

Regional Patterns of Giving in the United States during the Great Recession

Jose Javier Lopez, Rama Prasada Mohapatra, and Paul Prew

Abstract—Recently, studies on regional patterns of caring, which includes philanthropic giving, are emerging in the social science and human geography literature. Our study examines the geographic patterns of giving in the U.S.A. during the late 2000s and early 2010s, and the association between giving and five social conditions: attendance to religious services, economic inequality, levels of happiness, age, and percentage of minority population. This research aims to look at these issues in an interdisciplinary fashion by combining sociological insights with thematic mapping and human geography. We endeavor to add to the growing literature on the study of regional patterns of caring and philanthropic giving by asking the question, “can we discern regional patterns of philanthropic giving consistent with socioeconomic phenomena?” Our results demonstrate distinguishable geographic patterns of giving associated with the social conditions included here. Above average percentage of households’ income donated to charities is associated with regions of the United States with above average religious attendance, greater inequality, higher levels of unhappiness, and minority population.

Index Terms—Geography of caring, thematic mapping, philanthropic giving, religious service attendance.

I. INTRODUCTION

The general economic decline detected in global markets during the late 2000s and early 2010s is known as the Great Recession, and this period is remembered as an era when unemployment levels were at a critical point. Research by Marx and Carter (2014, p. 350) [1] indicates that demand on social services provided by nonprofits tends to increase during times of “extreme economic downturn” and consequently these entities can become more dependent on charitable donations. In recent years, research on philanthropic giving has gained momentum and is significantly contributing to the body of literature in the expansive field of the geography of caring.

The objective of this research is to contribute to the literature on the geography of caring by conducting a comparative study of levels of philanthropic giving in the U.S. based on the percentage of households’ income donated to charities, hypothesizing that the levels of citizens’ philanthropic giving vary across the formal geographic regions of the United States. According to Muller and

Whiteman (2009, p. 592) [2], prior research suggests philanthropic giving, in general, varies across regions and countries.

Geographic Information Science (GIS), thematic mapping methods, and nonparametric inferential statistics can help identify inter-regional differences in philanthropic giving. The analytical methods used here have been selected to determine if geographic variations in patterns of philanthropic giving truly existed during part of the Great Recession. The use of GIS helps us visualize the information necessary to understand ideas pertinent to the geography of caring, and more specifically, philanthropic giving. Hurd, Mason, and Pinch (1998, p. 19) [3] point out that mapping behavior does “provide an opportunity for obtaining some evidence to corroborate theories and expressions of intent.” If social scientists are to understand philanthropic giving, developing a clear understanding of the geographic patterns will aid further analysis. The comprehensive study by *The Chronicle of Philanthropy* (Gipple, 2012) [4] provides a starting point for research. The Chronicle’s study examines philanthropic giving data by ZIP code and income level in every city and town in the United States using comprehensive tax records from the IRS for 2008. In our research, we replicate the Chronicle’s study but include attendance at religious services as well as social conditions less researched in philanthropic giving studies: income inequality, happiness, age, and minority population.

II. CARING AND PHILANTHROPIC GIVING

Caring research includes several attitudes and activities including compassion, caring for the elderly, support for social services, and as in our study, philanthropic giving. Caring and compassion are attitudes described in detail by researchers, Lawson (2009) [5] and Armstrong (2011) [6]. Lawson (2009, p. 210) [5] noted that “we all receive care, and throughout our lives many of us will also give care.” Caring is critical to our individual survival and the preservation of societies and in our polarized world, “compassion is in our best interest” (Armstrong, 2011, p. 22) [6].

Research focused on regional variation in caring for the elderly in Scotland provides a specific example of the geography of caring. Milligan (2000, p. 52) [7] notes in her analysis that “spatial variations in the social, political, and demographic profile of particular locales are likely to impact differentially on their geographies of caring.” Analyzing changes in Scottish elder care, Milligan (2000) [7] argues that geography, in terms of access to resources, creates variations in the experiences of the caregivers and those for whom they provide care. Geography plays a part in facilitating or impeding the ability of people to engage in caring behavior.

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Milligan (2000, p. 50) [7] indicates that oftentimes societies that support the Welfare State tend to see individuals as “consumers rather than producers of health and social services, leading us to lose sight of the informal help and support provided outside the statutory services.” According to Milligan (2000) [7], attitudes toward public services can vary over geography.

Within the geography of caring is a more specific discussion of philanthropic giving. Julian Wolpert (1988, p. 665) [8] analyzed philanthropic giving by studying generosity as it relates to support for public services, and he noticed that “patterns of both public and private support for social and amenity services are expressions of value differences that have both regional and place manifestations.” Using Metropolitan Statistical Areas, Wolpert (1988) [8] discovered geographic patterns, but not as stark as the researcher anticipated. While the American Rust Belt region (the upper Northeastern U.S.) tended to be associated with higher levels of generosity and Sunbelt communities (the geographic southern U.S.) were associated with lower generosity, exceptions existed to the geographic patterns. Wolpert (1988) [8] also found that the provision of public amenities did not tend to diminish private support. In fact, they tended to be complimentary. Wolpert (1988, p. 666) [8] noted, “altruism and helping behavior can coexist with the pursuit of self-interest, can be learned and can vary significantly by form and degree within the population,” and he suggested a “regional analysis may be the primary way to examine the contextual complexities of donor behavior as a social act and its mixed motives of personal benefit and benevolence.”

