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Understanding Non-profit Organizations in States with Appalachian Counties: Where they Locate and the Missions they Serve

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Understanding Non-profit Organizations in States with Appalachian Counties.

Where they Locate and the Missions they Serve.

Rebecca E. Tucker

Advisors: Dr. Virginia Wilson and Dr. Phillip Berger

Introduction

Non-profits serve various roles in our society and deliver many vital services. However, information regarding where non-profits are located and what services they provide is difficult to observe (Salamon, 2003). It is of particular interest to identify non-profits in areas that have experienced persistent socioeconomic depression, as these organizations may help address this type of poverty. The Appalachian Region, running from northern Mississippi to southern New York is home to many of these areas.

There are many ways to engage public problems. Non-profits, private organizations and governmental entities all have the potential to provide solutions or ameliorate consequences of poverty. Understanding this interrelationship may encourage collaboration and foster effective public policy. A starting point is to create tools that allow researchers to visualize where the non-profit organizations are, and what missions are being pursued.

This project attempts to identify where non-profits are located and what missions they serve in the states with Appalachian counties. The concluding objective is to interpret the relationship between the number of non-profit organizations in a county with varying social and locality based factors.

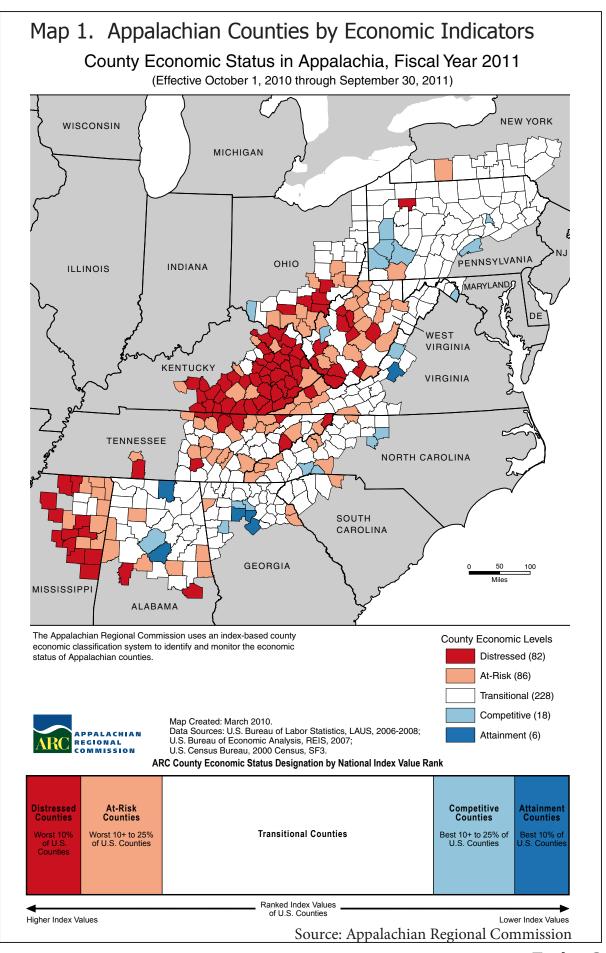
Background: Appalachia and 501(c)3 Non-Profits

The Appalachian Region came into the national spotlight during President Johnson's War on Poverty (ARC, 2011). At this time, more than half of the 420 Appalachian counties experienced poverty levels 1.5 times the national average. During the 1960s, there was legislation to initiate numerous programs and services such as Head Start, VISTA, Job Corps, and the Appalachian Regional Development Act (ARC, 2011). One primary result of this Act, as related to the current project, was to establish the Appalachian Regional Commission (ARC). The ARC developed the geopolitical boundaries that identify the 420 Appalachian counties, and has directed federal funding to the region ever since.

Appalachia is defined by the ARC as a heterogeneous area crossing 13 states from Mississippi to New York. Since recognized as an area of need, there have been significant improvements in the socioeconomic status of many counties, though areas of distress persist (see Map 1).

The mission-serving non-profits that fall under section 501(c)3¹ of the IRS (Internal Revenue Service) tax code may provide relief to such regions. These organizations serve a defined purpose and are exempt from taxes due to the public nature of the services they provide. Only the 501(c)3 non-profits will be observed in this research. As with all non-profits, they do not distribute surplus funds to owners or shareholders but instead direct them towards furthering the organization's mission.

