12 Young Entrepreneurs: Determining Business Location

By Andrew J. Milson

Guiding Question

How do demographics influence business decisions? What spatial relationships contribute to the success of businesses?

Project Duration

Three or four 45 minute class periods

Grade Level

Grades 9-12+ (ages 14-18+)

Learning Objectives

Students will be able to:
- analyze the interrelationships between human and physical geographic characteristics in the context of real-world decision-making
- analyze economic and demographic data to determine the level of development and standard of living of a location
- analyze data to understand the effects of physical and human processes on economic conditions and resource distribution
- use geographic information from databases to answer geographic questions
- use maps and graphs to make decisions and communicate information
- evaluate the importance of the location in the production of an economic good or service

Subjects
- Geography
- Economics

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> **How do demographics influence business decisions? What spatial relationships contribute to the success of businesses?**

Activity Overview

This project is a site selection analysis task in which students use geospatial data from the United States to determine the optimal location for a student-proposed business. Students perform a site selection analysis by using GIS to determine the optimal location for a new business. They review an example that uses demographic and spatial information to narrow down an optimal business site. Teams of students perform a similar analysis for their own business ideas and present the results of their analysis using PowerPoint (or another tool) to display a series of maps, graphs, and tables that they created to defend their choice of location for their proposed business.

Connections to National Standards

NATIONAL GEOGRAPHY STANDARDS

- Standard 1: How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information.
- Standard 9: The characteristics, distribution, and migration of human populations on Earth's surface.
- Standard 11: The patterns and networks of economic interdependence on Earth's surface.
- Standard 12: The process, patterns, and functions of human settlement.
- Standard 15: How physical systems affect human systems.

- Standard 16: The changes that occur in the meaning, use, distribution, and importance of resources.
- Standard 18: How to apply geography to interpret the present and plan for the future.

NATIONAL ECONOMICS STANDARDS

- Standard 1: Scarcity
- Standard 2: Marginal Cost/Benefit
- Standard 3: Allocation of Goods and Services
- Standard 4: Role of Incentives
- Standard 6: Specialization and Trade
- Standard 7: Markets - Price and Quantity Determination
- Standard 9: Role of Competition
- Standard 14: Profit and the Entrepreneur

NATIONAL SOCIAL STUDIES STANDARDS

- Strand 3: People, Places, and Environments
- Strand 7: Production, Distribution, and Consumption
- Strand 8: Science, Technology, and Society
- Strand 9: Global Connections

Vocabulary

- **entrepreneur,** *noun*—a person who organizes or owns a business
- **demographic,** *noun*—a particular sector of a population
- **standard of living,** *noun*—the necessities, comforts, and luxuries enjoyed or aspired to by an individual or group

Teaching Strategies

Note that this project does not include student answer sheets or an answer key, as students can follow the instructions and use their own paper or word processing to develop the project proposal. Instead, an "Activity Example" is included, which has a dual purpose as a example for you and also for students if you choose. You can provide this key as a sample exercise to help students envision the steps and possible results in the project proposal checklist.

It is important to emphasize that students should reserve judgment as they conduct their analyses. They should not select a city first and then try to justify it with the data. Students should focus on developing criteria first. One approach to ensuring that students follow the process of decision-making is to have them complete the first three steps of the lesson before they launch My World and begin exploring data. Encourage students to keep an open mind. Use the sample answers given in the activity key to prompt student thinking.

It is also important that students think about the limitations of the data available to them. Remind students to consider which data are most meaningful, the accuracy of the data available, the age of the data, how they might transform their data to make it more meaningful (such as calculating averages,) and identifying other data that might be valuable for making their decision.

The "Project Proposal Checklist" is intended to guide them through the process of a site selection analysis. This process will help to reinforce decision-making and critical thinking skills. It will also help students to gain a better understanding of the forms of data that are used in real-world decision making using a GIS.

