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Exploring the Spatial Patterns of U.S. Religious Adherence

Before you begin using this module, you will need to know about using a Web-based GIS viewer. You can do this by watching the tutorial video or working through the tutorial. The tutorial video, student activity, and Web-based GIS Tutorial Viewer can be found at http://gis.lanecc.edu → "Modules" tab → "Tutorial" link. The activity works best with a high speed Internet connection.

Prior Skills: For this activity, you will need to know how to turn on and off layers, make layers active and visible, use the zoom tool, toggle between the legend menu and the layers menu, and use the ID tool.

Keep in Mind:
A. County layers cover each other. To see a religion layer listed below another layer, you have to uncheck the upper layers and refresh the map.
B. This map shows counties but not county lines. The lines make it difficult to see the color values especially in the small counties. With a layer *Active***,** you can choose the "I" button and click on any county to get a pop-up window with county information.
C. This is a hug file and will take a few minutes to redraw each time you select a Layer. Slow and patient clicking will make the entire experience more enjoyable.

The data used in this activity are from the 2000 Census and ARDA (Association of Religious Data Archives). The maps show detailed information about adherents to various monotheistic religions in the United States. These data has been simplified from 149 different religions and denominations to show some which have higher number of adherents. Adherents is defined broadly to include all full church members and their children, and those who regularly attending services but may not be fully participating members in a congregation. The total adherents' data is **normalized** to show the number of adherents per 1000 people. Using normalized data allows you to compare counties with large populations and counties with small populations. The data for each religious denomination was normalized as a percent of county population that adheres to a specific religion or denomination.

Objective: For this activity you will explore spatial patterns of religious adherence, look for correlations and identify core and periphery elements of formal culture regions.

The three monotheistic religions- Judaism, Islam, and Christianity are represented on this data viewer. Christianity has been show using various denominations.

Access the Web-based GIS viewer by going to either of the links below.
http://arcgis.lanecc.edu/website/usreligion

1. Describe the spatial pattern of religious adherence in the United States? Where is religious adherence most prevalent and least prevalent? Is it concentrated, spread out, continuous, or discontinuous?
Is it in the middle, north, west, east, or south of the country? These aspects of the location pattern describe the **spatial distribution**.

• Turn on the city layer. This layer shows cities with a population larger than 250,000.

Looking for Correlations
A correlation is the relationship between two variables. Correlations can be **positive** or **negative**. For example, there is a positive correlation between crime and a cities population. In general, the larger the population, the higher the crime rate. There is a negative correlation between education and obesity– the higher the education the fewer incidents of obesity. In general, the more education people have the less obese they are. However, it is important to remember that a correlation does not necessarily indicate cause; it is a co-occurrence. Lack of education does not cause obesity, these two variable co-occur.

2. Is there a positive or negative correlation between religious adherence and large cities?

3. Select one religion at a time – make it **Active** and **Visible** and **Refresh** the map. Look at the map for each of the religions and determine which religion or denomination has the highest adherence in the U.S. *Remember, if two or more layers of county data are checked; only the top layer can be seen. *It will be important to look at the legends to make comparisons. The percentage ranges change for each religion.

4. Make "Jewish" adherence **Active** and **Visible** and **Refresh** the map. Describe the spatial distribution of adherence to Judaism. Where is it practiced in the U.S.? Is there a relation ship between religious adherence and the location of large cities?

Describe several formal religious regions of the United States. Formal regions are based on similar cultural traits such as language and religion. These formal regions have a core –area were the trait is highly represented – and a **periphery –** area where the trait can be found but is less defined. A formal religious region would have a core with high percentage of adherents surrounded by a peripheral area which has fewer adherents.

5. Make "Baptist" adherence **Active** and **Visible** and **Refresh** the map. Describe the spatial distribution of adherence to the Baptist religion. Where is it practiced in the U.S.?

Use the ID tool 🛈   and click on a county which could represent the core of the Baptist region.
Record (below) the name of the core county and the state. Now click on a periphery county, one which still has the trait, but is in the lowest range, and record the county name and state.
Core county _____, State _____
Periphery county _____, State _____

6. Make "Catholic" adherence **Active** and **Visible** and **Refresh** the map. Describe the spatial distribution of adherence to the Catholic religion. Where is it practiced in the U.S.?

Use the **Id** tool 🛈 and click on a county which could represent the core of the Catholic region of the US.
Record (below) the name of the core county and the state. Now click on a periphery county, one which still has the trait, but is in the lowest range, and record the county name and state.
Core county _____, State _____
Periphery county _____, State _____

7. Choose another religion and make it *Active* and *Visible* and *Refresh*. Describe the spatial distribution of adherence to this religion. Where is it practiced in the U.S?

Use the **Id** tool 🛈 and click on a county which could represent the core of this region of the US.

Record (below) the name of the core county and the state. Now click on a periphery county, one which still has the trait, but is in the lowest range, and record the county name and state.

Religion used is_____

Core county _____, State _____

Periphery county _____, State _____

• **Close** the viewer

Religious Adherence and Geodemographics

"We can expect age to have a positive effect on adherence with older members of society being more religious and therefore more likely to belong to a church. This may either be due to people becoming more religious as they are (Argyle, 1959: Argyle and Beit-Hallahmi, 1075), what Stark and Finke (200,p.100) term the "principle of religious procrastination," or a generational effect with older cohorts maintaining higher levels of religiosity throughout life… Either way, the same effect should occure whereby counties with higher median ages will have higher rates of religious adherence" (Smith, 2006, p 15).

Some researchers support the idea that religious adherence increases with age[1]. You are going to test this theory using your core/periphery counties. You will find out what percent of the population is over 65 in each of your study counties and compare that to religious adherence.

•   **Open** the U.S. Census Bureau Stat and County Quick Facts:
 http://quickfacts.census.gov/qfd/index.html

These are U.S. Census data based on the 2000 census.

8. Click on the state you recorded for the Baptist core, and then select the county from the drop-down menu. Record the percent of the Persons 65 years and older. Now locate the state and county for the Baptist periphery and recorded the percent of the Persons 65 years and older.

Baptist over 65 - Core _____ Periphery _____

9. Click on the state you recorded for the Catholic core, and then select the county from the drop-down menu. Record the percent of the Persons 65 years and older. Now locate the state and county for the Catholic periphery and recorded the percent of the Persons 65 years and older.

Catholic over 65 - Core _____ Periphery _____

10. Click on the state you recorded for the other religion core, and then select the county from the drop-down menu. Record the percent of the Persons 65 years older over. Now locate the state and county for the periphery and recorded the percent of the Persons 65 years older.

Other over 65 - Core _____ Periphery _____

11. Discuss how your research supports or does not support the idea that age increases adherence?

12. How can a spatial study of age and religious adherence be used to make decisions for: advertisement and marketing, public health and social services, politics?

References:
    1. Smith, B. 2006. *The Importance of Economic Surroundings on Religious Adherence.* Masters Thesis Baylor University.
    2. Argyle M. 1959. *Religious behavior.* Illinois: Free Press

3. Argyle, M,. and B. Beit-Hallahmi, 1975. *The social psychology of religion.* London: Routledge and Kegan Paul.