Support for public services is part of the broader literature on the geography of caring. We focus on percentage of household income donated to charities, a form of philanthropic giving. While other investigations study generosity and caring behavior, we are interested in five specific social conditions that may be linked to philanthropic giving. These conditions are church attendance, income inequality, levels of happiness, age, and percent of the population considered an ethnic and racial minority.

III. CHURCH ATTENDANCE

Currently, researchers debate what drives people to be more generous, and while some researchers like Regnerus *et al.* (1998) [9] have pointed toward religion as an explanation, others seemed to disagree or produced more ambiguous results (Paciotti *et al.*, 2011; Saslow *et al.*, 2013; Vaidyanathan *et al.*, 2011) [10]-[12]. Armstrong (2011, pp. 3-4) [6] noted that “all faiths insist that compassion is the test of true spirituality,” and all faiths “insist that you cannot confine your benevolence to your own group; you must have concern for everybody.” However, it would be questionable to confidently assert that all individuals who display greater religious commitment are among the most giving.

Despite the conclusions of authors like Regnerus *et al.* (1998) [9] that religiosity drives giving, more recent research on religion and generosity tends to conclude that participation in social institutions, whether secular or religious, is more important for predicting philanthropic giving than a simple notion of religiosity. Researchers argue

there is “little evidence” (Paciotti *et al.*, 2011, p. 301) [10] to suggest that religious institutions promote more giving than secular ones. Saslow (2013) [11] suggests that less religious individuals are more motivated by compassion than religious individuals when it comes to “prosocial” behaviors. Like the debate regarding religiosity and giving, the research on the effect of different religious denominations and giving is split. While some authors claim that specific denominations have different propensities for giving, others believe there are no discernable differences between denominations (Forbes and Zampelli, 1997; Will and Cochran, 1995; Ottoni-Wilhelm, 2010) [13]-[15].

Notwithstanding conflicting results of prior research addressing religion and philanthropic giving, there is a consensus that church attendance is associated with increased philanthropic giving (Vaidyanathan *et al.*, 2011, Forbes & Zampelli, 1997; Ottoni-Wilhelm, 2010; Ottoni-Wilhelm, Rooney, & Tempel, 2007;) [12]-[16]. Vaidyanathan *et al.*’s (2011) [12] conclusions regarding giving and religious affiliation present a complex picture. According to Vaidyanathan *et al.* (2011, pp. 463-466) [12], religious attendance is associated strongly with congregational giving, but the effect is much weaker for noncongregational nonreligious charities. The significance of religious attendance decreases when political activity is added to the model, and the significance of religious attendance disappears when political activity and religious tradition are incorporated to the model. Ottoni-Wilhelm (2010) [15] finds attendance to be a critical variable to understand the differences in giving between religious denominations. When attempting to identify whether different religious denominations are more or less likely to give, Ottoni-Wilhelm (2010, p. 406) [15] finds that religious attendance needs to be taken into account when comparing denominations. If omitted categories are not properly specified, differences in denominations found in the results may be due to differences in religious attendance. Ottoni-Wilhelm (2010, p. 407) [15] also notes that there is an association between religious giving and secular giving, but there is a stronger relationship between secular giving and giving to necessity organizations than there is between religious giving and necessity giving. While the results of the studies of religious attendance and philanthropic giving are complex, they do suggest a relationship.

IV. INCOME INEQUALITY AND HAPPINESS

While religious attendance has been associated with giving in several studies, we want to test other less well-researched associations. We include another social condition that may inspire philanthropic giving in United States’ households, income inequality. While there is little specific academic discussion of income inequality and philanthropic giving, Laskowski (2011) [17] suggests a direct correlation between the share of income going to the top 1% and total giving by foundations. “Rising inequality increases the likelihood of surplus wealth and the chance that some of the surplus wealth held by the richest among us will exchange hands as charity” (Laskowski, 2011, p. 7) [17].

Another source of increased charity may derive from lower income populations. According to Frank Greve’s (2009) [18]

analysis of U.S. Bureau of Labor Statistics, the poor are more likely to be generous than the wealthy. As a result, giving may be higher in regions with increased income inequality due to the greater wealth available for philanthropic giving among the wealthy and the greater percentage of income given by poorer individuals. However, other research suggests philanthropic giving might increase inequality. Dasgupta and Kanbur (2011, p. 18) [19] state, “using measures of both absolute and relative inequality, we have shown that philanthropy may actually exacerbate inequality, instead of reducing it.” By giving tax credits for charitable donations, it reduces the amount of “resources available for direct redistribution” (Dasgupta and Kanbur, 2011, p. 19) [19]. Thus, philanthropic giving does not reduce inequality, but may produce greater inequality by further concentrating wealth in few hands by reducing the resources available to the poor. Inequality may be tied to philanthropy because of increased giving, but also because increased philanthropic giving may divert resources away from the amelioration of inequality.

