Who are the Donors?

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Introduction

Asking "You treat which of the natural disasters in Taiwan most seriously?" Most of Taiwanese people will answer EARTHQUAKE. And as we know, it always takes lots of money to recover from natural disasters, so we wonder which variations will affect whether people donate to the victims or not.

As a result, we decided to use a Social Image Survey done by the Academia Sinica after Chi Chi Earthquake (1999) to discuss which type of people tend to make donations.

Method

We organized the "Second Social Image Survey" questionnaire data by Chin-chun Yi, Yang-chih Fu (1999), downloaded from Survey Research Data Archive, Academia Sinica.

The questionnaire collected data by calling home-phones in the damage areas then interview adults between 20 to 70 years old, and collected about a thousand samples finally.

And we used statistical methods to analysis as well as explain the relationships between donation behaviors and status of people.

Collinearity

In order to avoid the problem of collinearity affecting the regression results, we have confirmed that there is no collinearity between the independent variables.

Results

Donors	Regression Coefficients	Odds Ratio
Personal Financial Status	0.9841***	2.6755
Mobile Phone	0.4768***	1.6109
Run out	-0.2571*	0.7733
House Damage	-0.7826***	0.4572
Victim	-0.4387***	0.6449
Constant	0.3831*	1.4668
Pseudo R-squared	0.0779	
N	870	

z statistics in parentheses
*$p < 0.1$, **$p < 0.05$, ***$p < 0.01$
Source: Survey Research Data Archive
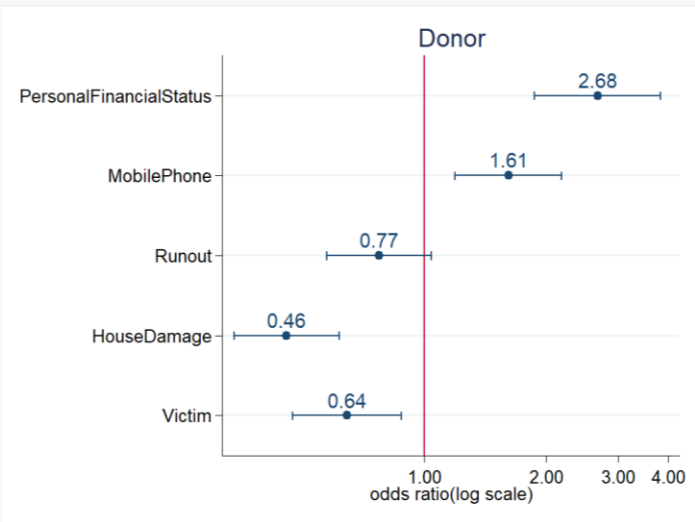
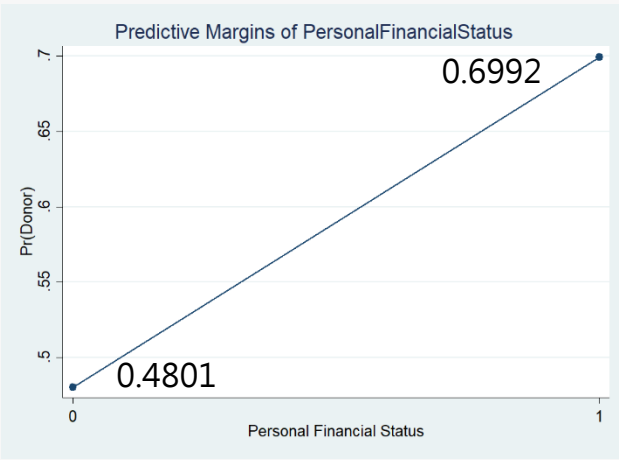
I. Dependent Variable - Donor

For our dependent variable, we separated the interviewees into two groups by whether they donate to the victims; namely, donor or not.

After dropping data with missing values and system errors, their are 870 data that 67% are donors while the other 34% do not donate.

II. Independent Variables - Characteristics (+)

Personal Financial Status

This variable exists positive correlation between personal economics status and donation behavior.

It is obvious that a better economics status leads to higher ability to donate.
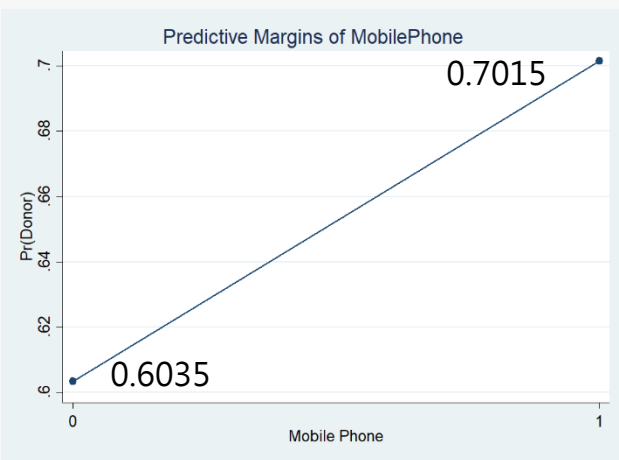
Mobile Phone

This variable is about if interviewees own a cellphone, and there is a positive correlation between them.

