

# The Determinants of Private Donations to Humanitarian Disasters

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## Abstract

The aim of this study is to investigate the determinants of private donations to humanitarian disasters. We design a model on donor behaviour consisting of the determinants social distance, need for relief and awareness. To test for the impact of social distance, we use the proxy variables *geographic distance*, *share of Christians* and a *culture index* which is based on Geert Hofstede's cultural dimensions. For the determinant need for relief we use the variables *killed in the disaster* and *GDP per capita* of the disaster stricken country. In order to test for awareness we chose the variable *media coverage*. Data on private donations to humanitarian disasters was collected from the Swedish fundraising organisation Radiohjälpen. Based on the results from our regression analyses, we conclude that awareness of a disaster through media coverage has a significant impact on private donations to humanitarian disaster whereas social distance and need for relief receive mixed support.

**Key words:** Humanitarian disaster, donor behaviour, social distance, media coverage

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*“If he was to lose his little finger tomorrow, he would not sleep tonight; but, provided he never saw them, he will snore with the most profound security over the ruin of a hundred millions of his brethren.”*

Adam Smith (1723-1770)

## 1. Introduction

In *The Theory of Moral Sentiments*, Adam Smith asks his readers to imagine an earthquake swallowing up the whole of China. While “a man of humanity in Europe” would be moved to express his melancholy, he would, Smith argued, ultimately return untroubled to his ordinary life (Smith 1970, p. 215). Whilst Smith did not question the existence of altruism, he was sceptical about its scope or reach. Our sense of solidarity with those who suffer is strongest when we consider someone else as “one of us” where “us” means something smaller and more local than the human race. Smith’s observations can however be regarded as less relevant today than in the 18<sup>th</sup> century. Modern technology has enabled the images and sounds of an earthquake’s devastation to be broadcasted into the living rooms of those on the other side of the world.

But perhaps Smith’s claim is less out of date than what might appear, considering the current debate about how people feel and reason about humanitarian disasters in distant places. The humanitarian catastrophes of the 21st century, such as the 2004 Indian Ocean Tsunami and the tropical cyclone in Burma 2008, have sparked a debate concerning which humanitarian disasters we humans care about and donate money to. Despite the fact that the scale of the two mentioned catastrophes was similar in terms of the number of people affected, many aid organisations in Sweden reported that their relief efforts in Burma received only a fraction of the money donated to the Tsunami stricken countries. Speculation of why this was the case pointed to the fact that 543 Swedes died in the tsunami and that many Swedes had a personal relationship with Thailand, which was the most popular Swedish tourist destination in recent years (Bodin 2008). This explanation compels us to ask whether there are certain boundaries to human generosity.

Although there is an extensive research into the motivations underlying private giving to charitable organisations, few studies have systematically assessed the determining factors behind private donations to humanitarian disasters<sup>1</sup>, based on data from fundraising organisations. The importance of the subject cannot however be mistaken. According to a report from the Centre for Research on the Epidemiology of Disasters (2003), the total number of natural disasters reported each year has been steadily increasing in recent decades, from 78 in 1970 to 348 in 2003. Another report from the World Bank (2005) shows that people are flocking to disaster-prone regions, resulting in an increasing number of people being left injured, displaced or homeless.

In the light of this development it becomes even more important to mobilize resources from all parts of the society to provide humanitarian relief, including private donations to fundraising organisations. Studying private giving is therefore not only an important theoretical contribution to our understanding of donor behaviour. Knowledge about predictors of donations can help charities to target their relief appeals more effectively, and for that reason has strong applied value.

## **1.1 Statement of purpose and delimitation**

The purpose with this study is to empirically examine the determinants behind private donations to humanitarian disasters. While there is a substantial literature on charitable giving we still have an imperfect understanding about which factors affect different forms of giving. Moreover, much of the literature stems from the United States and is based on data from American private giving- not taking into consideration cross-cultural differences. To the best of our knowledge there are no previously published studies that examine private giving to humanitarian disasters by using Swedish data from a fundraising organisation.

Previous research within the field of behavioural economics on private donations as well as literature on foreign and humanitarian aid will be used to form a model of donor behaviour. Unfortunately we cannot hope to create a complete model for all conceivable determinants and so the formulated hypotheses constitute a delimitation of the essay. To test our hypotheses we have collected data that stretches back to the 1950s from the Swedish fundraising organisation Radiohjälpen.

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<sup>1</sup> A humanitarian disaster is an event or series of events which represents a critical threat to the health, safety, security or wellbeing of a community or other large group of people, usually over a wide area (Oxford Reference Online 2010).

