# Syndicate 5 Statistical Learning Problem Set #2

June 7, 2021

## Fishing Mode

### Ordered Logit Model

Table 1: Correlation Matrix

| | price.beach | price.pier | price.boat | price.charter | catch.beach | catch.pier | catch.boat | catch.charter |
|---|---|---|---|---|---|---|---|---|
| price.beach | 1 | 1 | 0.112 | 0.141 | 0.332 | 0.226 | -0.098 | -0.027 |
| price.pier | 1 | 1 | 0.112 | 0.141 | 0.332 | 0.226 | -0.098 | -0.027 |
| price.boat | 0.112 | 0.112 | 1 | 0.996 | 0.213 | 0.253 | -0.041 | -0.023 |
| price.charter | 0.141 | 0.141 | 0.996 | 1 | 0.245 | 0.287 | -0.063 | -0.027 |
| catch.beach | 0.332 | 0.332 | 0.213 | 0.245 | 1 | 0.818 | 0.139 | 0.208 |
| catch.pier | 0.226 | 0.226 | 0.253 | 0.287 | 0.818 | 1 | 0.134 | 0.187 |
| catch.boat | -0.098 | -0.098 | -0.041 | -0.063 | 0.139 | 0.134 | 1 | 0.936 |
| catch.charter | -0.027 | -0.027 | -0.023 | -0.027 | 0.208 | 0.187 | 0.936 | 1 |

Table 2: Ordered Logit Model

| | *Dependent variable:* |
|---|---|
| | mode |
| price.pier | 0.006*** |
| | (0.001) |
| price.boat | −0.125*** |
| | (0.014) |
| price.charter | 0.115*** |
| | (0.014) |
| catch.beach | 0.653 |
| | (0.619) |
| catch.pier | −4.061*** |
| | (0.756) |
| catch.boat | 0.907 |
| | (0.928) |
| catch.charter | 0.199 |
| | (0.266) |
| Observations | 1,182 |
| *Note:* | *p<0.1; **p<0.05; ***p<0.01 |

## Multinomial Logit Model

### Question 1

Table 3: Multinomial Logit Model

| | Boat | Charter | Pier |
|---|---|---|---|
| (Intercept) | -13.429*** | -16.149*** | -7.179** |
| price.pier | 0.032*** | 0.027*** | -0.005 |
| price.boat | -0.579*** | -0.670*** | -0.321*** |
| price.charter | 0.556*** | 0.652*** | 0.320*** |
| catch.beach | 58.579*** | 60.639*** | 37.511*** |
| catch.pier | -86.664*** | -86.885*** | -51.327*** |
| catch.boat | -0.521 | 0.368 | -1.784 |
| catch.charter | 0.306 | 0.119 | 0.100 |

Table 4: AIC for Multinomial Logit Model

| |
|---|
| 2,181.346 |

**Question 2**