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# National Trends in Food Insecurity and Congregation-Based Food Provision between 1998 and 2012

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## ABSTRACT

Food insecurity has been a persistent problem in the U.S., and yet over the past three decades, federally funded food programs have become more restrictive. Scholars and policymakers have inquired whether the nonprofit sector is increasing its food provision activities to address this unmet need. This study analyzes data from the U.S. Census and a nationally representative survey of religious congregations in the U.S. to examine trends in food insecurity and congregation-based food provision between 1998 and 2012. The objective of the study is to investigate the extent to which congregation-based food provision fluctuated with national food insecurity prevalence for the overall population, and for subgroups vulnerable to this condition. Results show an over-time correspondence between the prevalence of food-insecure households and the prevalence of congregations that provide food. Parallel patterns are observed between food insecurity in disproportionately affected subpopulations (e.g., African-Americans and immigrants) and food provision in the congregations likely to serve those households. These findings indicate that congregations are helping meet the needs of food-insecure households. However, research suggests that congregations and nonprofits are not an adequate substitute for federally funded programs. Policy recommendations include expanding access to federally funded programs like the Supplemental Nutrition Assistance Program (SNAP) to more immigrants and other groups vulnerable to food insecurity, as well as providing more systematic financial or federal support and quality control of congregation-based efforts.

## KEYWORDS

Food security;  
congregations; food-  
provision programs;  
vulnerable populations

## Introduction

Food insecurity – lacking consistent access to enough food to support an active, healthy life – is associated with poverty and several negative outcomes related to health, education attainment, and social mobility (Alaimo, Olson, and Frongillo 2001, 2002; Bradley et al. 2018; Carmichael et al. 2007; Gundersen, Kreider, and Pepper 2011; Heflin, Siefert, and Williams 2005; Lee and Frongillo 2001; Seligman

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et al. 2007). The U.S. Department of Agriculture (USDA) has been tracking the prevalence of food insecurity among U.S. households since 1995. Between 1995 and 2007, the percentage of food-insecure households hovered between 10% and 12%. Following the Great Recession (December 2007 to June 2009) (The National Bureau of Economic Research 2010), the prevalence of household food insecurity increased to over 14% and remains above pre-Great Recession levels (U.S. Department of Agriculture 2016; Wolf and Morrissey 2017).

Household food insecurity disproportionately affects certain subgroups. For example, African-American households are more than twice as likely to be food-insecure as white households (Coleman-Jensen et al. 2016a; Feeding America 2015). Specifically, between 1998 and 2012, the percentage of African-American households experiencing food insecurity remained over 20% and was consistently double the national average (Cohen, B., J. Parry, and K. Yang. 2002. Household Food Security in the United States 1998; Coleman-Jensen, Nord, and Singh 2013; Nord, Andrews, and Carlson 2007). Other groups such as immigrants, very-low-income households, and those in urban areas have also consistently experienced rates of food insecurity above the national average (Anderson et al. 2014; Borjas 2004; Capps et al. 2009; Coleman-Jensen et al. 2016a; Hadley, Patil, and Nahayo 2010).

Several federally funded programs are designed to address food insecurity by providing benefits to food-insecure households. However, not everyone experiencing food insecurity is eligible for these programs, and some that are eligible do not access them (Alaimo, Olson, and Frongillo 2002; Gray Farson, Fisher, and Lauffer 2016). For example, while the Supplemental Nutrition Assistance Program (SNAP, formerly the Food Stamp Program) reduces household food insecurity (Cook and Frank 2008; Gundersen, Kreider, and Pepper 2011), the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA) restricted eligibility criteria for SNAP by lowering the income threshold and excluding certain groups. Immigrants, in particular, initially faced some of the most stringent eligibility requirements. Undocumented immigrants are not eligible for SNAP, and even immigrants who entered the U.S. legally after 1996 were banned for their first five years of living in the U.S. from receiving federally funded benefits like SNAP (Fortuny and Chaudry 2012). Additionally, because states could avoid adhering to federal eligibility requirements by fully funding their own programs, state-level variation added another layer to an already complex system of benefit administration (Fortuny and Chaudry 2012). Accordingly, lack of information about eligibility is among the top reasons for household nonparticipation in SNAP (United States Department of Agriculture 2012). One study found that 69% of eligible nonparticipants would apply for SNAP benefits if they understood that they were eligible (Bartlett and Burnstein 2004).