Extending the Learning

- Once students identify additional data needs (such as layers that are not available in the "canned" data set,) have them use an online source to locate and download additional data for their projects.
- Have students create additional fields by performing calculations using the existing data. For example, calculate percentages, averages, area, or distances using two or more existing values.
- Teams can identify the existing competition for their business and use that information to narrow the location for their business.
- Teams can develop an advertising plan for their new business that makes use of a particular "appeal" technique.

Additional Resources

Site selection analysis is one of the most common uses for GIS in the private and public sector. For example, retail businesses frequently employ this form of analysis to evaluate their customer base and to determine where to locate a new store. An excellent explanation of different forms of spatial analysis can be found in *Geographic Information Systems and Science* by Paul A. Longley, Michael F. Goodchild, David J. Maguire, and David W. Rhind.

Data Dictionary
Additional information about each of the layers used in this project.

- U.S. Cities: Contains locations for cities with populations of 10,000 or greater and all state capitals.
- Major Highways: This data set includes only the major highway road segments of the original data set and a subset of the attributes.
- U.S. Rivers: Major rivers within the United States.
- U.S Counties: Represents all of the counties in the United States.
- U.S Lakes: Major lakes and reservoirs within the United States.
- U.S. States: Represents all 50 states plus the District of Columbia.
- Continents: Represents the boundaries for the continents of the world.

- Climate classes (Simple): illustrates the relationship between average annual temperature, average annual precipitation, climate class, dominant vegetation, and biome.
- Average Precipitation: Average precipitation (rain and snow) for each grid cell based on averages and interpolations from station measurements.
- Average Sunshine: Hours of sunshine for a location as a percentage of all daylight hours.
- Average Temperature: Average surface temperature for each grid cell based on averages and interpolations from station measurements. Monthly datasets reflect average values for that month for the years 1930-1960.

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> How do demographics influence business decisions? What spatial relationships contribute to the success of businesses?

In this activity you will use geospatial data from the United States to determine the optimal location for a proposed business. You will perform a site selection analysis by using GIS to determine the optimal location for a new business. You will begin by reviewing an example that uses demographic and spatial information to narrow down an optimal business site. You will then perform a similar analysis for your own business ideas and will present the results of your analysis using PowerPoint (or a similar tool) to display a series of maps, graphs, and tables—created to defend your choice of location for the proposed business.

New Business Challenge

A friendly and generous investor has offered to donate $10 million to a team of students at your school to start a new business. Only one new business will be funded. To determine which team will receive the money, the investor wants each team to present the results of a *site selection analysis* that describes where the business will be located, and explains why that location was selected. The investor knows that the success of a new business depends on three things: location, location, and location.

THE PROBLEM

In order to receive the money from this investor, you and your team need to carefully consider where you will locate your new business. You will use My World GIS to perform a site selection analysis that will help you to determine the best location for your business. Refer to the **Project Proposal Checklist** for detailed instructions on how to conduct these steps.

Project Proposal Checklist

You will need to utilize GIS to make entrepreneurial decisions for selecting a business site. This form will guide you through the steps and decision process, and you will follow an example business plan to practice using the GIS tools that will make that decision possible. After going through the practice you will use the steps to think through a business idea of your own. You will use the tools you have learned to decide which site has the greatest potential for your business. Lastly, you will put together a presentation to explain your reasons for selecting your business site.

1. Determine the type of business you would like to open. Your team should consider what goods and/or services you would like to sell. Most successful entrepreneurs develop a business based on something about which they are interested and knowledgeable. Think about the interests, talents, and "know-how" of the members of your team. Write a brief **description of your business.**

2. The key to success for your new business will be finding the right location. Your business can be located in any city in the United States. Keep an open mind about which city would be best for the goods and services your team will provide. In other words, don't just pick a city and then try to argue why that location is best. A GIS can help you to make this

decision, but you need to know the criteria that will guide your site selection analysis. The criteria you select should define your target customers. Who are the people who will want your goods and services? Write a **description of your ideal customer.**