## **1.2 Radiohjälpen – context and background**

The term “non-profit organization” includes all kinds of organisations from sport associations to unions. Among the non-profit organisations one finds fund-raising organisations such as Radiohjälpen, Röda Korset and Rädda Barnen. The fund-raising organisations in Sweden generally hold a bank account starting with the number 90, which shows that the organisation fulfils a number of criteria; for example, the administrative costs may not exceed more than ten percent of the money raised. According to Stiftelsen för Insamlingskontroll (2010), the Swedish fund-raising organisations collected a total of SEK twelve billion in 2008, out of which approximately five billion were private gifts from the public. The government, companies and foundations funded the remaining seven billions. On average, this means that every Swede donates about 500 SEK per year to fundraising organisations, which by international standards is a fairly average amount (Breman 2008).

Radiohjälpen was founded in 1939 and is today one of the oldest and most well-known of the Swedish fundraising organisations. It is co-owned as a foundation by the Swedish public service television company, the Swedish public service radio and the Swedish broadcasting educational company. Since 1939 it has conducted around 70 appeals to the Swedish public for domestic as well as international causes. These appeals have been carried out by the help from the Swedish public television and radio. Typically, small announcements are made about an on-going humanitarian disaster followed by an appeal to the public to donate money.

The choice of Radiohjälpen as a study object was made based on its long-history as a non-member fundraising organisation without relief operations of its own. Radiohjälpen does not perform any practical charity work, but specifically focuses on raising money for different humanitarian causes. The collected money is then allocated to different aid organisations that carry out the actual emergency relief work. In this way, Radiohjälpen is a suitable object of study as it enables us to control to some extent for the possibility that the organisation would want to increase its fund-raising activities during a disaster that renders more publicity than usual as it refers to its work in the on-going disaster. This is clearly not an option for Radiohjälpen. Likewise, Radiohjälpen’s method of appeals presents, at least in theory, the closest one can get to a non biased fund-raising organisation regarding how much publicity they give to each disaster fundraise.

## 2. Theory

Before describing the specific theory of our hypotheses, we will briefly describe altruism, the underlying theoretical framework in this thesis.

### 2.1 Altruism

*“Altruism is the disinterested or benevolent act for other people, that is, a regard to promote the welfare of others for their own sake rather than to promote one’s own interest or a placing of interests of others ahead of those of oneself.”*

(Bunnin & Yu 2004, pp 22-23)

The theory of altruism holds that the primary motivation for giving is that people value when their fellow human beings increase their utility, wealth or consumption (Andreoni 2006). There is ample consistent evidence of altruism in experiments such as dictator games (see eg. Forsythe et al 1994) as well as in field experiments on fundraising (see eg. List & Lucking-Reiley 2002). Since altruism is *“consistent with observed patterns of giving”* it will be applied in this study (Andreoni 1990, p.465).

According to the theory of altruism, one would predict that people would give *more* money the closer our relation to the person in pain, the more pain there is, and the more we know about it (Kolm & Ythier 2006). In accordance with these general predictions we have constructed a model on private giving composed of the determinants social distance, need for relief and awareness. We will proceed by accounting for the theory underlying each one of the chosen determinants.

## 2.2 Social distance

*“Social distance is the degree to which people are willing to accept and associate with those having different characteristics”* (Johnson 2000, p. 289).

The theory of social distance was originally launched and developed by a number of sociologists. The notion was first used in Georg Simmel's discussion of the stranger in his *Soziologie*. According to Simmel, the stranger represents the union of newness and remoteness as he moves out of one social circle and strives for acceptance in another (Wolff 1950). The concept was further developed by Robert Park as the “*grades and degrees of understanding and intimacy that characterize personal and social relations*” (Park 1924, p.340).

Emory Bogardus operationalized the concept in 1925 by developing the *Bogardus Social Distance Scale* - a scaling technique for measuring social distance. The Bogardus Social Distance scale measures people's willingness to participate in social contacts of varying degrees of closeness with members of diverse social groups- on the basis of race/ethnicity, age, sex, social class, religion, and nationality. An unwillingness to live next door to a family of a different race, for example, would indicate a high degree of social distance while a willingness to marry someone of a different race would indicate extremely low level of social distance (Wark & Galliher 2007).

The concept of social distance has been further tested in a number of studies on prosocial behaviour within the field of social psychology. Extensive research on helping suggests that people are more likely to offer help to in-group members, people whom they identify with, than to out-group members with whom they do not identify (eg. Dovidio et al. 1997: Stürmer, Snyder & Omot 2005: van Leeuwen 2007).

