

Travel Cost and Consumer Surplus Analysis of 2016 Blood, Sweat, and Gears Bike Race

Brittany Ramsey (BA '16), John Whitehead, Department of Economics

Abstract

In this study, we analyze data from a two post-event surveys of road bike events. We ask stated preference questions about return visit. Regression analysis is used to determine the effect of travel costs on whether participants will return the following year. We find that as travel costs increase participants are less likely to want to return the following year. We also find that the question format assigned was a significant determinant of return visit.

Methods

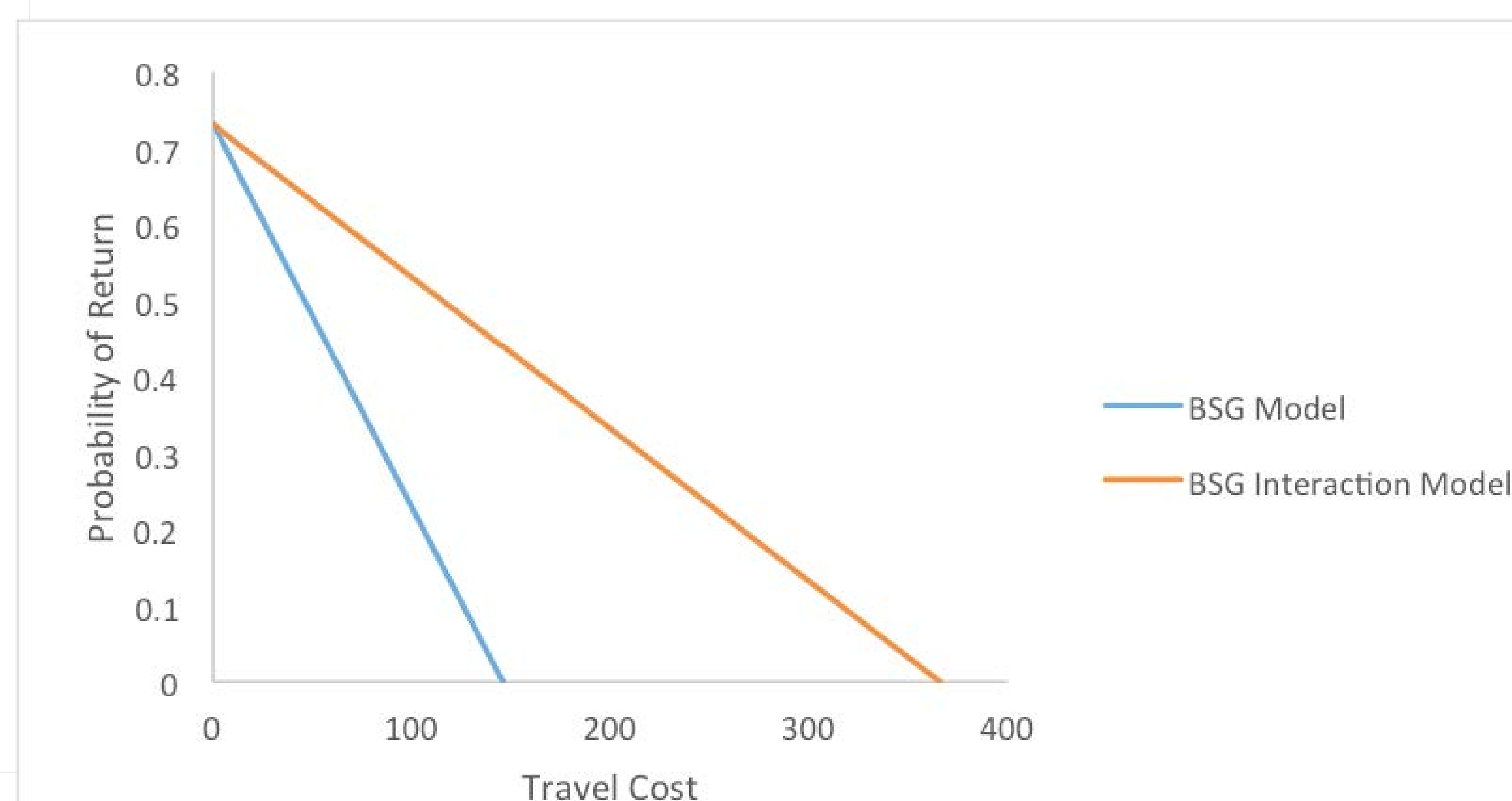
- Data was collected a post-race survey from the 2016 Blood, Sweat and Gears (BSG) and Beech Mountain Metric (BMM) road bike events.
- This survey yielded 510 observations from BSG and 122 from BMM.
- Participants were asked if they would return the following year based on hypothetical changes in distance traveled.
- Participants were randomly assigned different versions of the stated preference question in the survey: a menu of distances and one randomly assigned distance.
- It was predicted that as potential travel costs rise, the probability that participants would return the following year would fall.
- We used regression analysis to create two model types: one with an interaction variable and one without.