Other federally funded programs, such as the Temporary Emergency Food Assistance Program, address food insecurity indirectly by providing emergency food and nutrition assistance to individual states. These programs distribute food through regional food banks and local agencies, which are then distributed to

emergency food providers such as soup kitchens, food pantries, and shelters (Daponte and Bade 2006; Mabli et al. 2010). Research indicates that food-insecure households are becoming more reliant on these types of food providers (Berner and O'Brien 2004). Although data on emergency food providers are limited, two studies found that the majority of such providers are faith-based agencies affiliated with congregations and other religious organizations (Mabli et al. 2010; Weinfield et al. 2014). Others have found food pantries are a common service provided by congregations (Cnaan and Boddie 2001; Fulton 2016a). Congregations may be particularly engaged in providing food, because many religious traditions have a long history of engaging in this type of service (Chavez and Williams 2001; Fulton 2016b; Ley 2008; Wineburg 1992). Congregation-based food provision programs may also be less strict with eligibility criteria than governmental programs, since clients are often not required to provide information on income or citizenship status to receive assistance (Daponte and Bade 2006). This lack of eligibility requirements potentially makes their services more accessible to a larger number of households experiencing food insecurity (Eisinger 2002; Feeding America 2010), and there is evidence that congregations serve as alternative social services providers (Cnaan, Sinha, and McGrew 2004). However, there is a dearth of research that provides quantitative evidence of the extent to which congregations may be alleviating food insecurity through congregation-based food provision programs.

In light of the persistence of food insecurity in the U.S. and the federal government's reduced involvement with alleviating food insecurity directly since 1996, the objective of this study is to examine congregations' participation in providing food assistance. Three waves of data from a nationally representative, cross-sectional survey of religious congregations were used, which measured congregations' involvement in food provision programs between 1998 and 2012. It is expected that the percentage of congregations providing food fluctuates with the percentage of food-insecure households in the U.S. The reason for expecting such a correspondence is because, as noted above, not all needy households are eligible for or participate in federally-funded food assistance programs (e.g., SNAP), and congregations' emergency food provision efforts may be sensitive to these unmet needs. Furthermore, the over-time correspondence is expected to hold among subsets of congregations serving immigrant, African-American, urban, and low-income communities, which are known to have higher rates of food insecurity and/or limited eligibility for federal food assistance programs. To our knowledge, this is the first published study to test these expectations by analyzing a nationally representative sample of congregations over a period of three decades.

## Methods

To examine trends in congregation-based food provision programs, this study analyzes three waves of secondary data from the National Congregations Study

(NCS) (Chaves, Anderson, and Eagle 2014). The NCS is a nationally representative, repeated cross-sectional survey of religious congregations in the United States. The NCS surveyed the leader of each congregation in the sample to gather extensive data on the congregations' composition, practices, and programs. The surveys were completed via structured interviews – either in person or over the phone. The NCS's three waves of data collection occurred in 1998 ( $n = 1,234$  congregations), 2006–2007 ( $n = 1,506$  congregations), and 2012 ( $n = 1,331$  congregations). The response rate across the three waves ranges from 73% to 80%. See Chaves (2017) for a detailed description of the NCS data and methods.

The analysis uses the following NCS survey item to assess congregations' participation in food provision programs. During the structured interview, each congregational leader was asked to indicate whether his or her congregation had participated in or supported social service projects of any sort within the past 12 months.<sup>1</sup> If the leader indicated that their congregation provides social service programs, the interviewer asked the leaders to describe each program in an open-ended manner.<sup>2</sup> For each program the leader mentioned, the interviewer probed for its purpose and recorded the verbatim descriptions provided by the leader. These verbatim descriptions were coded into a set of non-mutually-exclusive binary variables, each one indicating a specific type of service area or focus. These variables indicate congregational participation in a wide variety of social service arenas, including clothing, health, housing, education, immigration, and food provision. Two coders independently coded each verbatim response, with disagreements resolved by a referee. All of these variables are included in the NCS's publicly available dataset. This study focuses on the variable indicating whether the congregation participates in a food provision program.

