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Energy Problem Set 3 Written Answers

**1.2)**

Q: How many households choose to have audits?

* 3512

Q: What is the average treatment effect (electricity savings from an audit) for each group? [ie one average for those who opt in and another for those who don’t].

* Average treatment effect for those who opt in: 389.5
* Average treatment effect for those who do not opt in: 254.6

**1.3)**

Q: Is this a good estimate of the population average benefits of an audit? Why of why not?

* Yes, this is a good estimator, as our number is very close to 1.1.

**1.4)**

Q: How does this compare with your answers for 1.1 and 1.3?

* Our answer of 352.47 is greater than those of 1.1 and 1.3.

**1.5)**

Q: How does the difference between these two means compare to your answer from 1.1?

* Our answer of 301.92 is nearly the same as 1.1, meaning our sample is random.

**1.6)**

Q: How many households opt for audits now? Compare this to your answer from 1.2.

* 3,932 households opt for audits now. This is 420 more than in 1.2.

**1.7)**

Q: How does this compare to your answer from 1.1?

* Our difference is greater because more people are opting in than in 1.1.

**1.8)**

Q: What fraction of the treatment group are “compliers”?

* 12.7% of the treatment group are compliers.

Q: Calculate the realized savings for this group (ie E[ey10 – ey11 | complier = 1]). This is called a local treatment effect (LATE).

* 323.12

**1.9)**

Q: What is the intuition for this relationship?

* The intuition of this relationship is that it represents the average societal savings from the audit program.

**1.10)**

Q: If we are considering public policy to promote home energy audits, should we be trying to calculate the population average treatment effect (1.1), or the local average treatment effect (1.8)?

* We should be trying to calculate the local average treatment effect because it shows the effects of instituting a free audit program across those affected.