The exempt purposes set forth in section 501(c)(3) of the IRS code are charitable, religious, educational, scientific, literary, testing for public safety, fostering national or international amateur sports competition, and preventing cruelty to children or animals. The term charitable is used in its generally accepted legal sense and includes relief of the poor, the distressed, or the underprivileged; advancement of religion; advancement of education or science; erecting or maintaining public buildings, monuments, or works; lessening the burdens of government; lessening neighborhood tensions; eliminating prejudice and discrimination; defending human and civil rights secured by law; and combating community deterioration and juvenile delinquency. (IRS)



To describe the distribution of these Appalachian non-profits and what missions they serve, publicly available data from the Form 990 was utilized. Per section 6104 of the IRS tax code, tax-exempt organization records must be publicly disclosed. The amount of information required for IRS purposes varies depending on the size of the non-profit.

There are certain organizations that are not required to file at all, such as organizations with particular religious or political purposes. Non-profits with gross receipts less than \$25,000 provide only limited information: a legal name, an address, a website address (if applicable), and confirmation that the gross receipts are under the limit. Non-profits above the \$25,000 limit must give much more detail. This includes the legal name, address, primary purpose(s), number of volunteers, and detail of revenues and assets. Approximately half of the organizations observed provided limited monetary details, and 39 percent did not detail an organizational purpose. This lack of information will likely improve in coming years due to changes in the IRS tax filing system, as all non-profits are now required to record their tax-exempt purpose. (IRS)

While the non-profits in the Appalachian counties are the primary focus of this project, to place them in context, it is useful to assess comparable organizations in the broader region. Therefore, all 510(c)3 non-profit organizations in the thirteen states with Appalachian counties were included in this research. Those counties outside of the Appalachian boundaries will be referred to as non-Appalachian. The states observed are Alabama, Mississippi, Georgia, South Carolina, North Carolina, Virginia, Tennessee, Kentucky, West Virginia, Maryland, Ohio, Pennsylvania, and New York. There are 420 Appalachian counties, the remaining non-Appalachian counties and independent cities total at 681. However, 15 independent cities in Virginia could not be matched to their organizations. The actual number of non-Appalachian counties and independent cities that are in this data set is 666.

Research Design

The majority of data utilized in this project is publicly available. All non-profit organizations are now required to file either the Form 990-ez or the Form 990 with the IRS. These records are publicly disclosed and available on the IRS website. All files utilized were last updated by the IRS on January 7, 2011. Population estimates by county were gathered from the Census using the 3-year averages of the American Community Survey. The county median income and poverty percentages were obtained from the 5-year averages of the same source.

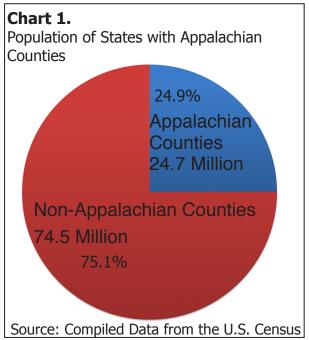
The difficulty in analyzing IRS information is that the non-profit's county of address is not provided, a necessary facet for comparing Appalachian non-profits with non-Appalachian. To match each non-profit with a county, the zip code was matched to a state and county FIPS code (Federal Information Processing Standard). The Kentucky State Data center provided a database of post offices with their zip code and FIPS. The statistical software program Stata was employed to match this information with the non-profit zip codes. At this point, with a county match, the non-profits can be analyzed in numerous ways including by type, location, or monetary factors. All maps were generated with ArcGIS, a software suite for geographic information systems.

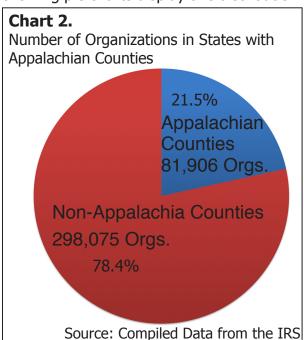
Analysis

There are approximately 380 thousand non-profit organizations in the 13 states that fall under the 501(c)3 definition. The central questions are; where do they locate; what are their missions; and what are the statistically significant factors concerning where they locate. These three objectives form the subheadings of this section.

Location of 501(c)3 Non-profits Across the Appalachia States

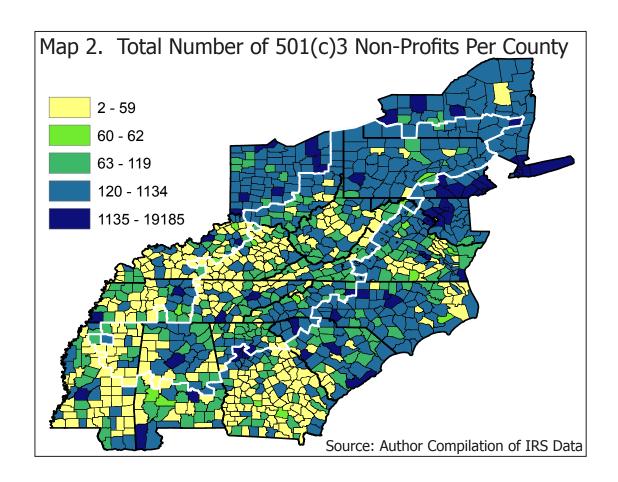
The 420 Appalachian counties have a combined population of approximately 24 million. In the non-Appalachian counties (represented by the remaining counties in each of the Appalachian states) the total population is about 3 times greater, approximately 75 million. Of the 380 thousand 501(c)3 organizations, approximately 82 thousand are within Appalachian counties and around 298 thousand organizations are in the non-Appalachian counties. The following pie charts display this distribution.