In addition to assessing participation trends among the entire population of U.S. congregations, this study examines trends among subpopulations of congregations based on their ethnoracial composition, community context, and whether they specifically serve immigrants. The categories for the ethnoracial composition of a congregation are based on whether at least 80% of its regular participants are of the same race or ethnicity (e.g., predominantly African-American). To identify characteristics of the community context in which a congregation is located, the analysis uses the following three NCS variables derived from U.S. Census data, which indicate whether: 1) at least 30% of the people in the congregation's census tract have incomes below the Federal Poverty Level; 2) at least 80% of the people in the congregation's census tract are African-American; and 3) the congregation's census tract is predominantly urban, suburban, or rural. The analysis codes a congregation as serving immigrants if, in response to the social service item described above, the congregation mentioned providing aid to immigrants as one of its service areas.

To assess whether changes in the percentage of congregations participating in food provision correspond to changes in the percentage of food-insecure households in the U.S., this study analyzes data from the Current Population Survey's Food Security Supplement (CPS-FSS) conducted in 1998, 2006, and 2012 (U.S. Census Bureau 2016). The CPS-FSS surveys approximately 50,000 households each year and is representative of the civilian, noninstitutionalized population in the U.S. The CPS-FSS measures food security using responses to a series of questions about conditions and behaviors that characterize households when they are having difficulty meeting basic food needs (Coleman-Jensen et al. 2016b). The questions ask how often the condition or behavior occurred during the previous 12 months due to inadequate resources for food provision. The USDA uses the responses to these questions to classify the food security status of each interviewed household. Households are coded as "food secure" if they report less than three affirmative responses and "food insecure" if they report three or more affirmative responses (Coleman-Jensen et al. 2016b). The CPS-FSS also includes information on household characteristics, **which enables analyses to examine food insecurity based on ethnoracial composition, income, and immigrant status.**<sup>3</sup> **Table 1 displays the distribution of food insecure households in the U.S. in 1998, 2006, and 2012 by race/ethnicity, community context, and country of origin.**

The analyses examine whether there is an over-time correspondence between the prevalence of food-insecure households in the U.S. and the prevalence of food-providing congregations. The first analysis uses the CPS-FSS data to plot the percentage of food-insecure households in the U.S. in 1998, 2006, and 2012 and uses the NCS data to plot the percentage of congregations participating in food provision programs during those same years. An over-time correspondence is assessed by comparing the trend lines for food-insecurity levels and congregation-based food provision programs between 1998 and 2012. Subsequent analyses generate similar graphs for subpopulations of U.S. households that tend to have higher rates of food insecurity and the corresponding subpopulations of U.S. congregations that

**Table 1.** Distribution of food insecure households in the U.S. in 1998, 2006, and 2012.

Percentage of...	1998	2006	2012
Households that are food insecure	11.8%	10.9%	14.5%
White households that are food insecure	8.3%	7.8%	11.2%
African-American households that are food insecure	24.3%	21.8%	24.6%
Latino households that are food insecure	25.0%	19.5%	23.3%
Households in urban areas that are food insecure	16.4%	13.2%	16.9%
Households in suburban areas that are food insecure	9.3%	9.0%	12.7%
Households in rural areas that are food insecure	11.9%	12.0%	15.5%
Very low income households that are food insecure	38.1%	36.3%	40.9%
U.S. born households that are food insecure	11.3%	10.6%	14.0%
Immigrant households that are food insecure	16.8%	13.4%	17.4%