3. The criteria should also define the characteristics of the city where your business is likely to succeed. What size population should the city have? What climate would be best? Does the city need to be near certain natural features such as oceans, lakes, rivers, mountains, forests, etc? Do you need to be close to an interstate highway, railroad, airport, etc.? Describe the **ideal city for your business.**

4. Now your team is ready to explore the data that are available for your analysis. Launch My World GIS; start a new project, and add the following layers:
   • U.S. Cities
   • Major Highways
   • U.S. Rivers
   • U.S. Counties
   • U.S. Lakes
   • U.S. States
   • Climate Classes
   • 30-yr Average Precipitation
   • 30-yr Average Temperature
   • 30-yr Average Sunshine
   • Continents

5. Select the **U.S. Cities** layer to activate it, and check the box next to it to make it visible. Click the **Show Table of the Active Layer** button. Scroll across the top of the table to view all of the attributes, the characteristics named in the column headings, that are included in this data set. Think about the ideal city that you described above. **Select 3-5 attributes that might be relevant for your analysis.**

6. Select the **U.S. Counties** layer to activate and check the box next to it to make it visible. Click the **Show Table of the Active Layer** button. Open the table for this layer and scroll across the top of the table to view all of the attributes that are included in this data set. Later your team will need to decide if you think the city-level data or the county-level data is more important to your business. For now, **select 3-5 attributes that might be relevant for your analysis.**

7. Notice that you have several additional layers of data available to you: Major Highways, U.S. Rivers, U.S. Lakes, Climate Classes, 30-yr Average Precipitation, 30-yr Average Temperature, and 30-yr Average Sunshine. Think about which of these features might be significant in determining the location of your business. Will your business need to be close to a major highway, river, or lake? How might precipitation, sunshine, and temperature impact your business? Review the data available in these layers and **select 3-5 additional attributes that your team believes will be relevant for your analysis. Write the additional attributes in a list.**

8. Your team should now have 9-15 attributes listed that could be relevant for your analysis. Review your description of your ideal customer and ideal city. Compare those descriptions with the nine or more attributes that you have selected. As a team, decide which attributes are most important and which are less important. **Create a rank ordered list of your attributes. Write the name of the layer where the data can be found next to each attribute.**

9. It's time to run your site selection analysis. The procedure that you follow will depend on the data that you are using and what you want to find out. Click the **Open Analysis Window** button to view some of the forms of queries and operations that you can perform with a GIS. When you do a "query," you are simply asking a question of the database.

    For example, you might want to narrow your search to cities that have a population greater than 50,000. To do this, you would perform a query that asks the GIS database to tell you all of the cities with a population greater than 50,000. Select the **Open Analysis** window and choose **Select…By Value.** You will see a series of drop down menus that will allow you to make your selections. While selecting records from **U.S. Cities** select those whose population in 2007 is greater than or equal to 50,000. Give the result the name "Pop > 50K" and click OK.

    Each of your queries should narrow your results even further. To accomplish this, you will need to perform each query by selecting from the results of the previous query.

    For example, now that you've selected all of the cities with populations greater than 50,000, you will want to perform your next query on those results. Maybe another of your criteria is that the city must be within 10 miles of a major highway. You would want to ask the GIS to tell you which cities have a population greater than 50,000 and are within 10 miles of a major highway. To perform this query, you would click **Select…By Spatial Relationship…By Distance.** In the "Select Records From" menu, you would choose your previous result, in this case "Pop > 50K," that are less than 10 miles; from Records in U.S. Interstate Highways. Name the result "Pop > 50K near highways."