Another social condition, potentially affecting philanthropic giving in U.S. households, is level of happiness and is included in our analysis. In essence, we have hypothesized that areas with low happiness levels would have more households willing to contribute a greater share of their income to charities. Based on a “home region” effect observed in corporate philanthropy (Muller and Whiteman, 2009) [2], individuals would be more likely to give in response to social, health, and economic hardships close to home. Muller and Whiteman’s (2009, p. 599) [2] study of corporate philanthropy identifies a “home region effect that is quite apparent in the case of Katrina, with North American firms giving significantly more often and at significantly greater values than both European and Asian firms.” We hypothesize that, in many ways, corporate behavior may be an extension of individual and household behavior, therefore we believe that individuals, who live in states where unhappiness is a daily affair, might feel more compelled to embrace generous civic practices. By witnessing the unhappiness in their home region, they would be more likely to give based on a home region effect. Proximity to unhappiness encourages giving similar to corporate giving to nearby disaster areas.

V. AGE OF THE POPULATION AND MINORITY POPULATION

Research conducted in the United Kingdom pertinent to charitable giving by British households from 1978 – 2008 found that older age groups have among the highest participation rates when it comes to charitable giving (Cowley *et al.* 2011, p. 32) [20]. Even though a significant portion of senior citizens are neither interested in nor have access to the latest trends in online community activism, many of our elderly citizens have remained active in traditional forms of association that promote efficient voluntarism and philanthropy in ways more effective than electronic social networks (Ferguson 2013) [21]. The team of researchers from the University of Bristol who examined three decades of household giving to charity from 1978 to 2008, noticed that in recent years donations from individuals were relatively low for most age cohorts younger than 65; in

fact the over-65s accounted for slightly above a third of all contributions (Cowley *et al.* 2011, p. 3) [20].

Political economist Alberto Alesina has researched situations in which certain public goods supplied by governments are inversely related to ethnic fragmentation, and more ethnically diverse jurisdictions in the United States devote lower shares of spending to core public goods (Alesina *et al.* 1999) [22]. The 2010 Census provides the percentage of a state’s population that is considered members of minority groups, people of color, and we have examined if patterns of giving are not independent of above average minority population percentage. Basically, we would like to see if ethnically diverse states experience less contributions from generous givers, therefore, reflecting the kind of neglect minorities experience from their governments.

VI. METHOD

A. Data and Variables

To add to the growing literature on the geography of caring and philanthropic giving during the Great Recession of the late 2000s and early 2010s, we address the question, “can we discern geographic patterns of philanthropic giving consistent with five specific socioeconomic phenomena?” Specifically, we analyzed the percentage of household income donated to charities in relation to five social conditions: attendance at religious services at least once a week, income inequality (GINI coefficients), levels of happiness, percent of the population ages 65 and older, and minority population. Given that generosity and philanthropy are central components of human societies, identification of the geographic patterns of giving during the Great Recession is an important step to understanding the underlying social circumstances associated with giving during a period of significant economic decline. Our study is based on a study by *The Chronicle of Philanthropy* (2012b) [23]. While *The Chronicle of Philanthropy* presents several thematic maps in 2012 to indicate rates of philanthropic giving in the United States (Chronicle of Philanthropy, 2012b) [23], we identify a limitation in the Chronicle’s graphics. Because the Chronicle shaded its maps based on graduated data, we found it difficult to identify natural breaks, and, therefore, regions with remarkable records of philanthropic giving. Without natural breaks, geographic patterns of philanthropic giving associated with regional cultural traits would be difficult to identify. Our research addresses this issue.

The first step of our analysis involves the use of thematic maps to visualize and analyze regional patterns existing in our variables. To facilitate comparison of household charitable behavior and various social conditions, we created thematic maps utilizing Jenks optimization (Dent, 1993, p. 139) [24] to create four natural groups in the data based on natural breaks. To confirm any visual patterns in the maps reflecting the relationships between philanthropic giving and the five social conditions mentioned earlier, we conducted chi-square tests in the second step.

In this study, we collected, from various sources, data related to the percentage of household income donated to charities, attendance at religious services at least once a week, income inequality (GINI index), levels of happiness, percent

of the total population age 65 and older, and percentage of minority populations (ethnicity and race). For the percentage of household's income donated to charities, we used Internal Revenue Services (2012) [25] data for the year 2008. Our study includes the Pew Research Center (Pew Forum on Religion & Public Life, 2008) [26] data for the percentage of attendance at religious services at least once a week. Since the statistics pertinent to percentage of household income donated to charities was collected in 2008, we used GINI index data for the year 2008 from the U.S. Census Bureau (Noss, 2010) [27] as a summary measure of income inequality. The GINI index varies from 0 to 1, 0 indicating perfect equality where there is a proportional distribution of income. A value of 1 indicates perfect inequality where one person has all the income and the remaining population has none. For the happiness data, we relied on more recent research examining sentiment in Twitter posts. The University of Vermont's Complex Systems Center (Mitchell *et al.* 2013) [28] produced a happiness index based on the examination of geotagged tweets during the calendar year 2011. These researchers (Mitchell *et al.* 2013) [28] used a language assessment approach to measure happiness of the words contained in the tweets. The resulting scores allowed comparison of the states in terms of degrees of happiness. Data pertinent to percent of the population 65 and older and minority groups is from the Census Bureau 2007 [29] Population Estimates and the 2010 Census [30].