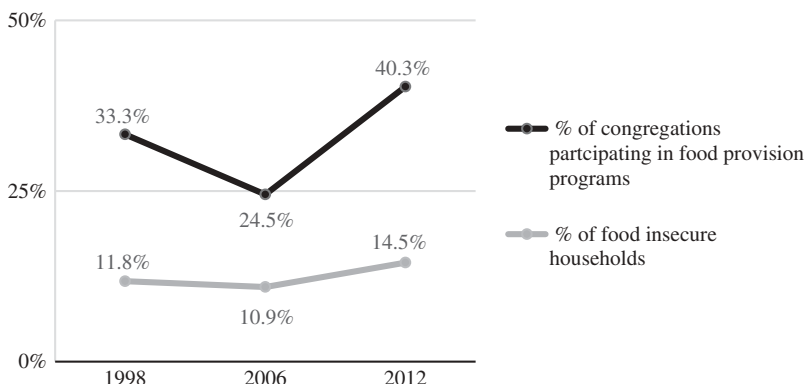
Source: Current Population Survey's Food Security Supplement (U.S. Census Bureau 2016)

are likely to serve those households. All of the analyses in this study use the NCS congregation-level weights.<sup>4</sup>

## Results

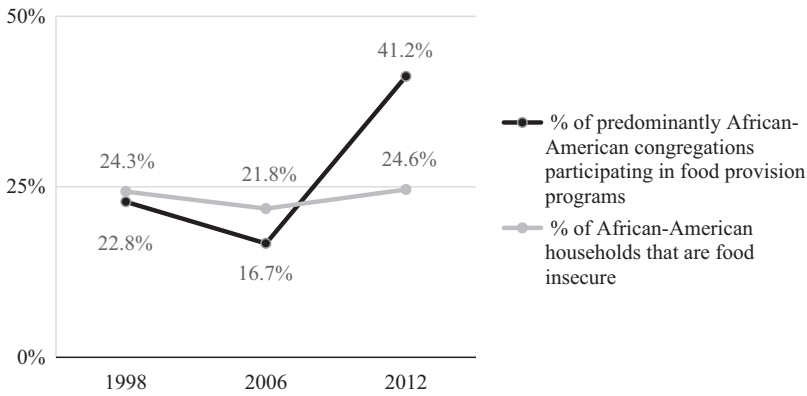
The graph in [Figure 1](#) plots the percentage of food-insecure households in the U.S. in 1998, 2006, and 2012 and the percentage of congregations in the U.S. participating in food provision programs during those same years. The graph shows an over-time correspondence between the prevalence of food-insecure households and the prevalence of food providing congregations. The percentage of food-insecure households decreased from 11.8% to 10.9% between 1998 and 2006 and then increased to 14.5% in 2012. During this same time period, a parallel pattern is observed for the percentage of congregations involved in providing food. Between 1998 and 2006, the percentage of congregations participating in food provision programs decreased from 33.3% to 24.5% and then increased to 40.3% in 2012.

Similar patterns are observed among subpopulations of U.S. households that tend to have higher rates of food insecurity and the corresponding subpopulations of U.S. congregations that are likely to serve those households. The graph in [Figure 2](#) plots the percentage of food-insecure African-American households in 1998, 2006, and 2012 and the percentage of predominantly African-American congregations participating in food provision programs during those same years. The percentage of food-insecure African-American households decreased from 24.3% to 21.8% between 1998 and 2006 and then increased to 24.6% in 2012. During this same time period, the percentage of predominantly African-American congregations participating in food provision programs decreased from 22.8% to 16.7% between 1998 and 2006 and then increased to 41.2% in 2012. A similar pattern is observed