10. Run each of your queries and save your results. You should be able to narrow your list of possible cities to a reasonable number (probably less than 10.) If you've performed your queries on your top 5 attributes and still do not have a reasonable number of cities, then perform queries on a few additional attributes to see if you can narrow the selection further. You might also want to adjust your criteria to make them more selective. For example, rather than cities with a population greater than 50,000 or within 10 miles of a highway, you might try cities with populations greater than 100,000 or within 5 miles of a highway. Once you have narrowed your list of cities, **save your final result as a new layer with the name "Target Cities" and write the list of cities.**

11. Your team will need to make a final selection from the list of Target Cities. This decision might be based on criteria that are not currently available in the GIS database. For example, maybe one of the cities is in a state that has low taxes for new businesses, affordable real estate, or a low crime rate. You might also want to make a decision based on factors such as where you think you would like to live and work. **Brainstorm a list of additional criteria that your team would want to search for that would help you in making your decision.**

12. Choose one city as your final choice. **Explain why your team chose this city over the other "Target Cities." Also, describe any additional information that you would want to know about this city.**

13. Your team is ready to prepare a persuasive PowerPoint presentation for the investor. Review the list of required elements under the "Deliverables" below. Create your maps as layouts; save them as jpeg images, and import them into your PowerPoint slides. Use screen captures to save your graphs and tables as jpeg images.

Deliverables

Your team will document your progress with the **Project Proposal Checklist.** As you complete each step of the process, write your responses to the questions on the checklist, and check the box next to the item when it is complete. You will submit your checklist at the end of each class period so that your project manager (teacher) can keep track of your progress.

Each team in your class will present a PowerPoint presentation to the investor that includes the following information:
- The name of your proposed business and the names of your team members.
- A brief description of what goods and/or services your business will provide to customers.
- A list of 5 criteria for selecting the location for the business.
- A map showing the "Target Cities" that were the result of your site selection analysis.
- A map of the final location that you have selected.
- Maps and graphs from My World GIS that demonstrate how the location you selected meet your criteria.
- A list of additional information that you would need in order to make a final decision about where your proposed business will be located.

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Project Proposal Checklist

You will need to utilize GIS to make entrepreneurial decisions for selecting a business site. This form will guide you through the steps and decision process, and you will follow an example business plan to practice using the GIS tools that will make that decision possible. After going through the practice you will use the steps to think through a business idea of your own. You will use the tools you have learned to decide which site has the greatest potential for your business. Lastly, you will put together a presentation to explain your reasons for selecting your business site.

1. Determine the type of business you would like to open. Your team should consider what goods and/or services you would like to sell. Most successful entrepreneurs develop a business based on something about which they are interested and knowledgeable. Think about the interests, talents, and "know-how" of the members of your team. Write a brief **description of your business.**

   Sample Answer: I would like to open an ice cream restaurant that specializes in flavors and desserts that are popular in Latin America. I think I will be successful in this business because I've worked in an ice cream restaurant before. It is also uncommon to find a restaurant in the U.S. that specializes in the tasty desserts that are found in Latin American countries. I will call my new business "Andy's Casa de Helado."

2. The key to success for your new business will be finding the right location. Your business can be located in any city in the United States. Keep an open mind about which city would be best for the goods and services your team will provide. In other words, don't just pick a city and then try to argue why that location is best. A GIS can help you to make this decision, but you need to know the criteria that will guide your site selection analysis. The criteria you select should define your target customers. Who are the people who will want your goods and services? Write a **description of your ideal customer.**

   Sample Answer: My ideal customer would be Hispanic or someone who has been to Latin America and likes the desserts there. This is a family-oriented business, so my ideal customers would be families with young children.

3. The criteria should also define the characteristics of the city where your business is likely to succeed. What size population should the city have? What climate would be best? Does the city need to be near certain natural features such as oceans, lakes, rivers, mountains, forests, etc? Do you need to be close to an interstate highway, railroad, airport, etc.? Describe the **ideal city for your business.**

Sample Answer: I will need a city with a large Hispanic population. Both my customers and my potential employees are likely to be Hispanic. The overall population of the city doesn't need to be very large. I'm also looking for a city with plenty of kids or families. The city should have plenty of sunshine, warm temperatures, and not much rain since more people buy ice cream when the weather is warm and sunny. A place with very little to no snow would be good. It might also be helpful if my business is located in a place that attracts tourists since they would also be likely to spend money on ice cream. It doesn't really matter if my business is close to a river, airport, or railroad. It would be good to be close to a highway so I can have ingredients and other materials shipped to my store easily. It doesn't really need to be close to any particular physical features, but a location close to the ocean and a beach might be good.