B. Thematic Mapping and Chi-Square Test

Thematic mapping provided a comparison to *The Chronicle of Philanthropy* (Gipple, 2012) [4] maps. In this study, we used ArcGIS 10.1 (ESRI, 2014) [31] GIS software to create a geodatabase. Data pertaining to the percentage of household income donated to charities, attendance at religious services at least once a week, income inequality (GINI index), happiness index, and minority population for each state of the United States was stored in the geodatabase. Because *The Chronicle of Philanthropy* (Gipple, 2012) [4] used graduated shading in its maps, we employed Jenks optimization method (de Smith *et al.* 2013) [32] in ArcGIS 10.1 to create natural breaks for four groups of states. Maps for each variable were generated using this approach. Jenks natural breaks algorithm allows greater distinction in the patterns of the mapped variables (Dent, 1993) [24]. To analyze the association between philanthropic giving and the social conditions, we visually inspected six maps including states' average percentage of household income donated to charities, percentage of attendance at religious services at least once a week, GINI index, happiness index, populations ages 65 and older, and percentage of the population considered an ethnic minority.

To test the salience of the appearance of geographic patterns in our maps, we conducted chi-square tests. While geographic patterns appeared visually distinguishable in some of the maps, chi-square tests help to confirm any visual patterns. Due to the characteristics of the data for states' average percentage of household income donated to charities, percentage of attendance at religious services, GINI index, happiness index, populations ages 65 and older, and minority population, the analytical method of choice was a two-way chi-square test of independence. In essence, we opted for this

non-parametric statistics test of independence because some of the examined socio-economic data did not meet the very specific conditions that parametric tests demand. Various analytical techniques we considered for data analysis required that a population distribution must have a normal distribution and equal population variances (Cohen and Lea, 2004, pp. 90-91) [33]. When we evaluated the data in our study, we determined that the requirements pertinent to normal distribution were not met. Given the characteristics of the data, convention suggests hypothesis tests that are distribution free (Cohen and Lea, 2004, p. 199) [33]. Although the original variables were measured on a continuous scale, we converted them into grouped attributes in order to apply non-parametric tests.

To analyze the data, we created 2x2 contingency tables for chi-square analyses (see Tables I, II, III, IV, and V). For analytical purposes, we divided states in two categories: areal units with above average and below average values. For the first contingency table, we contrasted frequency of attendance at religious services at least once a week with percentage of household income donated to charities (Table I). We repeated the chi-square analysis to test whether above average percentage of household income donated to charities was associated with our other variables. The other question is if factors such as states with above average GINI coefficients, below average happiness levels, above average percentage of people ages 65 and older, and significant presence of ethnic and racial minorities affect giving (Tables II, III, IV, and V)?

TABLE I: CONTINGENCY MATRIX
FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE FREQUENCY OF ATTENDANCE AT RELIGIOUS SERVICES AT LEAST ONCE A WEEK VERSUS FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF HOUSEHOLDS' INCOME DONATED TO CHARITIES

Percentage of household income donated to charities	Attendance at religious services at least once a week		
	Above Average	Below Average	Total
Above Average	14	3	17
Below Average	10	24	34
Total	24	27	50 states and the District of Columbia
The Pearson's chi-square value obtained is 12.75 and the significance value is less than 0.05. Therefore, the chi-square value is statistically significant.			

TABLE II: CONTINGENCY MATRIX
FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE GINI COEFFICIENTS (SOCIO-ECONOMIC INEQUALITY) VERSUS FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF HOUSEHOLDS' INCOME DONATED TO CHARITIES

Percentage of household income donated to charities	GINI coefficients (socio-economic inequality)		
	Above Average	Below Average	Total
Above Average	13	4	17
Below Average	11	23	34
Total	24	27	50 states and the District of Columbia
The Pearson's chi-square value obtained is 8.85 and the significance value is .003. This chi-square value is considered statistically significant.			

TABLE III: CONTINGENCY MATRIX

FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE HAPPINESS LEVELS VERSUS FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF HOUSEHOLDS' INCOME DONATED TO CHARITIES

Percentage of household income donated to charities	Happiness levels		
	Above Average	Below Average	Total
Above Average	5	12	17
Below Average	22	12	34
Total	27	24	50 states and the District of Columbia

The Pearson's chi-square value obtained is 5.67 and the significance value is .017. This chi-square value is considered statistically significant.

TABLE IV: CONTINGENCY MATRIX

FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE POPULATIONS AGES 65 AND OLDER VERSUS FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF HOUSEHOLDS' INCOME DONATED TO CHARITIES

Percentage of household income donated to charities	Percent of the population ages 65 and older		
	Above Average	Below Average	Total
Above Average	8	9	17
Below Average	21	13	34
Total	29	22	50 states and the District of Columbia

The Pearson's chi-square value obtained is .99 and the significance value is .318, which is not statistically significant.

TABLE V: CONTINGENCY MATRIX

FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF MINORITY POPULATION VERSUS FREQUENCY OF STATES WITH ABOVE AND BELOW AVERAGE PERCENTAGE OF HOUSEHOLDS' DONATED INCOME

Percentage of household income donated to charities	Percent of the population considered ethnic and racial minority		
	Above Average	Below Average	Total
Above Average	11	6	17
Below Average	12	22	34
Total	23	28	50 states and the District of Columbia

The Pearson's chi-square value obtained for states with above the average ethnic and racial minorities (non-white) is 3.960 and the significance value is .047, which is statistically significant.

VII. RESULTS

Referring to the maps, we have found that, visually, geographic distributions of the selected socioeconomic characteristics tend to compare favorably with the regional patterns of giving. Our thematic maps present clear patterns of states from different U.S. formal regions that exhibit identifiable differences in philanthropic giving (Figs. 1, 2, 3, 4, 5, and 6). In Fig. 1 (Percentage of Household Income Donated to Charities), states that tend to give the most are concentrated in the South with the exception of Utah and Idaho. In Fig. 2 (Percentage of Attendance at Religious Services at Least Once a Week), church attendance tends also to be concentrated in the South.