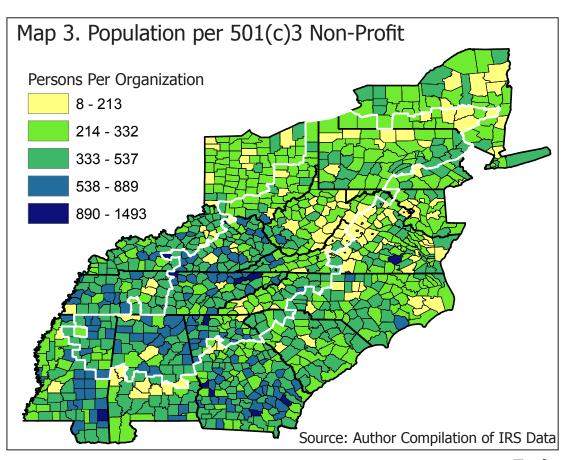




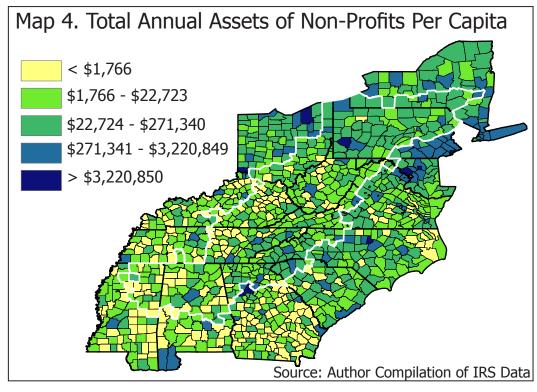
The total number of non-profit organizations per county can be seen in Map 2, the counties in Appalachia are highlighted. It is clear that the northern states enjoy greater numbers of non-profits per county. It is possible that this finding is largely driven by the greater populations of these states. To account for this potential factor Map 3 was made to show the population per organization. Map 3 shows favorable results for northern states, but the regional difference is not as distinct.

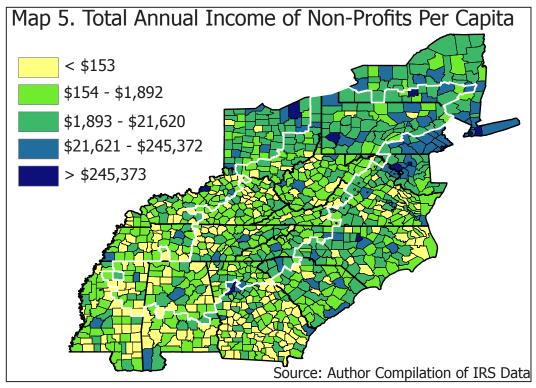
In these and in all remaining maps, the class breaks that define the color gradation will employ a method from ArcGIS known as a geometric interval. This method ensures that each class range has approximately the same number of values and that the change between each interval is fairly consistent.





Location of the organizations can also be observed relative to the per capita amount of assets or income in the county's non-profits. The following maps display these factors, and in both maps the Appalachian counties are highlighted. The distributions are very similar, and in both cases, the northern states have higher per capita monetary wealth in these measures.





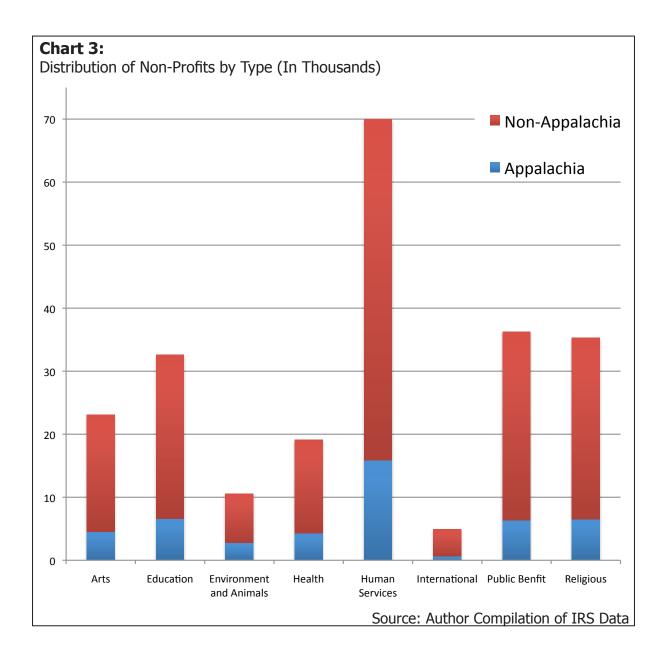
Purposes of 501(c)3 Non-Profits in the Appalachian States