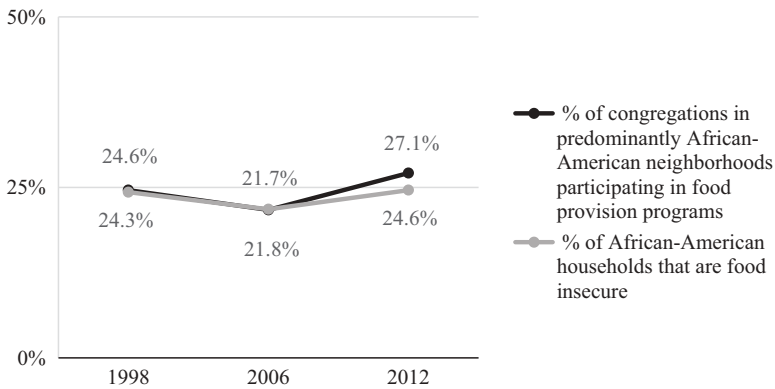


**Figure 1.** Trends in the percentage of food insecure households in the U.S. and the percentage of congregations in the U.S. participating in food provision programs in 1998, 2006, and 2012.





**Figure 2.** Trends in the percentage of African-American households that are food insecure and the percentage of predominantly African-American congregations participating in food provision programs in 1998, 2006, and 2012.

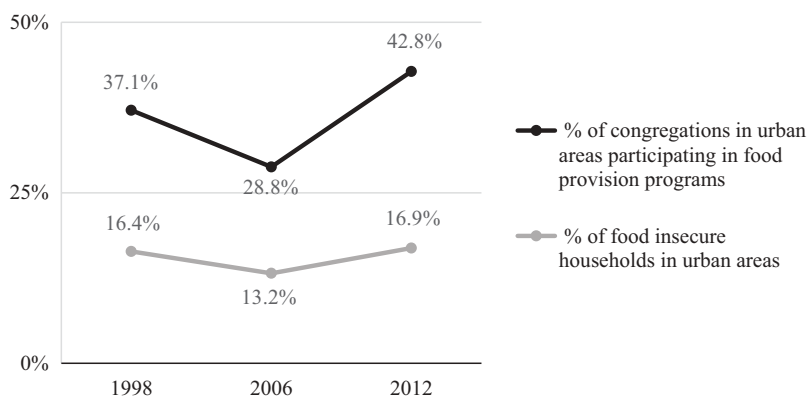


**Figure 3.** Trends in the percentage of African-American households that are food insecure and the percentage of congregations in predominantly African-American neighborhoods participating in food provision programs in 1998, 2006, and 2012.

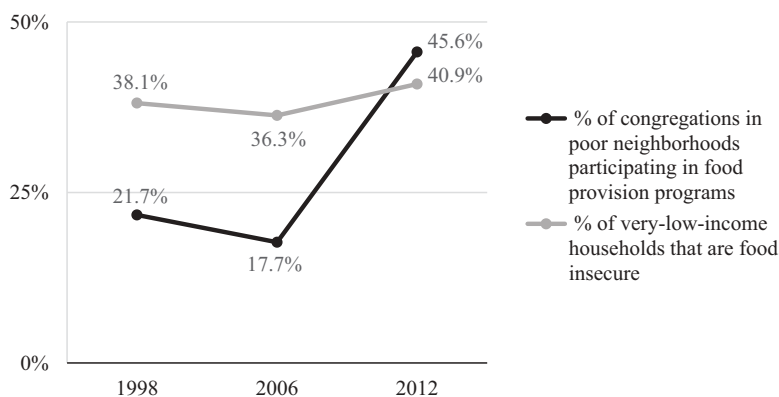
among congregations located in predominantly African-American neighborhoods. The graph in Figure 3 indicates that the percentage of congregations in predominantly African-American neighborhoods participating in food provision programs decreased from 24.6% to 21.7% between 1998 and 2006 and then increased to 27.1% in 2012.

Figure 4 displays the parallel trend for households and congregations in urban areas. The percentage of food-insecure households in urban areas decreased from 16.4% to 13.2% between 1998 and 2006 and then increased to 16.9% in 2012. During this same time period, the percentage of congregations in urban areas participating in food provision programs decreased from 37.1% to 28.8% between 1998 and 2006 and then increased to 42.8% in 2012.





