Arunima Roy, Andrew Nalundasan, Jianan Hsu

11/20/2020

Memo

**Background:**

The goal for this case study is to investigate how agricultural profits are determined in Ghana. Our first task was to find out how household educational attainment and certain characteristics of the local area have on agricultural profit per area unit (in square feet). We have acquired those results and wanted to take it a step further by studying which ecological zone and locality type, such as urban or rural areas, yields the best profits as well as understand if farm equipment depreciation affects profit per area unit.

To clearly state everything, we have four questions that we are trying to answer in this case study:

1. What is the effect of a household’s educational attainment on agricultural profit per area unit?
2. How do different community factors effect agricultural profit?
3. Which ecological zone and locality promotes the highest agricultural profit per area unit?
4. Does the effect of the depreciation of farm equipment have any impact on the agricultural profit per area unit?

**Results:**

The results to the questions stated in this case study and its interpretations are represented below:

1. Having some level of educational attainment within a household has a very slim affect, increasing agricultural profits by 0.02617 cedi. However, when looking at the local area for whether a primary school exists, this was statistically significant at the 1% level.
2. We looked at the following characteristics of a local area: road, primary school, and hospital. When observing across all the different scenarios, we saw that road and hospital were the most significant on at least the 5% significance level.
3. The forest ecological zone (ez2) decreases profits per unit area by 2.27% than the coastal ecological zone (ez1).

The savannah ecological zone (ez3) also decreases profits by 1.07% than the coastal ecological zone. In regards to locality, a urban area yields 1073 cedis more than the rural area, holding all other variables constant.

1. The depreciation of farm equipment increases agricultural profits per area unit by 4.42%.

**Graph:**

Chart, histogram

Description automatically generated

Figure 1: Urban (left) vs rural (right) profits per area unit

**Recommendations:**

Our recommendations to the Acme Corporation team would be the following:

1) With regards to educational attainment and profits, we would advise to target sales efforts towards a community that has a primary education facility/school.

2) Our second recommendation would be more of a criterion when locating the ideal place to target agricultural profits. We would suggest finding an area that is as close to a rural, forest-like ecological zone, along with finding a community that has a primary education school, roads, and hospitals.