The National Taxonomy of Exempt Entities is a system created by the IRS to classify non-profit organizations. In total there are 26 major groups that can be defined by 10 broad categories. These categories are listed in Table 1, along with the percentage of the whole for which each category accounts for among the 13 States with Appalachian Counties.

Table 1. Major Non-Profit Classifications and Percentage Distribution by Type for the 13			
	States with Appalachian Counties		
<u>I.</u>	Arts, Culture and Humanities	6.1%	
II.	Education	8.6%	
III.	Environment and Animals	2.8%	
IV.	Health	5.0%	
V.	Human Services	18.4%	
VI.	International, Foreign Affairs	1.3%	
VII.	Public, Societal Benefit	9.5%	
VIII.	Religion Related	9.2%	
IX.	Mutual / Membership Benefit	0.1%	
X.	Unknown, Unclassified	39.0%	
Source: National Center for Charitable Statistics and Compiled Data from the IRS (2011)			

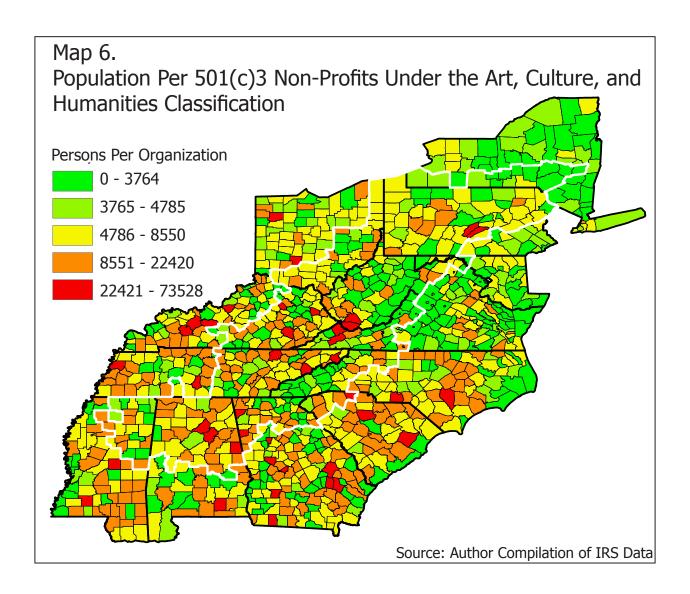
Recall that the non-profits observed in this research are those classified as 501(c)3 organizations. This classification largely excludes those organizations that are member-serving, such as insurance or retirement collectives. The result is that very few membership or mutual benefit organizations are included in this database. This database is also skewed by the number of unclassified organizations which totals at approximately 39 percent, or 148 thousand. The requirement for 501(c)3 non-profits to state a purpose is a recent addition for IRS filing procedures. Future data will likely be more complete.

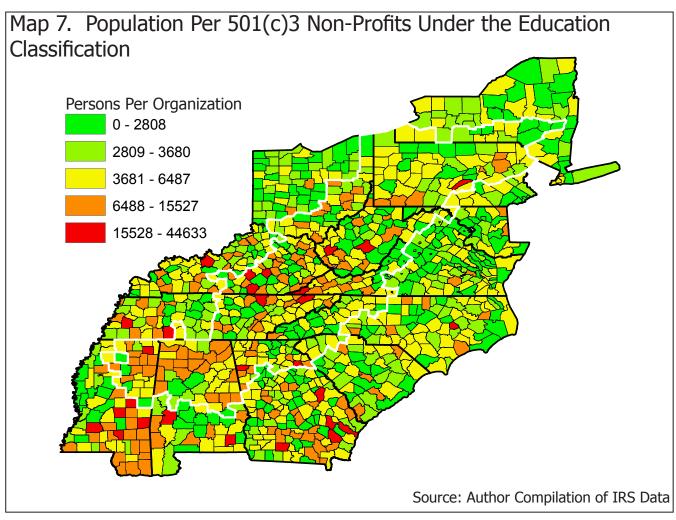
Excluding the unclassified and mutual / membership benefit categories, Chart 3 displays the distribution of organizations by purpose for both Appalachian and non-Appalachian counties in the 13 states.