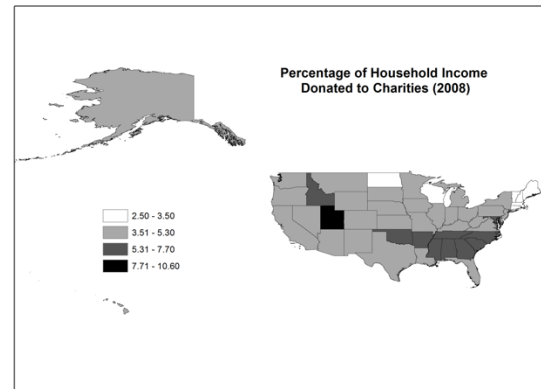


Fig. 1. Percentage of household income donated to charities (2008).

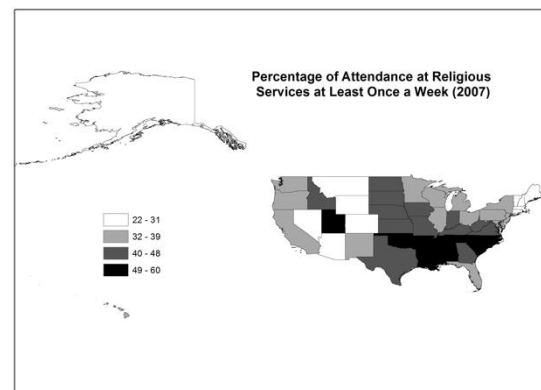


Fig. 2. Percentage of attendance at religious services at least once a week (2007).

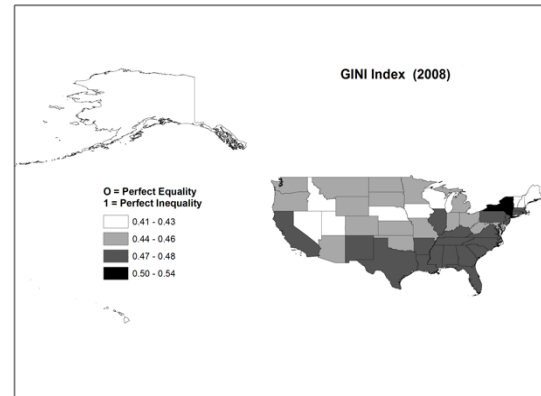


Fig. 3. GINI index (2008).

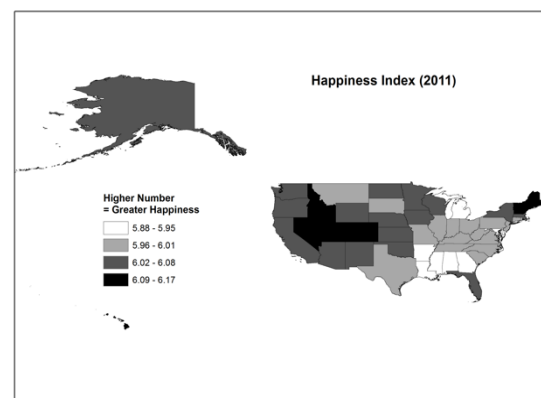


Fig. 4. Happiness index (2011).

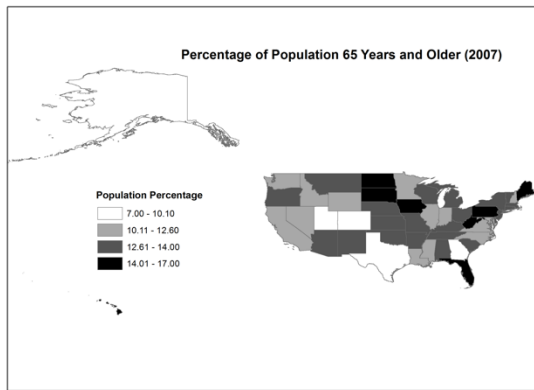


Fig. 5. Percentage of population 65 years and older (2007).

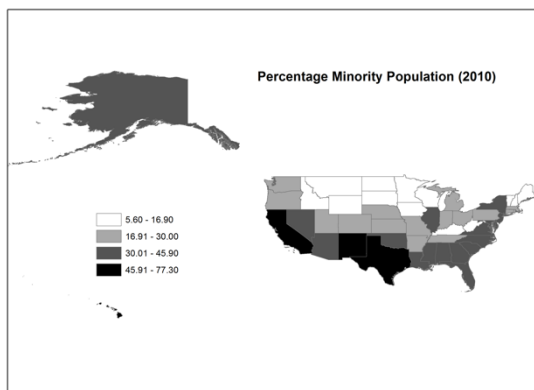


Fig. 6. Percentage minority population (2010).