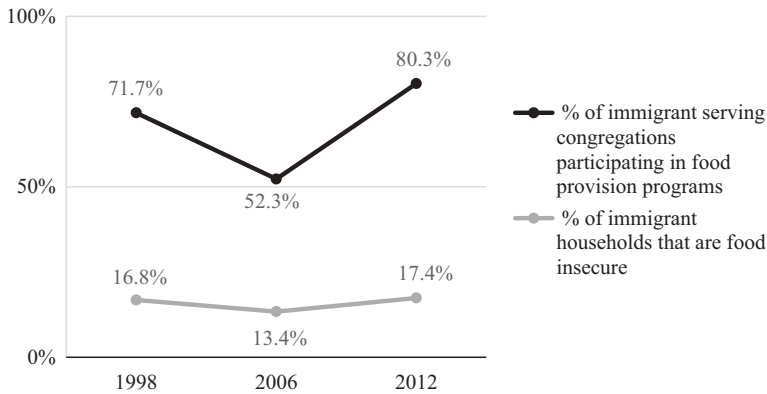
**Figure 4.** Trends in the percentage of food insecure households in urban areas and the percentage of congregations in urban areas participating in food provision programs in 1998, 2006, and 2012.



**Figure 5.** Trends in the percentage of very-low-income households (i.e., households with incomes below the Federal Poverty Level) that are food insecure and the percentage of congregations in poor neighborhoods participating in food provision programs in 1998, 2006, 2012.

The graph in [Figure 5](#) plots the percentage of very-low-income households (i.e., households with incomes below the Federal Poverty Level) that are food insecure and the percentage of congregations in poor neighborhoods participating in food provision programs. The percentage of very-low-income households that are food insecure decreased from 38.1% to 36.3% between 1998 and 2006 and then increased to 40.9% in 2012. During this same time period, the percentage of congregations in poor neighborhoods participating in food provision programs decreased from 21.7% to 17.7% between 1998 and 2006 and then increased to 45.6% in 2012.

[Figure 6](#) displays the parallel trend for immigrant households (**i.e. not U.S. born**) and congregations that serve immigrants. The percentage of immigrant households that are food insecure decreased from 16.8% to 13.4% between 1998 and 2006 and then increased to 17.4% in 2012. During this same time



**Figure 6.** Trends in the percentage of immigrant households (i.e. not U.S. born) that are food insecure and the percentage of immigrant serving congregations participating in food provision programs in 1998, 2006, and 2012.

period, the percentage of immigrant-serving congregations participating in food provision programs decreased from 71.7% to 52.3% between 1998 and 2006 and then increased to 80.3% in 2012. Comparing this graph to the graphs in the previous figures indicates that immigrant **households have higher levels of food insecurity compared to the national average** and congregations that serve immigrants are among the most likely to participate in food provision programs.

In summary, the analysis indicates an over-time correspondence between the prevalence of food-insecure households and the prevalence of food providing congregations in 1998, 2006, and 2012. The analysis also indicates parallel patterns between food insecurity in subpopulations of U.S. households that tend to have higher rates of food insecurity and food provision programs in the congregations that are likely to serve those households. Meanwhile, the government's relative involvement in food provision has been declining and the percentage of food-insecure households receiving assistance from programs like SNAP has been decreasing (Anderson 2013; Berner and O'Brien 2004; Oliveira 2017).

## Discussion

To our knowledge, this is the first study to compare national trends in the prevalence of food insecurity with congregation-based food provision programs in the U.S. This study finds that across the data collection points of 1998, 2006, and 2012, trends in the percentage of congregations participating in food provision programs corresponded with trends in the percentage of food-insecure households in the U.S. Specifically, as the percentage of food-insecure households decreased between 1998 and 2006, the percentage of congregations providing food also decreased. Then, between 2006 and 2012, as the percentage

of food-insecure households increased, the percentage of congregations providing food also increased. These findings provide evidence that congregations' involvement in food provision is sensitive to the food needs of their surrounding communities. This is important knowledge, as congregation-based food provision programs could partly supplement inadequate direct programming like SNAP. However, congregations' food programs are largely dependent on private donations and food that comes from regional food banks, the latter of which rely partly on federally funded programs such as the Temporary Emergency Food Assistance Program (Chaves and Eagle 2016). Thus, congregations' ability to meet the food insecurity needs of their communities may be constrained by these other factors.

