

## Analyzing Regional Business Patterns: Convenience Stores | Answer Key

### Summary

Why are some businesses regional in scope, while others are national? What patterns do specific business types have? What shape do they have, and do they overlap? What factors influence the location of convenience stores locally, regionally, and nationally? Examine these questions and others in this lesson.

This activity uses Business Analyst Web, web-based GIS software, from Esri. This 30-question lesson is targeted toward university level learners; but could be used with upper secondary students. Estimated time for completion: 2-3 hours. Business Analyst Web requires a license to use; a trial version is available on [www.esri.com](http://www.esri.com).

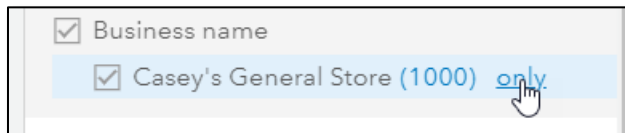
### Problem Statement

You work for a regional convenience store chain, Casey's General Stores. You are seeking to expand your market to the southwest side of your existing territory, and do not wish to intrude on the territory of your competitor to the southwest, Allsup's. How can you best understand your chain's region and plan an ideal location using GIS tools, business and demographic data, and the spatial perspective?

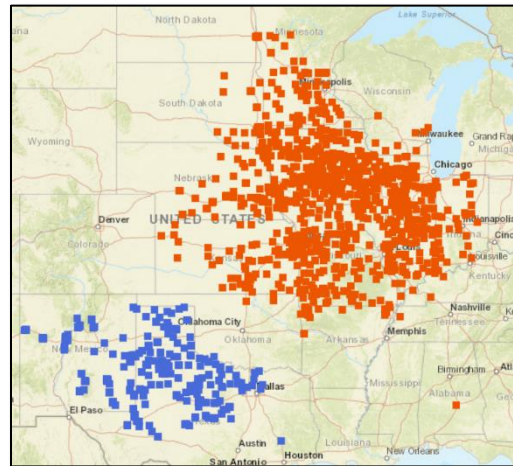
### Analysis

#### Regional Study

- (1) Access [Business Analyst Web](#). Make sure your country of selection in the upper right is USA. Start a new project and name it Regional Convenience Store Analysis. Zoom to the lower 48 US states.
- (2) Use Create Maps > Business and Facilities Search → Enter "Casey's General Store." In the results pane to the left of the map, click on Casey's General Store *only* (so you will only get the Casey's general stores and not anything else named Casey's):

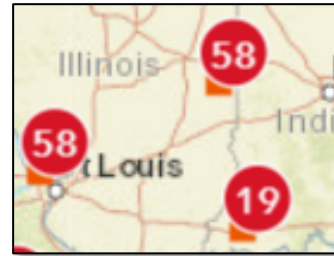


- (3) Click > Next. At #3, style search results > make the symbol a 10 point red square. > Next.
- (4) At #4, "What do you want to do next?" > Save Layer, naming it "Casey's General Stores." > Click "I'm Done."

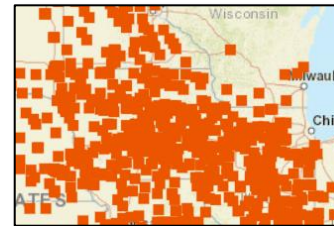


Map showing the locations of 2 regional convenience store chains that you will create as a part of this activity.

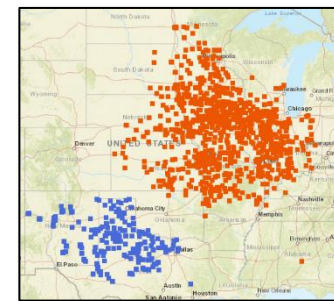
- (5) Examine your map. What states are included in Casey's territory? **MN, WI, IA, IL, IN, KY, TN, MO, AR, ND, SD, NE, KS, OK, plus AL.** Note that the points are being clustered. Each number next to the points represents the number of Casey's stores in that area. Based on the patterns on this map, and knowing that Casey's expanded outward from a central headquarters, in what city and state do you think Casey's is headquartered? **Answers may vary but valid hypotheses could be IA, MO, IL.** Do some additional research [online](#) and find out. Was your hypothesis confirmed? **Answers may vary.** Where is Casey's headquarters? **Ankeny, IA, just north of Des Moines IA.**