4. Now your team is ready to explore the data that are available for your analysis. Launch My World GIS, start a new project, and add the following layers:
   - U.S. Cities
   - Major Highways
   - U.S. Rivers
   - U.S. Counties
   - U.S. Lakes
   - U.S. States
   - Climate Classes
   - 30-yr Average Precipitation
   - 30-yr Average Temperature
   - 30-yr Average Sunshine
   - Continents

   Data from which of these layers might be helpful in your site selection analysis?

   Sample Answer: U.S. Cities, Major Highways, U.S. Rivers, U.S. Counties, U.S. Lakes, U.S. States, Climate Classes, 30-yr Average Precipitation, 30-yr Average Temperature, 30-yr Average Sunshine, Continents.

5. Select the **U.S. Cities** layer to activate it, and check the box next to it to make it visible. Click the **Show Table of the Active Layer** button. Scroll across the top of the table to view all of the attributes, the characteristics named in the column headings, that are included in this data set. Think about the ideal city that you described above. **Select 3-5 attributes that might be relevant for your analysis.**

   Sample Answer: Elevation, Hispanic, Age 5-17, Married w/ Children Households

6. Select the **U.S. Counties** layer to activate, and check the box next to it to make it visible. Click the **Show Table of the Active Layer** button. Open the table for this layer and scroll across the top of the table to view all of the attributes that are included in this data set. Later your team will need to decide if you think the city-level data or the county-level data is more important to your business. For now, **select 3-5 attributes that might be relevant for your analysis.**

   Sample Answer: Population (2000), Median Age, Families, Average Family Size

7. Notice that you have several additional layers of data available to you: Major Highways, U.S. Rivers, U.S. Lakes, Climate Classes, 30-yr Average Precipitation, 30-yr Average Temperature, and 30-yr Average Sunshine. Think about which of these features might be significant in determining the location of your business. Will your business need to be close to a major highway, river, or lake? How might precipitation, sunshine, and temperature impact your business? Review the data available in these layers ,and **select 3-5 additional attributes that your team believes will be relevant for your analysis. Write the additional attributes in a list.**

   Sample Answer: Interstate highways, Low precipitation, High Average temperature, High Average Sunshine

8. Your team should now have 9-15 attributes listed that could be relevant for your analysis. Review your description of your ideal customer and ideal city. Compare those descriptions with the 9 or more attributes that you have selected. As a team, decide which attributes are most important and which are less important. **Create a rank ordered list of your attributes. Write the name of the layer where the data can be found next to each attribute.**

   Sample Answer:
   1. Hispanic population (U.S. Cities)
   2. High Average Annual Temperature (Average Temperature)
   3. Married w/Children Households (U.S. Cities)
   4. Interstate Highways (U.S Highways)
   5. Population 2000 (U.S. Counties)
   6. Average Sunshine (Average Sunshine)
   7. Families (U.S. Counties)
   8. Average Family Size (U.S Counties)
   9. Low Precipitation (Average Precipitation)
   10. Median Age
   11. Age 5-17 (U.S. Cities)
   12. Elevation (U.S. Cities)

9. It's time to run your site selection analysis. The procedure that you follow will depend on the data that you are using and what you want to find out. Click the **Open Analysis Window** button to view some of the forms of queries and operations that you can perform with a GIS. When you do a "query," you are simply asking a question of the database.

   For example, you might want to narrow your search to cities that have a population greater than 50,000. To do this, you would perform a query that asks the GIS database to tell you all of the cities with a population greater than 50,000. Select the **Open Analysis** window and choose **Select…By Value.** You will see a series of drop down menus that will allow you to make your selections. While selecting records from **U.S. Cities** select those whose population in 2007 is greater than or equal to 50,000. Give the result the name "Pop > 50K" and click OK.

Each of your queries should narrow your results even further. To accomplish this, you will need to perform each query by selecting from the results of the previous query.