It is important to point out that the American South tends to be consistent in terms of being a multi-state region showing high percentages of attendance at religious services and income donated to charities, but Utah and Idaho in some ways surpass the American South when it comes to some of the variables examined here. However, we do not focus our attention toward this two-state area because it is not representative of the rest of the American West. In essence, both western states are exceptional due to their particular religious history. Utah and southeastern Idaho are considered by geographers and other social scientists a Mormon “domain”. The idea of a Mormon “domain” refers to the fact that this area has values and beliefs of the members of the Church of Jesus Christ of Latter-day Saints that have become dominant, and the combination of isolation and distinctive culture is responsible for “a regional identity” that is readily recognizable and distinguished from the rest of the western half of the nation (Norton, 2000, pp. 114-115) [34]. This two-state region of the American West is considered by Norton (2000, pp. 212-213) [34] a cultural homeland, and he identifies two cultural traits that help us understand why donations to charities and religious activity are so significant there; first, “the submission of individual will to larger group interests was characteristic of Mormonism during the frontier settlement period”, and second, Mormons encourage cooperative effort and support for other members based on principles of a community-oriented life.

Based on the two-way chi-square test of independence, above versus below average frequency of attendance at religious services at least once a week and percentage of household income donated to charities are significantly related. The Pearson’s chi-square value obtained is 12.75 and

the significance value was less than 0.05 (Table I). Therefore, the chi-square value is statistically significant indicating that the 58% of states reporting above average attendance to religious services are not statistically independent from the states above average in percent of income donated to charities.

When comparing Fig. 1 (Percentage of Household Income Donated to Charities) to Fig. 3 (GINI Index), we have detected consistency between the statistical analysis and the geographic patterns. Again, income inequality tends to be more heavily concentrated in the South similar to higher rates of income donated to charities. The Pearson’s chi-square value obtained is 8.85 and the significance value is .003, which is considered statistically significant (Table II). Basically, the results suggest that states with above average GINI coefficients give above average percentage of household income donations to charities. Therefore, a considerable number of states with high income inequality are among the most generous areas of the country. At the same time, a substantial number of states with below average GINI coefficients are in the category of areas with below average percentage of household income donated to charities (23 states).

Another hypothesized relationship compares the happiness index with the percentage of household income donated to charities. A comparison of the maps, Fig. 1 and Fig. 4 (Happiness Index), tends to demonstrate a relative consistency. The Pearson’s chi-square value obtained is 5.67 and the significance value is .017, which is statistically significant (Table III). The results suggest that states with below average happiness levels donate above average percentage of household income to charities. Therefore, a considerable number of states with low happiness levels are among the most giving areas of the country.

Our final hypothesized relationships compare percent of state populations ages 65 and older (Fig. 5), and minority populations (Fig. 6) with the percentage of household income donated to charities. The Pearson’s chi-square value obtained for populations 65 and older is .999. The significance value is .318, which is not statistically significant (Table IV). This result suggests that states with above average populations ages 65 and older make no difference in the percentage of household income donated to charities. Therefore, a considerable number of states with above average elderly populations are not necessarily among the most involved in individual charitable giving. On the other hand, the Pearson’s chi-square value obtained for states with above average ethnic and racial minorities (non-white) is 3.960. Its significance value is .047, which is statistically significant (Table V). By looking at the contingency table for this variable we have noticed there are more states with below average minority population giving below average percentages of their personal income to charities than any other types of states.

VIII. DISCUSSION AND CONCLUSION

The results of our examination of the contingency tables and maps tend to confirm a geographic pattern of giving associated with a number of social conditions during the Great Recession period. Consistent with the literature

(Vaidyanathan *et al.*, 2011; Forbes and Zampelli, 1997; Will and Cochran, 1995; Ottoni-Wilhelm, 2010; Ottoni-Wilhelm *et al.*, 2007) [12]-[16], we find an association in the maps as well as the Chi-square tests between attendance at religious services and income donated to charities. Similar associations are found between income donated to charities and inequality, supporting notions that philanthropy and inequality are related (Laskowski, 2011; Greve, 2009; Dasgupta and Kanbur, 2011) [17]-[19]. Regarding this variable, we believe there is a “home region” effect (Muller and Whiteman, 2009) [2] or proximity effect (Gilbert, 2009) [35], where landscapes of inequality and unhappiness are associated with people more actively making donations to charities. This kind of situation supports the argument that proximity to others in similar (unhappy) circumstances promotes generosity. Based on the chi-square analysis results, states with above average elderly populations are not related to income donated to charity.

Despite the close fit of a number of our included variables, the study contains limitations. First, the nature of the data does not allow analysis beyond measures of association. The next limitation of our data is the IRS data itself. While the IRS data set has the advantage of a national database, it contains a significant limitation because it combines two very distinct types of giving, tithes and secular giving. IRS data on income donated to charities does not distinguish between income donated directly to the household’s church in the form of tithes and income donated for more secular charity activities. For this reason, states with more denominations that tended to tithe appear to be more generous in their giving. Because we cannot distinguish between tithes and secular giving, we cannot determine if increased giving is the result of greater expectations of the specific religious denomination for contributions to the church or more charitable feelings for other reasons. For some like Regnerus *et al.* (1998, p. 488) [9], religious commitment increases charity. “Those who are non-religious are significantly less likely to give to organizations assisting the poor than those who are religious” (Regnerus *et al.*, 1998, p. 488) [9]. Forbes and Zampelli (1997) [13] also tend to suggest that those who tithe tend to give more in general. Contrasting with these views, *The Chronicle of Philanthropy* website provides a map of giving “when religion is taken out of the picture” (Chronicle of Philanthropy, 2012a) [36]. According to the Chronicle’s map, the Northeast gives the most while the South and Midwest contributes the least when religion is taken into account in the analysis. Because the data does not allow the disentangling of tithes from giving, further research is necessary to differentiate between the types of giving.

