
7	1	2	2	2	1	9	0	1	1
11	1	2	2	2	1	10	0	0	1
13	4	4	4	1	0	14	0	1	1

Alternative – Specific conditional logit (McFadden’s choice) model

```
asclogit vote Price _actual Size Salt Wild _transform Point Lonesome Saint _Louis _ Portersville  
Chesapeake Apalachicola if GENERIC == 0, case (id) alternatives (alternative)
```

asclogit, or

Table 1: Summary statistics

Number of observations	3409
Number of cases	1357
Wald chi2 (12)	86.85
Prob > chi2	0.0000
Log likelihood	-1174.9702



Alternative –Specific conditional logit (McFadden’s choice) model

Table 2: Summary of asclogit regression results

Dependent Variable: vote	Odds ratio	Standard error
Price_actual	0.928460***	0.0117141
Size	1.114737**	0.0524711
Salt	0.795986***	0.0369965
Wild_transform	1.284179***	0.1044578
Lonesome Reef	0.802488	0.1165321
Point	0.763466**	0.1035976
Saint_Louis	0.730542**	0.1031993
Portersville	0.850465	0.1095069
Chesapeake Bay	1.180712	0.1751978
Apalachicola Bay	0.891371	0.1362688



Interpretation of results

The results indicate that

- A dollar increase in the price of raw oysters decreases the likelihood that a consumer will purchase raw oyster.
- An increase in the size of raw oysters increases the likelihood that a consumer will purchase raw oysters.
- Increasing the saltiness of raw oysters decreases the likelihood that a consumer will demand raw oysters at that level of saltiness.
- Raw oyster consumers are more likely to buy wild caught oysters over cultivated oysters.
- Raw oyster consumers are less likely to choose gulf oysters over East coast or West coast oysters.



Overall Experience

- Develop a better understanding choice experiments and it analysis.
- Improved my skills in Stata
 - Got acquainted with Stata functions
 - Had a better understanding of Stata commands
- Caution and ethics in research work
 - Research work should be approached with extreme care in order not to affect your results
 - In cases where human beings are the subjects ethical concerns should be observed.
- Learned to work as a team



Challenges

- Writing efficient Stata commands to reshape data to usable form for analysis
- Correctly interpreting results of the analysis

Value of my internship experience

- The experience I had these past two months has help me to understand the analytical aspect of my chosen area of interest.
- I hope to build on this fundamental analytical knowledge and pursue my career objectives better informed.

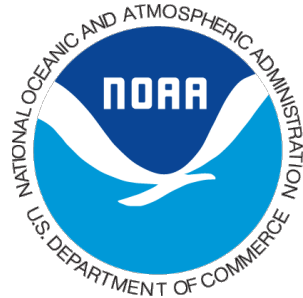


Acknowledgements

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Thank you



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