- (6) To the right of the map > Legend > Map Contents > uncheck "cluster points" for Casey's. Now examine the map with all of the Casey's shown. Name 3 states that you would say make up most of Casey's total sales. **IA, IL, MO is the best answer.** Name 1 major metropolitan area that seems to have more Casey's than any other (name the city and state). **Des Moines, IA.**



- (7) Zoom out to the 48 states again. Repeat steps (2)-(6) above for Allsup's, another regional convenience store chain. Under Industry Description, check "convenience stores *only*". Make the Allsup's symbols a 10-point blue square and uncluster the symbols. If you have successfully omitted everything named Allsup's (such as lawyers and lumberyards) but the Allsup's convenience stores, you will not see any Allsup's inside the Casey's territory, and vice versa (as shown).



- (8) Name 1 reason why Casey's and Allsup's do not interfere in each other's regions. **Answers may vary but could include: They have an inter-company agreement with each other, or they consider it too much competition.** Consider a national convenience store chain such as 7-Eleven or Circle K. Name 1 advantage of a chain being regional rather than national. **Answers may vary but could include such things as greater efficiency in supply chain, or more market penetration.** Name 1 advantage of a chain being national or international rather than regional. **Answers may vary but could include such things as greater efficiency in supply chain, particularly with global suppliers, or more market penetration.**
- (9) Examine a national store's website ([Circle K](#)) and note the regional offices listed under its "contact us" link. Why do you think the company has adopted a regional office approach? **Answers may vary but could include – management advantages to the regional approach.**
- (10) Based on the patterns on your map, and knowing that Allsup's expanded outward from a headquarters inside its current region, in what city and state do you think Allsup's is headquartered? **Answers may vary but logical answers could be Amarillo TX, Lubbock TX, Clovis NM.** Do some additional research online and find out. Was your hypothesis confirmed? Where is Allsup's headquarters? **Clovis NM.**
- (11) Would the headquarters city of a regional business always have the most establishments of that business? **Answers may vary.** Why or why not? **Answers may vary.** What is 1 factor that

might be even more important to determine the number of establishments for a given city? **Answers may vary but factors could include consumer preferences, population, airport presence, labor supply, supply chain advantages, or other factors.**

- (12) Based on your observations of the map, which business—Casey’s or Allsup’s—is spread over a larger geographic area? **Casey’s.**
- (13) To verify your answer about the market area for each business, to the right of the map > go to the Measure Distance and Area tool > Draw Polygon, and draw a polygon around the Casey’s area and then the Allsup’s area. Indicate the total area covered by each of the 2 businesses, indicating the units (square miles or square km) that you are using for your measurement. Comparing the two market areas, was your answer in the previous question correct? **The measure tool clearly shows that Casey’s has a larger regional area.**
- (14) Do some research online about [Casey’s](#) and [Allsup’s](#). Can you detect any difference in their corporate vision, target market, or strategy? **Answers may vary but look for evidence of some research being done by the student. Both chains place high value on serving the customer’s needs and providing fresh products and services.**
- (15) Name 2 products or services that Casey’s and Allsup’s each promote on their websites. **Answers may vary but could include sandwiches, some healthy options (to counter the perception that convenience stores are largely junk food), ice, coffee, ATMs, gas and other products for vehicles, wiring money, other products or services.**

### Studying Businesses in 2 Cities

- (16) The population of the metropolitan areas of Lincoln, Nebraska and Amarillo Texas are both around 325,000 people. Find these cities using the find tool to the upper right of the map. Does Casey’s locate in cities of this size (Lincoln)? **Yes.** Does Allsup’s locate in cities of this size (Amarillo)? **No.** Name 1 reason why a convenience store chain would choose to locate in a larger city such as Lincoln or Amarillo. **Answers may vary but could include competition, transportation, real estate cost, labor pool, etc.** Name 1 reason why a convenience store chain would avoid a larger city such as Lincoln or Amarillo. **Answers may vary but could include competition, transportation, cost of real estate, labor pool, etc.**
- (17) Pan your map to the smaller towns around Lincoln and take note of Casey’s locations. Are Casey’s located in some of these smaller towns? **Yes.** Next, pan your map to the smaller towns around Amarillo. Are Allsup’s located in some of these smaller towns? **Yes.** Zoom back out to the 48 states.
- (18) Change the basemap to “Open Street Map”, and as you pan the map, note the location of Casey’s and Allsup’s compared to major highways. How important is a highway location to a convenience store? **Yes, important.** Why? **Answers may vary but could include access, more customers, zoning, price of real estate, and so on.**