Behavioural economists, building on the research in sociology and social psychology, have studied the implications of social distance for economic decisions. A particularly large body of experimental and statistical evidence shows that altruism travels less across racial and ethnic lines. Individuals are more generous toward others who are similar to them, among others, racially, ethnically and linguistically (Alesina & Giuliano 2009). Evidence includes experimental research by Christina M. Fong and Erzo F.P. Luttmer (2009) on the effect of racial group loyalty on generosity to Hurricane Katrina victims. They find that respondents



who report feeling close to their racial or ethnic group give substantially more when victims are of the same race.

However, the same authors Christina M. Fong and Erzo F.P Luttmer (2009) come to reach another result in a dictator game experiment where the recipients are local charities that serve the poor. They find that giving does *not* respond significantly to recipient race despite the fact that there is a significant racial bias in perceptions of worthiness as respondents rate recipients of their own racial group as more worthy. The authors conclude that “*while our respondents do seem to rate ingroup members as more worthy, they appear to overcome this bias when it comes to giving*” (Fong & Luttmer 2009, p. 5).

While race and ethnicity have received a lot of attention in studies on private donations, the impact of national culture<sup>2</sup> on generosity has been less examined. Despite findings within social psychology which show that culture has an influence on helping behaviour (Triandis 1991).

In conclusion, there is ample evidence that social distance has an impact on giving, despite some findings which suggest otherwise. Moreover, we want to remedy the lack of systematic studies on the effect of culture on private donations, by focusing on social distance as exemplified by cultural differences across countries. Thus we form the following hypothesis:

**Hypothesis 1: Social distance.** The greater the social distance, as exemplified by cultural differences across countries, between the donor and the recipient, the *less* money the donor will donate to the humanitarian disaster.

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<sup>2</sup> Culture can be defined as the system of shared beliefs, values, customs, behaviours, and artifacts that the members of society use to cope with their world and with one another, and that are transmitted from generation to generation through learning (Oxford Reference Online 2010).

## 2.3 Need for relief

Private donations are primarily considered to be based on humanitarian motivations. The humanitarian motive is to provide relief where it would do most good, in terms of saving lives and reducing human suffering (Strömberg 2007). When it comes to humanitarian disasters worldwide, this would arguably drive relief to larger disasters in low-income countries, which lack the necessary resources to limit and deal with the effects of a disaster. As we have been unable to find studies which specifically examine the determinants of private donations to disasters worldwide, literature on humanitarian and foreign aid will be analogously applied. Even if there are differences between private giving and aid, where geopolitical strategy is for example of greater importance for the allocation of aid, both are assumed to be allocated in response to the need of the recipient (Nielsen 2009).

Empirical research on humanitarian aid suggests that international relief for natural disasters does increase with the severity of the disaster, as measured by the number of killed and affected, and also rises when the income of the affected country is lower (Strömberg 2007). These results have been given support in another study by Alesina and Dollar who studied foreign aid from various donors to receiving countries and found that “*most donors give more to poorer countries, ceteris paribus*” (Alesina & Dollar 2000, p.47). However, the authors also noted that there is quite a large variation among donors in the relationship of aid to poverty as measured by income per capita, with the highest elasticity for the Nordic countries. This means that Swedish humanitarian aid responds significantly to the income of the recipient- the poorer the recipient the more aid will be granted.

Given that the findings on humanitarian and foreign aid have found a positive correlation between the need for relief and the amount of aid, we form the following hypothesis:

**Hypothesis 2: Need for relief.** The greater the need for relief in a humanitarian disaster, the more money the donor will donate to the humanitarian disaster.

## 2.4 Awareness

Awareness of a humanitarian disaster is more or less a prerequisite for giving as people will have to know about a disaster before they can think about donating money to disaster relief. This notion has been given support by Cheung and Chan (2000) who found that awareness of a disaster influences the intention to donate to charity. As disasters are happening worldwide the media is very likely to play a role in influencing human awareness and perception of disasters. Support for this was given by Rattien (1990) who found that electronic and print media significantly affect how and what the public learns about natural disasters. Payne (1994) went further in his argument, suggesting that media services are the *essential* means whereby the public becomes aware of catastrophes, sometimes arriving at the scene of a disaster well before local emergency services.

The mechanism through which media affects donor behaviour can be explained by the exposure theory. According to the exposure theory, a person that is repeatedly exposed to a stimulus will adopt a positive attitude toward the stimulus (Zajonc 1968). In the case of a disaster, this implies that the amount of exposure to news reports about a disaster and the help needed in the disaster area, can lead to a positive attitude towards donating to a disaster relief campaign. A study by Massey (1994) confirmed this expectation, showing that extensive news coverage of a disaster increases the response to an emergency fund-raising appeal. Another study by Simon (1997), using a quasi-experimental design, showed that more network news coverage of earthquakes increased aggregate donations by private citizens.