For example, now that you've selected all of the cities with populations greater than 50,000, you will want to perform your next query on those results. Maybe another of your criteria is that the city must be within 10 miles of a major highway. You would want to ask the GIS to tell you which cities have a population greater than 50,000 and are within 10 miles of a major highway. To perform this query, you would click **Select…By Spatial Relationship…By Distance.** In the "Select Records From" menu, you would choose your previous result, in this case "Pop > 50K", that are less than 10 miles; from Records in U.S. Interstate Highways. Name the result "Pop > 50K near highways."

10. Run each of your queries and save your results. You should be able to narrow your list of possible cities to a reasonable number (probably less than 10). If you've performed your queries on your top 5 attributes and still do not have a reasonable number of cities, then perform queries on a few additional attributes to see if you can narrow the selection further. You might also want to adjust your criteria to make them more selective. For example, rather than cities with a population greater than 50,000 or within 10 miles of a highway, you might try cities with populations greater than 100,000 or within 5 miles of a highway. Once you have narrowed your list of cities, **save your final result as a new layer with the name "Target Cities" and write the list of cities.**

Sample Answer: Below is the sequence of queries used for the "Andy's Casa de Helado" site selection analysis. (Note: Encourage students to save some of their queries and results as screen captures to use in their PowerPoint presentations.)

1. My first criterion is a high Hispanic population. The data in the U.S. Cities table provide me with numbers of Hispanics in each city but not with the percentage of the population that is Hispanic. Since I want a population with a high percentage of Hispanics, I will calculate this percentage

Add Field(s) to layer…
    By Math operation

Add to field table of: U.S. Cities
    By computing a Quotient (division)
    Hispanic (humans)/Population (2000) (humans)
        Compute for: All Records
            Result Name: Percentage Hispanic

After completing your query select the U.S. cities layers and display the following:
Shape: Circle
Size: percentage Hispanics
Color: red bar
Category list: Name
Highlight mode: Hide unselected

2. I want to narrow my selection of cities to those with a High Hispanic Population. I will select greater than 60% as my definition of "High." Think about these cut-off numbers for your own analysis. The cut-off point should maximize the value of your search criteria by removing less favorable cities from your list but not narrow things so much that you have too few cities to work with; and therefore give you too few options. One approach is to view the data table and sort the records from high to low or from low to high. This will give you a sense for the distribution of the data and can help inform a choice about a good number to use when selecting the records to keep and the records to exclude.

Select… By Values
    Select Record from: U.S. Cities
    Whose: Percentage of Hispanics\
        Is greater than or equal to: 0.60

Result Name: Hispanic Pop > 60%

After completing your query select the U.S. Cities layers and display the following:
Size: percentage Hispanics
Color: red bar
Category list: Name
Highlight mode: Hide unselected and Hispanic pop > 60%

3. My next criterion is a high average annual temperature.

(Note: If students use this layer, they will need to notice that the temperature values are in degrees Celsius, not Fahrenheit. If you wish for them to gain more practice with calculations, the students can go through the process of converting all of the values to Fahrenheit. If the calculation process is not as important, then direct the students to consult an online Celsius to Fahrenheit conversion table or calculator).

I have decided that my target average annual temperature should be greater than 20° C (about 68° F).

Select… By Values
    Select Record from: 30-yr Average Surface Temperature
    Whose: Average Annual Temperature
        Is greater than or equal to: 20 Celsius

Result Name: Average Temperature > 20 Celsius

And on the 30-yr Average Surface Temperature layer Highlight mode: Hide unselected and Average Temperature > 20 Celsius

4. Since I am only interested in locations that are in the United States, I will select only those records from my previous result that are at least partly contained by records in the U.S. Counties layer.

    Select… Spatial Relationship, By Containment
        Select Record from: Average Temperature > 20 Celsius
        Which: At Least Partly Contain
            Records In: U.S. Counties

    Result Name: U. S. Counties with Average Temperature > 20 Celsius

    And on the 30-yr Average Surface Temperature layer:
    Highlight mode: Hide unselected and U. S. Counties with Average Temperature > 20 Celsius.