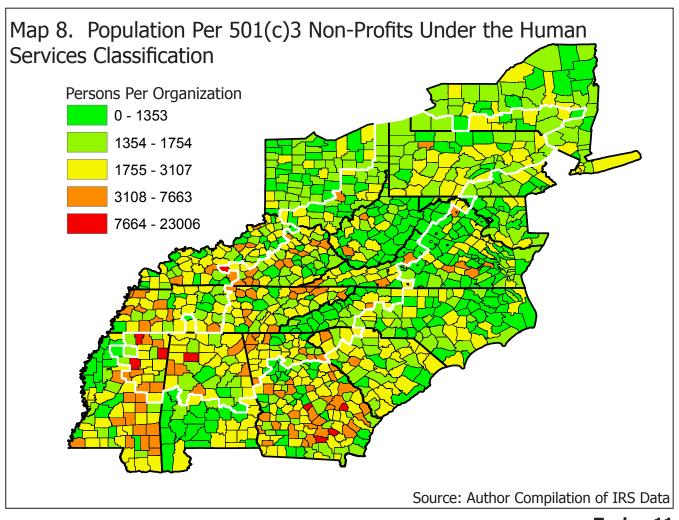


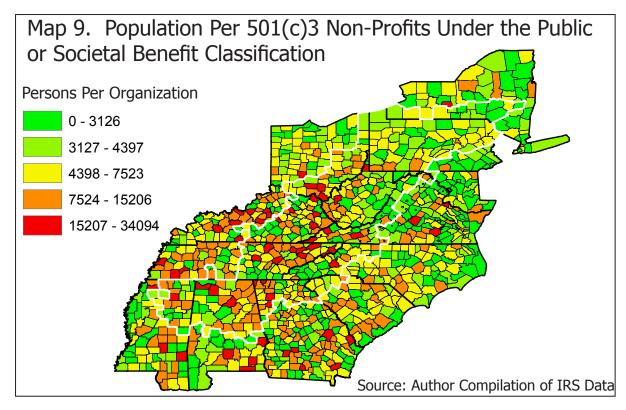
While the Appalachian counties have significantly fewer organizations than the non-Appalachian counties, the percentage distribution of the major types is very similar. To further understand the distribution by purpose across the 13 states, the following five maps were created. Each map displays a distribution of persons per organization, similar to Map 3. The classifications utilized are; Arts, Culture, and Humanities; Education; Human Services; Public, Societal Benefit; and Religion Related.

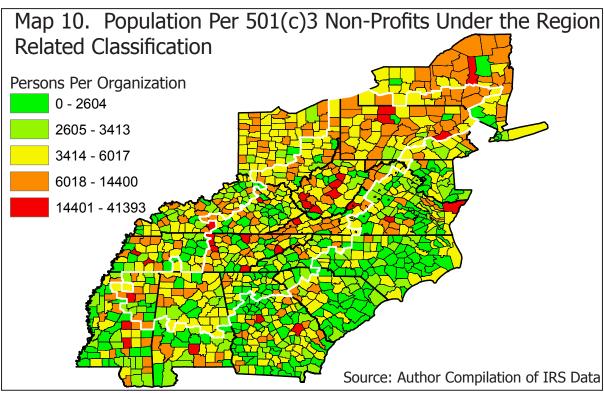
While no attempt will be made to evaluate social impact or gaps in service, there are some apparent patterns these maps display. Human Services related non-profits are fairly well dispersed, whereas Arts, Public Benefit, and Education related organizations in the northern states have the favorable result lower person per organization numbers. Religion oriented non-profits reverse that trend, where lower persons per organization numbers are seen in the southern states.











From these Maps it is not apparent if being within the Appalachian region is a statistically significant factor in the location of 501(c)3 non-profit organizations. The following section will discuss the statistical relationships between the number of non-profits within a county and various potential predictor variables.

Factors Related to Location of 501(c)3 Non-Profits

Based on the previous maps it is unclear if non-profits are more or less likely to locate in Appalachian counties versus the non-Appalachian counties. It is difficult to derive statistical relationships solely from these maps, and therefore a statistical analysis was conducted to evaluate this relationship.

The dependent variable is the total number of organizations in a county. This ranges from two non-profits to 19,185 organizations. The independent variables were chosen based on the two theoretical bases for non-profits to exist. The first is the public goods theory, and the second is known as contract failure theory.