### Studying Businesses in 1 City

- (19) Change the base map to “satellite” and zoom to Clovis, New Mexico. Go to 2 of the locations where Allsup’s are located. What types of things (buildings or something else) are under each of the two roofs (circled in white) that you see at each location? **Under the north**

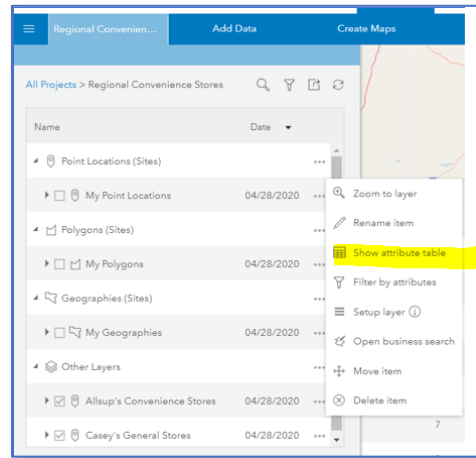


structure is the store itself, under the south structure are the gas pumps, under the awning (roof).

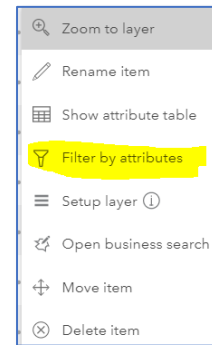
- (20) Describe the land use in 2 neighborhoods where 2 Allsup's are located. Are they primarily residential, commercial, or industrial neighborhoods? **Answers may vary but look for evidence that the satellite images were examined.**
- (21) Change the basemap back to Open Street Map. To the right of the map, add the historical traffic layer and accept the defaults. Access the map legend tool to the right of the map so that you understand the traffic counts symbols. Are the Allsup's in Clovis located on the busier streets of the town? Why or why not? **Answers may vary slightly but the Allsup's are generally on the busier streets, which makes sense as convenience stores are all about just that—convenience, and serving customers largely arriving by car.**

### Examining the Number of Stores and Sales Volume

- (22) Zoom back to the lower 48 states. Go to the project tab > examine your map layers > Casey's General Stores > Show attribute table (as shown): Scroll to the bottom of the table. How many Casey's General Stores exist? **1000**. One thing to be aware of: When you searched for the stores, you did not uncheck the box for "limit search to 1000". Hence, undoubtedly more than 1000 Casey's exist in total. Repeat the process for Allsup's. How many Allsup's exist? **Answers may vary slightly but should be over 300 (319 at the time of this writing).**



- (23) From the same list of layers > use Filter by Attributes (as shown) and filter by sales volume, sliding the filter vertical line in the graph until you only see the top 2 Casey's General Stores in the table and on the map. In the table, make sure you sort descending on sales volume. What is the sales volume? **\$3.8 million**. In which city(s) are they located? **Carthage MO and Ames IA**. Do the results surprise you? **Answers may vary. They are in middle-small towns.** Clear filter.

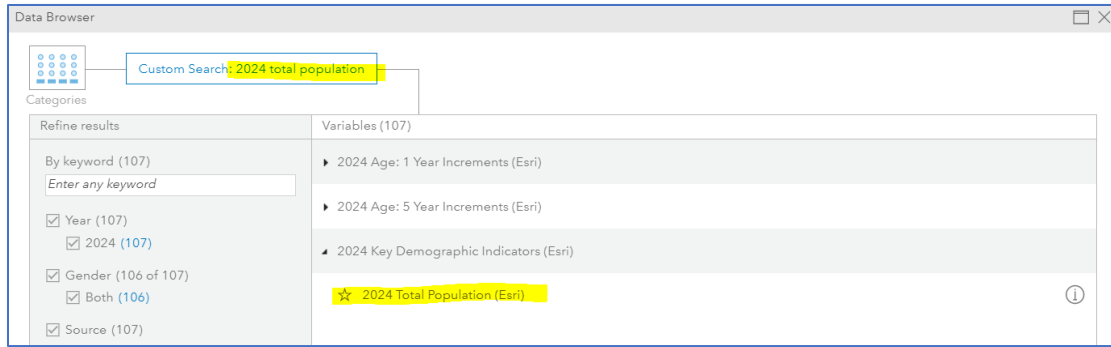


- (24) Repeat the process for the top 2 Allsup's Convenience stores (make sure they are not "Allsup Petroleum"). What is the sales volume, and how does the sales volume compare to the top Casey's? **\$4.6 million; more than Casey's**. In which city(s) are these 2 top Allsup's convenience stores located? **Rio Rancho and Bernalillo NM**. Why? **Answers may vary but they are both near a major interstate highway.** Do the results surprise you? **Answers may vary.**