However, there exists a serious collinearity between male people and people have cellphone. But the result also shows that female people tend to donate more.

Why? Here we need to use Simpson's paradox to explain it.

Due to Simpson's paradox, the result is actually: "Females who don't own cellphone and males owning cellphones tend to donate to the victims."
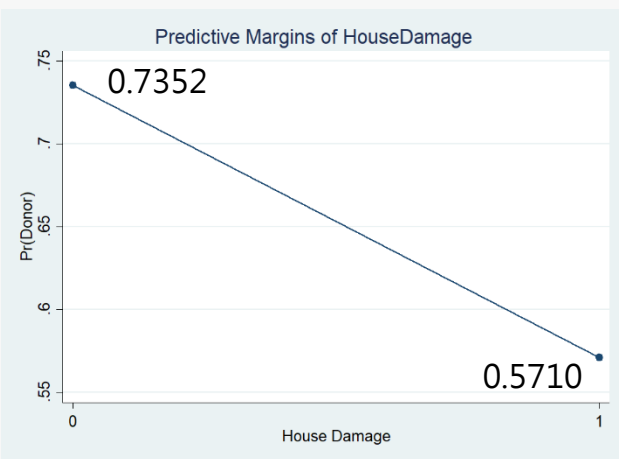
III. Independent Variables - Earthquakes (-)
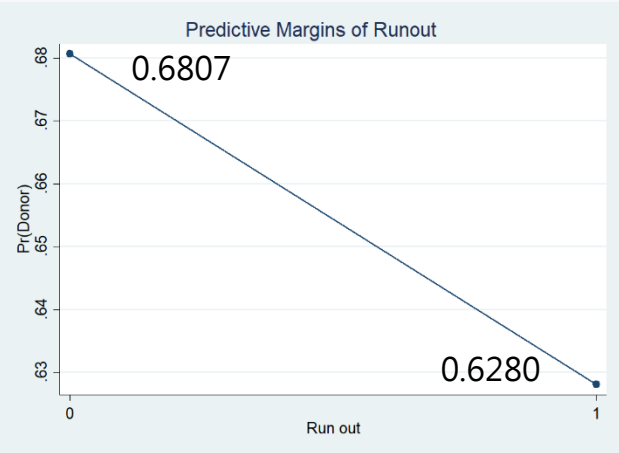
Run out

This variable is about people's first reaction when facing earthquake.

It leads to a negative correlation; and we infer it is because when people feel the quake stronger, they will tend to run out. So people who run out will suffer more loss as well as have less ability to donate.

House Damage

This variable showed negative correlation between house damage (Damage includes cracks and collapses) and donation behavior.

We think it is because if one's house is damaged, he need to spend on fixing and leads to less ability to donate.
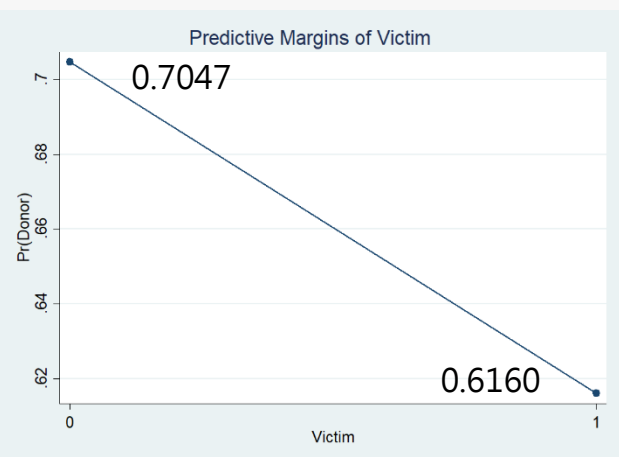
Victim

This variable is about if the interviewees or their close people were determined as victims by the government.

It leads to a negative correlation, since the victims themselves have to deal with their own losses and have less ability to donate.

Conclusion

Through our data analysis, we can clearly know that which type of people tend to make donation after natural disasters. With these data, we may gain more funds for the victims to recover from the damage.

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