While this study confirms earlier work associating religiosity with giving, it also introduces new social conditions that add to the understanding of the geography of giving during the Great Recession in the U.S. The inclusion of inequality and happiness provides an added dimension that suggests a greater complexity in the geography of giving. Regions of the United States, particularly the South, that are more inequitable and are less happy tend to give a greater share of their income to charity. The American South has some of the poorest states in the nation, but maps and statistics presented here suggest great involvement of its population in charitable giving; a fact that does not contradict

similar findings in other parts of the world. For example, a study conducted in the United Kingdom found that “richer givers still give much less as a share of their total spending than poorer givers” (Cowley *et al.* 2011, p. 42) [20]. These relationships suggest an expansion of the research in the regional patterns of caring and, more specifically, philanthropic giving.

Given that inequality and unhappiness are associated with giving along with religiosity, further research may be derived from the oft-quoted phrase by Karl Marx (1975, p. 39, italics in original) [37], “*Religious* distress is, at the same time, the *expression* of real distress and also the *protest* against real distress. Religion is the sigh of the oppressed creature, the heart of a heartless world, just as it is the spirit of spiritless conditions. It is the *opium* of the people.” Since we did find similar overlapping associations of income donated to charity, religious attendance, inequality and unhappiness, perhaps further research is necessary to analyze the associations between inequality, unhappiness and religiosity. Is it truly religiosity that gives rise to greater giving, or is it the social conditions that promote religiosity as well as giving? The association between religiosity and giving may be spurious given they both may arise from underlying social conditions. Further research is necessary to address these relationships.

As with *The Chronicle of Philanthropy* (Chronicle of Philanthropy, 2012a) [36] article, our research shows that there are definite distinguishable geographic patterns of philanthropic giving associated with certain socioeconomic conditions. Philanthropic giving tends to be associated with those states with above average religious attendance. Inequality and unhappiness appear to be greater in those states also associated with giving. Interestingly, *The Chronicle of Philanthropy* released during the fall of 2014 findings of a more recent study about generosity, in which they point out two interesting observations that in some ways concur with the results of our analysis:

1. “The wealthiest Americans are giving a smaller share of their income to charity, while poor and middle-income people are digging deeper into their wallets” (Daniels and Narayanswamy, January 13, 2015) [38]. This finding also concurs which the British study that points out that “richer givers still give much less as a share of their total spending” than individuals from a lower socio-economic status (Cowley *et al.* 2011, p. 42) [20].
2. Researchers from the Chronicle learned from nonprofit leaders that “it was the loyalty of people with low and moderate incomes that sustained them in the roughest periods of the economy and is continuing to do so now in the recovery” (Daniels and Narayanswamy, January 13, 2015) [38].

However, our study deals with aggregated data at the state level for 2008 (the data about happiness is more recent 2011), while the Chronicle uses 2006, 2008, and 2012 ZIP-code data. Despite the fact that their research of philanthropic giving is established with respect to religiosity and inequality like parts of our study, their research is less well developed in areas pertinent to age of population, unhappiness, and race and ethnicity. Future research could begin to probe more deeply into the distinct types of giving and the complexity of the relationships between religiosity and underlying social conditions.