    20° C and that are within the United States
    Select… By Spatial Relationship, By Containment
        Select Record from: Hispanic Pop > 60%
        Which: At Least Partly Contain
        Records In: U.S. Counties with Average Temperature > 20 Celsius
            Result Name: High Hispanic Pop and High Average Temperature

    Select U.S. Cities to activate the layer and click the Show Table of Selection button. These are the potential cities we have identified so far from thousands of options. This is a good time to convert this result to make a new layer from our table. Click the Convert to Layer… option in the table and it will bring you to the Analyze menu option that allows us to Convert Selection to Layer.

5. My third criterion is "Married with Children Households." The data will be more meaningful if I calculate the percentage of total households in the city that are "Married with Children Households." To do this, I will follow the same procedure as I did in Step 1 except that I will perform the query on my Target Cities layer instead of the entire U.S. Cities layer.

    Add Field(s) to layer…
        By Math operation

    Add to field table of: Target Cities
        By computing a Quotient (division)
        Married with Children Households/Population (2000) (humans)
            Compute for: All Records
            Result Name: Percentage Married with Children

6.   When I sort the table of my results, I find that the percentage of households that are "Married with Children" in each of these cities ranges from approximately 16% to 44%. I need to decide where my "cut-off" point should be. This would be another opportunity to encourage students to think through various strategies for making this decision. I am going to simply cut my pool in half roughly (above the median) and select the top 15 cities.

Select… By Values
    Select Record from: Target Cities
    Whose: Percentage Married with Children
        Is greater than or equal to: 0.34

Result Name: Percentage Married with Children > 0.34

7.   My fourth criterion is proximity to an Interstate Highway. We will select by distance those cities within 5 miles of Interstate Highways.

Select… By Spatial Relationship, By Distance
    Select Record from: Percentage Married with Children > 0.34
    That: Are less than: 5 mi(Mile)
    From Records In: Interstate Highways

Result Name: Cities with families near highways.

From here we will look at our table and see that we still have 8 cities. We will choose only those that have more than 25,000 people.

Select… By Values
    Select Record from: Cities with families near highways.
    Whose: Population
        Is greater than or equal to: 25,000

Result Name: Final Target Cities

8.   My Final Target Cities are Laredo, Texas; The Hammocks, Florida; Kendall West, Florida; and Richmond West, Florida.

11. Your team will need to make a final selection from the list of Target Cities. This decision might be based on criteria that are not currently available in the GIS database. For example, maybe one of the cities is in a state that has low taxes for new businesses, affordable real estate, or a low crime rate. You might also want to make a decision based on factors such as where you think you would like to live and work. **Brainstorm a list of additional criteria that your team would want to search for that would help you in making your decision.**

Sample Answer: I might also want to look at which of these cities:

- attracts more tourists
- has available and affordable commercial and residential real estate
- doesn't already have ice cream stores
- has a low crime rate
- has the higher percentage of Hispanics and families
- would be a nice place to live
- has good schools
- provides better support for new business owners in terms of tax incentives, restaurant owners' associations, and reasonable commercial real estate regulations.

12. Choose one city as your final choice. **Explain why your team chose this city over the other "Target Cities." Also, describe any additional information that you would want to know about this city.**

Sample Answer: I chose Laredo, Texas because between the final four cities Laredo has a larger population with a larger percentage of Hispanics and Married with Children Households. Laredo is located on the Rio Grande River and Interstate 35. Laredo is also where many people cross the border between the U.S. and Mexico. It's location on I-35 and the border provides a great location for receiving goods from both the U.S. and Mexico.

I still need to know more about the real estate market, crime rate, taxes, competition from other ice cream shops and restaurants, and the specific locations in the city that would be suitable for my business.

13. Your team is ready to prepare a persuasive PowerPoint presentation for the investor. Review the list of required elements under the "Deliverables" below. Create your maps as layouts, save them as jpeg images, and import them to your PowerPoint slides. Use screen captures to save your graphs and tables as jpeg images.