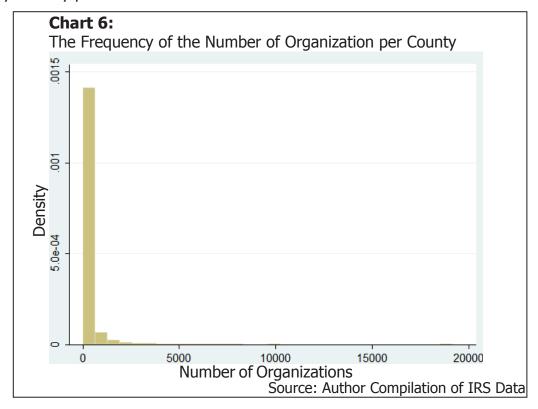
<u>Public Goods Theory</u> - Initially described in 1977 by Weisrod and Lee, non-profits may be more effective than governments. Functioning democratic governments are accountable to their voters. Yet, when it comes to provision of public goods this implies that governments will only supply such goods a level that satiates the median voter. Non-profits contribute to the residual left by the excess demand for such goods. (Powell, 1987)

<u>Contract Failure Theory</u>- The services offered by many nonprofit organizations may require higher levels of trust. Non-profits redistribute profit towards its mission rather than to shareholders or managers. For-profit organizations do not operate in this manner, and consequently have different incentives in operations. There is a possibility that for-profit organizations will provide a lower quality service to create higher profit margins; theoretically, this incentive is not prevalent in non-profit entities. In this light, with services like child care, a non-profit may be seen as more trustworthy. (Powell, 1987)

Counties with higher levels of poverty, lower median income, or a smaller population may have less ability to articulate their needs in the political process. Lower income citizens may also be more susceptible to contract failure theory, given limited options for services. These factors are independent variables in this model. Location based factors are also utilized including the designation that the county is or is not Appalachian, and the state that the county is in. The final factor is the total annual assets of the county's non-profit organizations. Table 2 lists these variables.

Table 2: Variables in Model				
Dependent Variable	The total number of organizations in County X			
Independent Variables	For County X:			
	Population			
	Median Income			
	Percent of Population in Poverty			
	Appalachian=1			
	Total Annual Assets of Non-profits			
	State=1			
	Source: Author Compilation			

The distribution of the dependent variable is not normal, rather it has right skew. This is represented in Chart 6, which displays the per county density of the number of organizations. While some counties have more than ten thousand organizations, nearly seventy percent have fewer than two hundred.



Given this distribution, and that the dependent variable is a count variable, it is appropriate to utilize a negative binomial regression to accurately model these data. The following table displays the coefficients and significance level of the independent variables (See Table 3).

Table 3: Negative Binomial Regression Results on the Number of 501(c)3 Non-Profit Organizations in a County			
Independent Variable	Coefficient	Standard Error	
	0.0004.1.1.1.		
<u>Population</u>	0. 00001**	2.78 E -07	
Median Income	0. 00004**	5.72 E -06	
Percent in Poverty	-0. 00514	0.003	
Appalachian=1	0. 01529	0.054	
Annual Assets	-2. 22 E -11**	6.49 E -12	
State Variable=1			
Georgia	-0. 400**	0.110	
Kentucky	-0. 396**	0.116	
<u>Maryland</u>	0. 186	0.183	
Mississippi	-0. 193	0.126	
New York	0. 407**	0.134	
North Carolina	0. 291**	0.119	
Ohio	0. 379**	0.122	
Pennsylvania	0. 355**	0.132	
South Carolina	0. 640**	0.145	
Tenessee	-0. 276**	0.120	
Virginia	0. 009	0.118	
West Virginia	0. 078	0.139	
Constant	3. 709**	0.195	

(Alabama was omitted, as such it is the comparison base for all other states)

n = 1085

The coefficients of a negative binomial regression are not readily understood. However, it can be stated that Appalachia is not a statistically significant factor in this data set. To further explain the results of these independent variables, the marginal effects were calculated. While all variables are included, only the statistically significant factors can be interpreted. Table 4 displays this information.

For any given county the average number of organizations is 152.249, and each variable will have a marginal change in this average. The marginal effect

^{*} Statistically significantly different from zero at the 10-percent level

^{**} Statistically significantly different from zero at the 5-percent level

Source: Author Analysis of Census and IRS Data

for the continuous variables imply that a one unit increase in the independent variable equates to a coefficient increase in the number of organizations in a county. For instance, if the population of a county increases by approximately 1,000 persons it will equate to one additional 501(c)3 non-profit organization in the county. Assets have a negative effect, but only on the upper margin. The results imply that for every 1 billion dollar increase in total non-profit assets of a county, there will be approximately 3 fewer organizations. The other continuous variables can also be interpreted in this manner, given statistical significance.