REFERENCES

- [1] J. Marx and V. Carter, "Factors influencing U.S. charitable giving during the great recession: Implications for nonprofit administration," *Administrative Sciences*, vol. 4, pp. 350-372, August 2014.
- [2] A. Muller and G. Whiteman, "Exploring the geography of corporate philanthropic disaster response: A study of fortune global 500 firms," *Journal of Business Ethics*, vol. 84, pp. 589-603, February 2009.
- [3] H. Hurd, C. Mason, and S. Pinch, "The geography of corporate philanthropy in the United Kingdom," *Environment and Planning C: Government and Policy*, vol. 16, pp. 3-24, February 1998.
- [4] E. Gipple. (August 19, 2012). How the chronicle compiled its look at giving across America. *Philanthropy*. [Online]. Available: <http://philanthropy.com/article/How-The-Chronicle-Compiled-Its/133667/>
- [5] V. Lawson, "Instead of radical geography, how about caring geography?" *Antipode*, vol. 41, pp. 210-213, January 2009.
- [6] K. Armstrong, *Twelve Steps to a Compassionate Life*, New York: Anchor Books, 2011, pp. 3-23.
- [7] C. Milligan, "Bearing the burden: Towards a restructured geography of caring," *Area*, vol. 32, pp. 49-58, March 2000.
- [8] J. Wolpert, "The geography of generosity: Metropolitan disparities in donations and support for amenities," *Annals of the Association of American Geographers*, vol. 78, pp. 665-679, 1988.
- [9] M. Regnerus, C. Smith, and D. Sikkink, "Who gives to the poor? The influence of religious tradition and political location on the personal generosity of Americans toward the poor," *Journal for the Scientific Study of Religion*, vol. 37, pp. 481-493, September 1998.
- [10] B. Paciotti, P. Richerson, B. Baum, M. Lubell, T. Waring, R. McElreath, and E. Edsten, "Are religious individuals more generous, trusting, and cooperative? An experimental test of the effect of religion on prosociality," *The Economics of Religion: Anthropological Approaches Research in Economic Anthropology*, vol. 31, pp. 269-307, 2011.
- [11] L. Saslow, R. Willer, M. Feinberg, P. Piff, K. Clark, D. Keltner, and S. Saturn, "My brother's keeper? Compassion predicts generosity more among less religious individuals," *Social Psychological and Personality Science*, vol. 4, pp. 31-38, April 2012.
- [12] B. Vaidyanathan, J. Hill, and C. Smith, "Religion and charitable financial giving to religious and secular causes: Does political ideology matter?" *Journal for the Scientific Study of Religion*, vol. 50, pp. 450-469, September 2011.
- [13] K. Forbes and E. Zampelli, "Religious giving by individuals," *American Journal of Economics and Sociology*, vol. 56, pp. 17-30, January 1997.
- [14] J. Will and J. Cochran, "God helps those who help themselves? The effects of religious affiliation, religiosity, and deservedness on generosity toward the poor," *Sociology of Religion*, vol. 56, pp. 327-338, October 1995.
- [15] M. Ottoni-Wilhelm, "Giving to organizations that help people in need: Differences Across denominational identities," *Journal for the Scientific Study of Religion*, vol. 49, pp. 389-412, September 2010.
- [16] M. Ottoni-Wilhelm, P. Rooney, and E. Tempel, "Changes in religious giving reflect changes in involvement: Age and cohort effects in religious giving, secular giving, and attendance," *Journal for the Scientific Study of Religion*, vol. 46, pp. 217-232, June 2007.
- [17] K. Laskowski, "Philanthropy and Inequality: What's the Relationship?" *Responsive Philanthropy*, pp. 6-9, 2011.
- [18] F. Greve. (May 19, 2009). America's poor are its most generous givers. *McClatchy*. [Online]. Available: <http://www.mcclatchydc.com/2009/05/19/68456/americas-poor-are-it-s-most-generous.html>
- [19] I. Dasgupta and R. Kanbur, "Does Philanthropy reduce inequality?" *Journal of Economic Inequality*, vol. 9, pp. 1-21, March 2011.
- [20] E. Cowley, T. McKenzie, C. Pharoah, and S. Smith, *The New State of Donation: Three Decades of Household Giving to Charity 1978-2008*, University of Bristol: Centre for Market and Public Organization, 2011.
- [21] N. Ferguson, *The Great Degeneration: How Institutions Decay and Economies Die*, New York: Penguin Books, 2013, pp. 117-122.
- [22] A. Alesina, R. Baqir, and W. Easterly, "Public goods and ethnic divisions," *Quarterly Journal of Economics*, vol. 114, pp. 1243-1284, November 1999.
- [23] The Chronicle of Philanthropy. (August 19, 2012). How America gives: Exploring Philanthropy in your state, city, and neighborhood. *Philanthropy*. [Online]. Available: <http://philanthropy.com/article/How-The-Chronicle-Compiled-Its/133667/>
- [24] B. D. Dent, *Cartography: Thematic Map Design*, 3rd ed. Dubuque, IA: Wm. C. Brown, 1993.
- [25] Internal Revenue Services. (2012). Tax statistics. [Online]. Available: <http://www.irs.gov/uac/Tax-Stats-2>
- [26] Pew Forum on Religion and Public Life, *U.S. Religious Landscape Survey Religious Affiliation: Diverse and Dynamic*, Washington, D.C.: Pew Research Center, 2008.
- [27] A. Noss, *Household Income for States: 2008 and 2009*, Washington, DC: U.S. Department of Commerce, 2010.
- [28] L. Mitchell, M. Frank, K. Harris, P. Dodds, and C. Danforth, "The geography of happiness: Connecting Twitter sentiment and expression, demographics, and objective characteristics of place," *PLoS ONE*, vol. 8, pp. 1-20, May 2013.
- [29] *2007 Population Estimates*, Census Bureau, U. S. Department of Commerce, 2008.
- [30] *2010 Decennial Census*, Census Bureau, U. S. Department of Commerce, 2010.
- [31] ESRI. (2014). ArcGIS 10.1. United States: Environmental Systems Research Institute. [Online]. Available: <http://www.esri.com/legal/copyright-trademarks>
- [32] M. de Smith, M. Goodchild, and P. Longley. (2013). Geospatial analysis: A comprehensive guide to principles, techniques and software tools. *Spatial Analysis*. [Online]. Available: http://www.spatialanalysisonline.com/HTML/?classification_and_clustering.htm
- [33] B. H. Cohen and R. B. Lea, *Essentials of Statistics for the Social and Behavioral Sciences*, Hoboken, NJ: John Wiley & Sons, 2004.
- [34] W. Norton, *Cultural Geography: Themes, Concepts, and Analyses*, Don Mills, Ontario: Oxford University Press, 2000, pp. 114-213.
- [35] P. Gilbert, *The Compassionate Mind: A New Approach to Life's Challenges*, Oakland, CA: New Harbinger Publications, 2009, p. 133.
- [36] The Chronicle of Philanthropy. (2012a, August 19, 2012). Faith and Giving. *Philanthropy*. [Online]. Available: <http://philanthropy.com/article/FaithGiving/133611/>
- [37] K. Marx, *On Religion*, Moscow: Progress Publishers, 1975.
- [38] A. Daniels and A. Narayanswamy. (January 13, 2015). The income-inequality divide hits generosity. *Philanthropy* [Online]. Available: <http://philanthropy.com/article/The-Income-Inequality-Divide/149117/>



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