The Organizational Structure and Capacity of Emergency Food Assistance Provdiers in the Detroit Metropolitan Area

Laura Sullivan
Evans School of Public Policy and Governance
University of Washington
Seattle, WA 98115, United States
lrsulli@uw.edu

March 15, 2018

Abstract

Food insecurity is an issue facing many households in the United States. It often disproportionately affects already vulnerable populations and often further exacerbates the cycle of poverty. Emergency food assistance programs serve as a key resource for many food insecure persons. However, the complexity of these agencies is not well studied. Despite the prevalence of food pantries, there is relatively little work that seeks to understand how these organizations operate. This report aims to help fill that void by examining the organizational structure and capacity of emergency food assistance providers in the greater Detroit area. Using unique survey data of food pantries in metro Detroit gathered from 2012 to 2013. I found that 90.6 percent of surveyed agencies provide groceries while only 27.5 percent have meal programs. Also, 75.8 percent of agencies provide non-food related benefits such as help with housing or counseling services. This result depicts the role food pantries play in the larger safety net.

1 Data

The data for this report is from a survey of emergency food assistance providers in the Detroit Metropolitan area from 2012 and 2013. The data was collected at the University of Chicago by a trained interviewer who administered the surveys either by phone or via an online survey tool. Survey

questions asked about the organizational characteristics of each agency such as the hours of operation, types of programs offered, and staffing structure. We will also use population data from the American Community Survey from 2010-2014. For the purpose of this report, our analysis will focus on a subset of this data with variables describing the types of programs offered, geographic location, and demographic characteristics.

2   Program Offerings

Sections may use a label[1]. This label is needed for referencing. For example the next section has label *datas*, so you can reference it by writing: As we see in section 3.

Table 1: Distribution of Programs

Offers Meal Program	Frequency
No	170
Yes	74

3   Data analysis

Here you can explain how to get the data:

```
> states=read.csv("https://goo.gl/So48s5")
```

3.1   Exploration

Here, I start exploring the data. The first step is to know what variables I have, and in what scale they are:

```
'data.frame':        51 obs. of  8 variables:
 $ state              : Factor w/ 51 levels "Alabama",""..
 $ satMean            : int  991 920 932 1005 897 959 89..
 $ satDemand          : num  0.08 0.41 0.26 0.06 0.47 0...
 $ k12ExpenditurePupil : int  3627 8330 4309 3700 4491 50..
```

---

[1]In fact, you can have a label wherever you think a future reference to that content might be needed.

```
$ incomeHouseholsMedian: num  27.5 48.3 32.1 24.6 41.7 ...
$ diplomaHsAdults      : num  0.669 0.866 0.787 0.663 0.7..
$ collegeDegreeAdults  : num  0.157 0.23 0.203 0.133 0.23..
$ region               : Factor w/ 4 levels "Midwest","N"..
```

A next step demands:

- Knowing the *central* and *dispersion* values.

- Visualizing the variables of interest.

Except for the column *state*, we can compute the centrality and spread measures for the other variables in the data. I will do that in Table 2 in the next page.

Table 2: Mean and Spread values

Statistic	N	Mean	St. Dev.	Min	Max
satMean	51	944.098	66.935	832	1,093
satDemand	51	0.358	0.262	0.040	0.810
k12ExpenditurePupil	51	5,235.961	1,401.155	2,960	9,259
incomeHouseholdMedian	51	33.957	6.423	23.465	48.618
diplomaHsAdults	51	0.763	0.056	0.643	0.866
collegeDegreeAdults	51	0.200	0.042	0.123	0.333

As you saw, my Table 2 is nice. As you, saw the mean of the variable *satMean* is 944.098039215686. Now let's use a boxplot to explore location:

As we have a categorical variable, we could create a frequency table:

Table 3: Distribution of Region

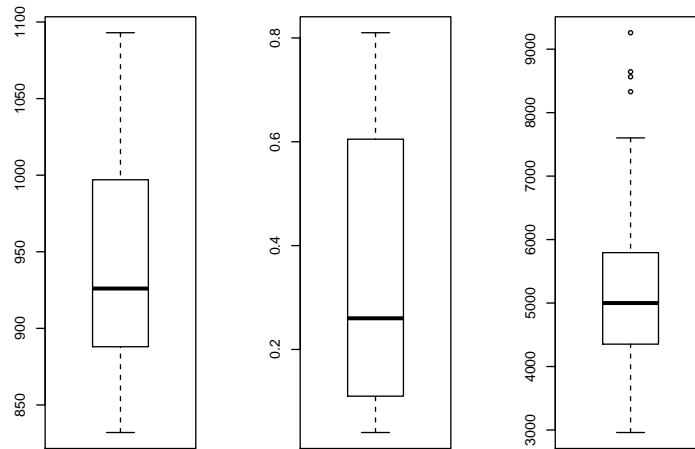| Region	Frequency
Midwest	12
N. East	9
South	17
West	13

Figure 1: Location of values

3.2 Modeling

Here, I propose that the amount of money spent for child per state in the US has an effect on the mean average pupils in a state get in SAT:

```
> reg1=lm(satMean~k12ExpenditurePupil, data = states)
```

Here, I modify the previous model; while I insist that the amount of money spent for child per state in the US has an effect on the mean average pupils in a state get in SAT; I will control the effect the demand per state (as demand were equal accross states). Then,
Model 2:

```
> reg2=lm(satMean~k12ExpenditurePupil+satDemand, data = states)
```

I have the results, but have not display them, let's do it in the coming subsection

3.3 Modeling nicely

What about this:

Table 4: Regression Models

	Dependent variable:	
	satMean	
	(1)	(2)
Dollars per Student	−0.022***	0.009**
	(0.006)	(0.004)
Share taking SAT		−253.770***
		(22.491)
Constant	1,060.732***	989.807***
	(32.701)	(18.396)
Observations	51	51
R^2	0.217	0.786
Adjusted R^2	0.201	0.777
Residual Std. Error	59.814 (df = 49)	31.623 (df = 48)
F Statistic	13.615*** (df = 1; 49)	88.009*** (df = 2; 48)

Note:	*p<0.1; **p<0.05; ***p<0.01

4   Explaining Citations

Citing requires a *bib* file with all the books. You can create it from Zotero, and then add it here with the command *cite*. For example, open the file named 'GovernanceAnalytics' and write the name of the author here.