Descriptive Statistics

- The lower travel cost estimate was measured based off on the cost of gas per mile, which AAA measured to be 12.38 cents per gallon.
- The higher travel cost takes the cost of maintenance into account along with the cost of gas per mile, and was measured by AAA to be 48.8 cents per gallon.

	Mean	Standard Deviation
Probability of Return	0.569	0.496
Income (1000s)	137.824	69.617
LowerTC	50.269	32.463
HigherTC	82.704	45.035
LowerTC x Random	27.619	35.582
HigherTC x Random	44.715	53.636

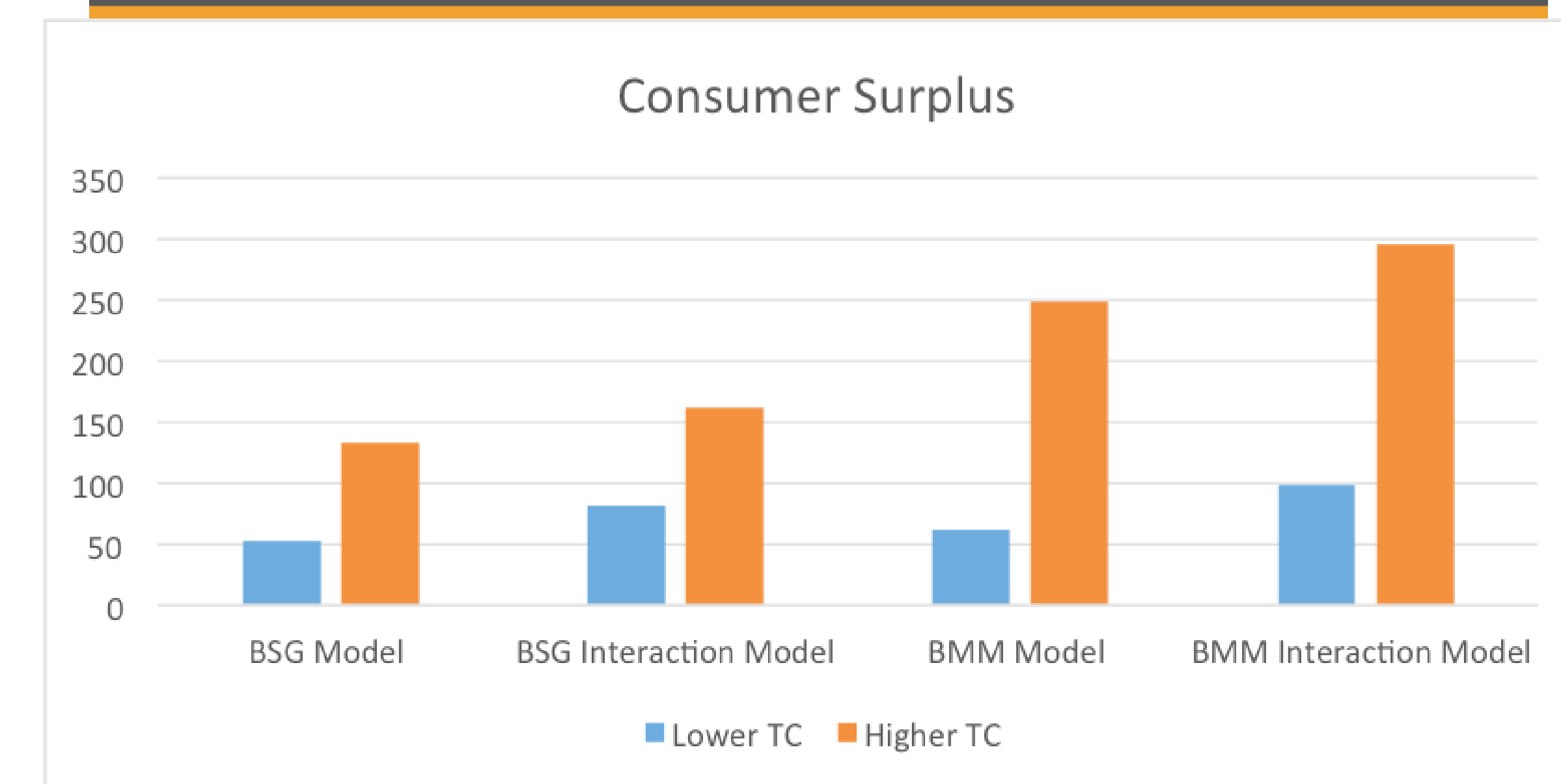
BSG Regression Models



Linear Probability Model: BSG (Dep Var: "probably would return visit" = 1)

	Coefficient	s.e.
Constant	0.732	0.039
LowerTC	-0.005	0.001
LowerTC x Random	0.003	0.001
R ²	0.079	
Cases	509	

Consumer Surplus Estimates



Results

- As the travel cost increased by \$1, there was a 0.5% fall in the probability that participants would participate in BSG 2017.
- When participants were randomly assigned a number of miles and asked if they would return the following year if they had to travel that amount had a significant impact on if participants answered "yes".
- In the BSG interaction models, the consumer surplus ranged from \$81 for the lower travel cost estimate to \$162 for the higher travel cost estimate. For BMM, it ranged from \$98 to \$295.