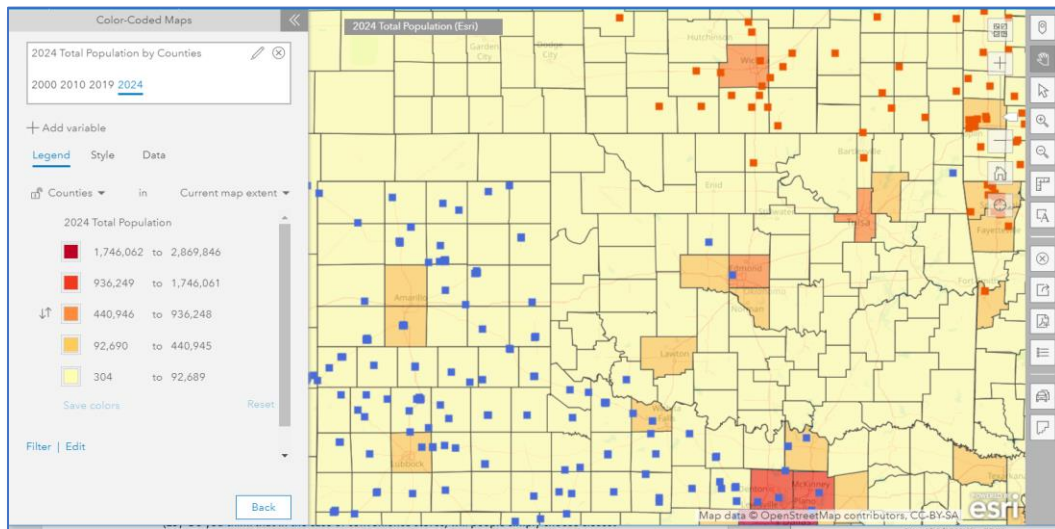
### Selecting the Ideal Location to Expand Casey's to the Southwest

- (25) What state would be the ideal state for Casey's to expand to the southwest of its traditional region without infringing on Allsup's region? **Oklahoma**.
- (26) You decide to analyze 1 additional variable to narrow your search in this state. First, zoom to this state (Oklahoma). Use Create Maps > Color Coded maps > Search on 2024 population (since you are planning for the future), and choose it from 2024 Key Demographic Indicators, as shown:





Zoom to the county scale (if your map is not already at the county scale) and examine the 2024 population by county, as shown:



Name the 2 counties in Oklahoma with the greatest population in 2024. **Oklahoma County and Tulsa County.**

- (27) Another factor that could be important are competitors in that state that your map may not be showing at the current time. Your map is only showing Casey's and Allsup's. Map one potential competitor as follows: Use Create Maps > Business and Facilities search > Search on Quik Trip (note its particular spelling, and select Quik Trip convenience stores *only*). Choose a yellow or orange symbol. Leave clustering **on**. When done, you note that there are indeed many Quik Trip stores in the city and county of Tulsa. Approximately how many Quik Trips are there in the Tulsa metropolitan area? **About 80.** Given the number of Quik Trips there, you decide not to start in Tulsa County for your Casey's expansion.
- (28) Consider behavior at the local level. Do you think that in the case of convenience stores, will people simply choose closest convenience store to their current location? **Answers may vary.** Why or why not? **Answers may vary: People may shop at the closest one because it is convenient, or they may go to one further away for a particular product, because they like the staff, because it is easier to get in and out of, or for other reasons.** This local behavior is the subject of another lesson I have authored using Business Analyst Web.
- (29) Summarize in 3 sentences what you have learned about regional business patterns, and how mapping and location analytics helped you to visualize and understand spatial patterns.

**Answers may vary but look for thoughtful reflections about the use of location analytics and mapping.**

- (30) Give a 5-minute oral presentation to your colleagues covering what you learned, using your maps as an integral part of your presentation. Using Business Analyst Web > Share Results, you can export your map(s) as PDFs or create a story map. Or you can show your results during your presentation directly from within Business Analyst Web. **Answers may vary but look for evidence of spatial and critical thinking.**

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