This study also examines the rates of involvement in food provision among congregations that serve subpopulations known to have high rates of food insecurity. For example, we find that predominantly African-American congregations and congregations in predominantly African-American neighborhoods are consistently among the types of congregations with the highest rates of involvement in food provision. Furthermore, the percentage of predominantly African-American congregations involved in food provision more than doubled between 2006 and 2012. Yet, a similar drastic increase was not observed among congregations in predominantly African-American neighborhoods. This difference raises a question as to who is being served by the food programs of African-American congregations. Due to demographic shifts affecting many urban areas, the racial/ethnic composition of urban congregations do not always match those of their neighborhoods (Kinney and Combs 2016; McRoberts 2003). For example, over the past several decades, the population in South Los Angeles has shifted from majority African-American to majority (mostly immigrant) Latino, yet even as African-American congregants move out of the neighborhood, their churches often remain in the neighborhood and become commuter churches that provide services (e.g., food pantries) to non-congregant community residents (Martinez 2016). Nationally, the past two decades have seen an unprecedented geographic dispersion of the U.S. Latino population, away from traditional destinations to new destinations, particularly in the Upper Midwest and the South (Frey 2005; Gresenz et al. 2012). Future research could examine the extent to which predominantly African-American congregations' food provision programs are serving Latinos (particularly immigrants) and other groups.

Regarding urban areas, there is a correspondence between the percentage of food-insecure households in urban areas and the percentage of urban congregations providing food. Given the high rates of food insecurity among households in urban areas, future research could investigate how urban congregations are addressing food insecurity needs and whether they are adopting innovative practices such as creating urban community gardens.

Given that food insecurity is a poverty-related condition, it is not surprising that congregations in poor neighborhoods participate in food provision

programs. More remarkable is that congregation-based food provision in poor neighborhoods doubled between 2006 and 2012. This sharp increase may be a response to the degree of food insecurity experienced in such communities. Studies have found a growing reliance on emergency food providers among very-low-income households, even among those that receive SNAP benefits (Berner and O'Brien 2004; Chhabra, Falciglia, and Lee 2014; Weinfield et al. 2014). Data indicate that very-low-income households obtain food from such providers on a regular basis rather than only during times of acute need (Weinfield et al. 2014). Consequently, more research is needed to understand the dynamics affecting food provision in poor neighborhoods and the ways very-low-income households use congregation-based food programs.

Lastly, immigrant households have higher food insecurity compared to the national average, and we find that immigrant-serving congregations are among the most likely to be involved in providing food. In 2012, over 80% of such congregations had a food provision program. We interpret this finding in the context of the policy changes that substantially restricted immigrants' access to federally sponsored food-related benefits (e.g., SNAP) beginning with PRWORA in 1996. Indeed, studies indicate a decrease in SNAP enrollment among immigrants after 1996 (National Academies of Sciences, Engineering, and Medicine, 2016), and despite efforts to restore eligibility among certain groups of immigrants (e.g., those under 18 who lived in the U.S. prior to PRWORA), participation rates among food-insecure immigrant households remain substantially lower than the national average (Eslami 2014; Potochnick 2016). There is also evidence that immigrant-serving congregations may be particularly focused on social service provision, in an attempt to ameliorate harsh social conditions (Cnaan and Curtis 2013).

As the requirements to be eligible for federal food assistance have become stricter, many food-insecure households have had to rely on alternative sources of food (Schenck-Fontaine, Gassman-Pines, and Hill 2017), and our findings suggest congregations may be a plausible venue given their trends in efforts. However, congregation-based food provision programs tend to be less reliable than federal food assistance programs since most congregations depend on donations and the quantity and quality of food they have available can vary substantially (Berner and O'Brien 2004; Daponte and Bade 2006). A systematic review of studies analyzing food pantry users found low dietary quality, such as lower-than-recommended consumption of fruits, vegetables, dairy, and calcium (Simmet et al. 2016). Future research could assess dietary quality among people who obtain food from congregations since congregations make up a large percentage of emergency food providers, and because congregations can serve as possible intervention sites for the promotion of healthy eating, especially among people experiencing food insecurity.