Table 4: Marginal Effects Organizations in a County		1(c)3 Non-Profit
Independent Variable	dy/dx	Standard Error
Population	0. 001**	0. 0001
Median Income	0. 006**	0. 0009
Percent in Poverty	0. 272	0. 5268
Annual Assets	-3. 47 E -09 **	0. 0001
Appalachian Subregion=	=1	
Southern	-5. 063	13. 607
South Central	15. 592	16. 811
Central	-42. 689**	13. 131
North Central	-5. 327	24. 259
Northern	59. 512**	24. 747
State Variable=1		
Georgia	-54. 999**	12. 956
Kentucky	-39. 516**	16. 507
Maryland	16. 144	32. 329
Mississippi	-30. 417*	16. 072
New York	52. 465*	29. 360
North Carolina	41. 968*	24. 533
Ohio	56. 845**	28. 080
Pennsylvania	15. 034	28. 171
South Carolina	127. 686**	40. 264
Tenessee	-40. 617**	16. 780
Virginia	-0. 596	19. 747
West Virginia	16. 852	33. 769

(Alabama was omitted, as such it is the comparison base for all other states)

y =the predicted number of organizations in a county = 153.249

^{*} Statistically significantly different from zero at the 10-percent level

^{**} Statistically significantly different from zero at the 5-percent level Source: Author Analysis of Census and IRS Data

The coefficient of a state dummy variable is the discrete change of the variable from 0 to 1 relative to Alabama. This implies that a Kentucky county will have approximately 52 fewer organizations than a county in Alabama. The remaining state variables can be interpreted in this manner, given statistical significance.

This model presents Appalachia as a homogeneous region. This is an unfair representation of such a diverse area. Utilizing subregions created by the Appalachian Regional Commission, the variable Appalachian is replaced. Table 5 displays these results. The remaining variables in the model are the same.

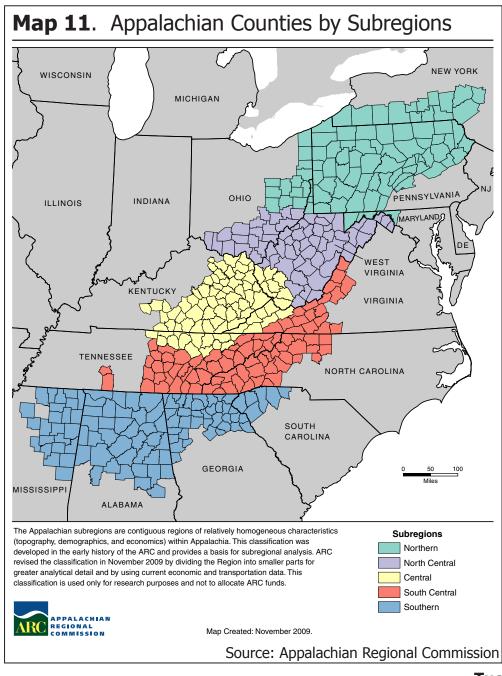


Table 5: Negative Binomial Regression on the Number of 501(c)3 Non-Profit Organizations in a County, including Appalachian Subregions			
Independent Variable	Coefficient	Standard Error	
Population	0. 00001**	0. 77 E -07	
Median Income	0. 00003**	0. 83 E -06	
Percent in Poverty	-0. 00178	0. 003	
Annual Assets	-2. 27 E -11**	6. 29 E -11	
Appalachian Subregion=	1		
Southern	-0. 034	0. 092	
South Central	-0. 098	0. 101	
Central	-0. 319**	0. 112	
North Central	-0. 035	0. 164	
Northern	0. 337**	0. 122	
State Variable=1			
Georgia	-0. 415**	0. 112	
Kentucky	-0. 289**	0. 135	
Maryland	0. 101	0. 192	
Mississippi	-0. 218*	0. 127	
New York	0. 300**	0. 147	
North Carolina	0. 248*	0. 131	
Ohio	0. 324**	0. 140	
Pennsylvania	0. 095	0. 170	
South Carolina	0. 620**	0. 148	
Tenessee	-0. 300**	0. 140	
Virginia	-0. 004	0. 130	
West Virginia	0. 105	0. 201	
Constant (Alabama was emitted as such it	3. 590	0. 203	

(Alabama was omitted, as such it is the comparison base for all other states)

n = 1085

The major difference between this model and the first is the statistical significance of the two Appalachian subregions. The Northern and the Central subregions are very different with regards to socioeconomic factors (see Map 1). The Northern subregion has a positive coefficient, whereas Central Appalachian subregion has a negative one.

