

SUPERMARKETS ANALYSIS

General Instructions

You will be guided to analyze certain aspects of a reading. Your work will be evaluated for a grade. Use complete sentences in your write-up. Some passages will require thorough reading to clarify terms or methodologies. Throughout your work, indicate your knowledge of Statistics.

Include proper citations. Briefly cite our text (for example, deVeaux p127), a report/article (for example, ERR-143 Table x, pg xx), or another website (provide url).

Read the Report

Ver Ploeg, Michele, Vince Breneman, Paula Dutko, Ryan Williams, Samantha Snyder, Chris Dicken, and Phil Kaufman. Access to Affordable and Nutritious Food: Updated Estimates of Distance to Supermarkets Using 2010 Data, ERR-143, U.S. Department of Agriculture, Economic Research Service, November 2012.

* Note: p7 of the 54-page pdf document is labeled as p1 in the printed version.

* The report is available at <http://www.ers.usda.gov/publications/err-economic-research-report/err143.aspx>. The Entire Report appears long, but some pages are blank, and much is repeated. For this particular information, the website has the summary which also appears as a separate downloadable file, as well as a section of the entire report. For this particular information, the available zip files only consists of some graphs that we will not use. The website has a panel with links to other reports on the left; at this time, there is no need to explore these.

Indicate your knowledge of Statistics.

1. Indicate your knowledge of Statistics.

- (a) Describe the population in question.
- (b) Why is access to supermarkets important?

2. Consider "Table 6: Quintile and median distance to the nearest supermarket by household vehicle availability, 2010" on p21 pdf (labeled as p15 in the main document).

- (a) What is a *quintile*, in general?
- (b) Explain the first row of information in the table.
(All households: 0.32 0.64 etc.)
- (c) For which group is the fourth quintile the shortest?
- (d) For ____ % of households without vehicles, the nearest supermarket up to 0.64 miles away.
- (e) For 40% of all households without vehicles, the nearest supermarket is between 0.29 miles away and ____ (a value higher than 0.29) miles away.
- (f) For ____ % of households without vehicles, the nearest supermarket is more than 0.41 miles away. What statistic tells us this? ____
- (g) What is the difference in distances for the middle 60% of households without vehicles? ____ This is the "length of the middle 60%".
- (h) A more standard measure of spread is the IQR or _____, which measures the length of the middle ____ %. Can you calculate the IQR for households without vehicles from the Table? Explain.
- (i) Describe a pattern in the data in 1-3 sentences.

3. Consider "Table 7: Supermarket access for low-income areas compared with moderate/high-income areas, 2006 and 2010" on p22 pdf. Note that this table is broken into two portions to fit on the page. *Use the latest information to answer the remaining questions.*

- (a) We will use the information from year 20__
- (b) Let's refer to the intervals of distance as "short", "moderate", and "long".
- (c) What are the three intervals of distance considered for "all areas" and for "urban areas"? Distances are given in miles.
short ____ to ____ . moderate ____ to ____ . long ____ to ____ .
- (d) What are the three intervals of distance considered for "rural areas"? Distances are given in miles.
short ____ to ____ . moderate ____ to ____ . long ____ to ____ .
- (e) ____ % of those in urban areas have a moderate distance to a supermarket, compared to ____ % of those in rural areas.
- (f) ____ % of those in urban areas do not have a short distance to a supermarket, compared to ____ % of those in rural areas.
- (g) In the following table, record the *number of millions of people* who have a *moderate distance* to a supermarket. (Recall that 30 million would be entered as 30.0, as in Table 7.)

	low income area	moderate/high income area	row totals
urban area			
rural area			
column totals			grand total

- (h) Re-express these values as percentages of all those who have a moderate distance to a supermarket. To do this, we divide each value above by _____. (Use one decimal place, as in 76.1%.)

	low income area	moderate/high income area	row totals
urban area			
rural area			
column totals			grand total