This study has some limitations that should be noted. First, although PRWORA reduced the number of people who qualified for food benefits, the

NCS does not have data prior to 1996. Thus, this study is unable to assess whether PRWORA led to a greater percentage of congregations participating in food provision programs. Second, given the lack of client-level data in our congregation dataset, this study cannot provide insights at this level, including the degree of food insecurity experienced among those served. Third, the analysis does not include specific details about the scope and scale of congregations' food provision programs, including actual amount of food distributed by congregations engaged in this type of programming. Congregations' involvement in providing food can range from periodically providing meals to congregants who are sick to operating large-scale community food pantries. Future research could examine the effectiveness of such programs – i.e., the extent to which congregations are meeting the food needs of food-insecure households. Lastly, although it would be interesting to identify the types of congregations that stopped distributing food between 1998 and 2006, the cross-sectional data prevents analyses from differentiating between congregations that discontinued food provision and those that were never involved in food provision. The same data limitations also prevent analysts from knowing what types of congregations began (or resumed) food distribution between 2006 and 2012.

Addressing food insecurity is important for enabling people to live active, healthy lives and to achieve better health and socioeconomic outcomes, yet not everyone in the U.S. who is food insecure is eligible to receive federally funded food assistance, leading those in need to turn to other resources that may not be the most effective at reducing food insecurity. Furthermore, policy changes have further restricted access to these programs for certain populations, such as immigrants, that have a high risk of being food insecure. One policy recommendation is to expand access to federally funded programs to more immigrants and other groups vulnerable to food insecurity, because our research indicates that these groups are increasingly using congregation-based food provisions during times of need.

Findings from this study suggest that in response to the government's inadequate efforts to address food insecurity, a growing percentage of congregations, especially those that serve populations disproportionately affected by food insecurity, are providing food assistance. However, persistently high national food insecurity levels suggest that the increased congregational involvement is not sufficient to meet household needs. A second policy recommendation is for the government to examine ways to better meet the needs of its participants through various non-federal programs already established like congregations, food banks and pantries, etc. Further, research could explore the nature of this food assistance, where congregations obtain their food, and who uses their services. Assessing people's use of congregation-based food provision programs is particularly timely given the relatively high levels of food insecurity coupled with the government's limited involvement and ongoing efforts to cut the budgets of federally funded food programs.

## Notes

1. In Waves II and III, if the respondent answered “no” to this question, the interviewer asked follow-up questions to probe into whether the congregation provided any type of social services. For consistency, in order to assess change over time related to this item, Wave II and Wave III responses generated from the follow-up questions were not included in the analysis.
2. In Wave III, congregations that offered four or fewer programs were asked to describe each program. Congregations that offered more than four programs were asked to describe their four most important programs. Among the congregations reporting some social service activity, 27% reported more than four programs. This methodological difference between Wave III and Waves I and II means that for comparison across waves, the percentage of congregations involved in food provision programs in Wave III may be underestimated if some of the congregations that offered more than four programs did not view their food provision program as one of their four most important programs and thus did not report it. However, because the percentage of congregations participating in food provision in Wave III exceeds the percentages in Waves I and II, an underestimation of this statistic in Wave III would not affect the upward trends observed nor the conclusions drawn.
3. the Current Population Survey (CPS) classifies a household based on the attributes of the household reference person. For example, if the household reference person is African-American, the CPS classifies the household as African-American.
4. For all of the analyses in this study, the NCS data are weighted using the following congregation level weight – *wt\_all3\_cong\_dup* – which treats each congregation as one unit regardless of its size. This is the appropriate weight to use when assessing trends among congregations because a congregation’s likelihood of appearing in the NCS sample is proportional to its size and using the congregation level weight undoes the over-representation of larger congregations in the NCS (Chaves, Anderson, and Eagle 2014).

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