^{*} Statistically significantly different from zero at the 10-percent level

^{**} Statistically significantly different from zero at the 5-percent level Source: Author Analysis of Census and IRS Data

Table Six displays the marginal effects of these variables. In this model y=152.505, which is the predicted number of organizations for any county. Central Appalachian counties with the negative marginal effect are predicted to have approximately 109.816 organizations. Northern Appalachian counties are predicted to have have approximately 212.017 organizations.

Table 6: Marginal Effects on the Number of 501(c)3 Non-Profit				
Organizations in a County, including Appalachian Subregions				
Independent Variable	dy/dx	Standard Error		
Population	0. 001**	0. 0001		
Median Income	0. 006**	0. 0009		
Percent in Poverty	0. 272	0. 5268		
Annual Assets	-3. 47 E -09 **	0. 0001		
Appalachian Subregion	=1			
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North Central	-5. 327	24. 259		
Northern	59. 512**	24. 747		
State Variable=1				
Georgia	-54. 999**	12. 956		
Kentucky	-39. 516**	16. 507		
Maryland	16. 144	32. 329		
Mississippi	-30. 417*	16. 072		
New York	52. 465*	29. 360		
North Carolina	41. 968*	24. 533		
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(Alabama was omitted, as such it is the comparison base for all other states)

y =the predicted number of organizations in a county = 152.505

^{*} Statistically significantly different from zero at the 10-percent level

^{**} Statistically significantly different from zero at the 5-percent level

Source: Author Analysis of Census and IRS Data

This analysis is only a beginning. There are multiple ways that this type of information may be examined. For instance, instead of the total number of organizations as the dependent variable, it could be replaced with the total number of organizations with a particular mission. In this way the statistically significant factors of location could be examined for religious related organizations, or any classification desired. This database and the research methods utilized have the potential to answer many non-profit related questions. To do so, it is pertinent to account for the caveats of this project.

Caveats

This project is certainly not without limitations. One of these is the method used to match each organization with a county. As detailed in the research methods section, the Kentucky State Data Center provided a database of post offices where each post office had a zip code and the FIPS county codes of the counties it served. The zip code of the organization was matched with that of a post office and the correlating FIPS county code was designated as the home county of the non-profit. However, post offices may serve multiple counties, and there is a definite potential for mismatching the organizations. Indeed, approximately 13 percent of the organizations utilized in this project had multiple county options.

Another issue is that this project only observed non-profits that fall under section 501(c)3 of the IRS tax code, thus limiting the extent to which these results are generalizable. The organizations were chosen for their specific mission-serving and public purpose features. However, this is not to say that other member-serving organizations do not fill a public purpose of their county. Also, this data set only consists of organizations that are still filing with the IRS as of 2010. Any organization that halted services or "went out of business" is not included.

Finally, with this database it is very difficult to account for the non-profit organizations that serve multiple counties. A county line does not delineate the service that a non-profit can provide. As this project is not a social impact study this does not directly affect the validity of the analysis, though it is a topic that may be addressed in the future.

Conclusion

Access to this information may improve efficacy decision making processes of citizens, non-profit leaders, and policy makers. It provides a picture of communities and regions that may help to identify opportunities for collaboration or potential gaps in services. For the citizen, it may help in choosing an organization to support. For the non-profit leader, it may be a link to future collaboration. For the policy-maker, readily available information can be used on the legislative floor by defending lobbyists or by an elected official. Understanding what services are readily available may help reduce duplication by citizens who desire to start a new organization.

Future researchers may also utilize the methods and results of this project. Tracking the dollars spent in a county and the death and birth of non-profits over a number of years is a start for a social impact study. The information can be aggregated in different ways and could lead to better understanding of what drives non-profits to locate in certain regions or states. If a county is interested in attracting particular services, this type of information would certainly be useful. There are many ways these data may be utilized, though it is up to the individual to find a best fit.

Works Cited

- Appalachian Regional Commission. http://www.arc.gov Multiple Accesses from January through March 2011.
- Internal Revenue Service. Master File Data. Exempt Organizations- Master Listing. http://www.irs.gov/taxstats/charitablestats/article/0,,id=97186,00.html> Accessed August, 2010.

Internal Revenue Service. Code 501. Subsection C. Paragraph 3.

Internal Revenue Service. Code 6014.

- Powell, Walter. <u>The Nonprofit Sector. A Research Handbook</u>. Yale University Press, New Haven. 1987.
- Salamon, Lester. <u>The Resilient Sector: The State of Non-Profit America</u>. Brookings Institution Press, Washington D.C. 2003.
- U.S. Census Bureau. American Community Survey. 3-year Population Average.
- U.S. Census Bureau. American Community Survey. 5-year Unemployment Average.
- U.S. Census Bureau. American Community Survey. 5-year Median Income Average.