Leading on from the idea that media has a crucial influence in making people aware of humanitarian disasters, we arrive at our final hypothesis:

*Hypothesis 3: Awareness.* The more aware the donor is of a humanitarian disaster through media coverage, the *more* money she will donate to the humanitarian disaster.

## 2.5 Hypotheses

To summarize, we formulate the following hypotheses:

1. **Social distance.** The greater the social distance, as exemplified by cultural differences across countries, between the donor and the recipient, the *less* money the donor will donate to the humanitarian disaster.
2. **Need for relief.** The greater the need for relief in a humanitarian disaster, the *more* money the donor will donate to the humanitarian disaster.
3. **Awareness.** The more aware the donor is of a humanitarian disaster through media coverage, the *more* money she will donate to the humanitarian disaster.

### 3. Empirical method

We will begin by presenting the dependent and the independent variables and how data on each was collected as well as their interpretation for our hypotheses. We then proceed to present the regression models used to test our hypotheses.

#### 3.1 Donations – dependent variable

*Donations (SEK)* is the dependent variable in the regression models. It measures the amount of money collected for each fundraiser. In the Swedish public service broadcasters' archive, the annual reports of Radiohjälpen were kept. Each of the observations of disaster fundraisers that make up our sample was found in these annual reports published over the past 60 years by Radiohjälpen. For example, in the annual report of 2005 one can read that Radiohjälpen collected SEK seven million for the earthquake in Pakistan that took place on the 8<sup>th</sup> of October the same year. Each disaster fundraiser and the amount collected make up an observation in our sample. The earliest observation dating back to the annual report of 1951 and the latest comes from the 2008 report. For fundraisers that stretched over several years, which was the case for a few observations, the sums collected each year were added together forming a sum for that specific observation. For example Radiohjälpen conducted one fundraiser in 1982 and another in 1984 for the war in Lebanon during the 1980s; hence the two sums were added together.

Furthermore, the amounts in SEK collected were adjusted for inflation into the price level of March 2010 using Statistics Sweden's price converter. The price converter used an average of prices for the year when the observation was dated, meaning that a fundraiser conducted in May 1985 was converted from the average price level of 1985 into the price level of March 2010.

We would like to point out that the Indian Ocean Tsunami in 2004 originally was part of our sample. The Tsunami raised more than SEK 300 millions and was, and still is until this day, by far the largest of all fundraisers that Radiohjälpen has ever conducted. When we included the Tsunami in our regressions it changed the output completely. For this reason we considered it to be an outlier and excluded it from the sample.

### **3.2 Social distance – independent variable**

Since culture is an elusive concept which is hard to measure we will make use of proxy variables. We limit ourselves to three proxy variables of culture that differ in character:

1. Geographic distance
2. Share of Christians
3. Culture index

#### **3.2.1 Geographic distance**

Geographic distance has often been considered a proxy for cultural distance (Johanson & Wiedersheim-Paul 1975). It has been used as a proxy for culture in several studies on the allocation of foreign and humanitarian aid, where it has been found significant (see eg. Alesina & Dollar 2007). In this case, the variable (geographic) *distance* measures the distance between the capital of the donor, Stockholm, and the capital of the recipient country. This data was calculated using a calculator for distances between geographical locations provided by the U.S Board on Geographic Names (2010).

#### **3.2.2 Share of Christians**

Religion is another common proxy for culture and has been found significant in numerous studies on aid (see eg. Neumayer 2005). The variable (share of) *Christians*, with regard to the fact that Sweden counts as a Christian nation, includes the share of the population in the recipient country that follows Christianity. This data was collected from the CIA World Factbook (2010).

#### **3.2.3 Culture index**

The variable *culture index* is based on Geert Hofstede's cultural dimensions. These are power distance, uncertainty avoidance, individualism versus collectivism and masculinity versus femininity (for a more detailed description of the four dimensions see Appendix 1).

Hofstede's culture indexes have been found to be very stable over time and have been replicated in numerous studies (Hofstede 1984). In contrast to the two previous variables this measure has, to the best of our knowledge, never previously been applied as a proxy for culture in a study on donor behaviour. However, there are studies in behavioural finance which have utilized culture, as operationalized by Hofstede, to measure cultural differences across countries (see eg. Chui, Titman, & Wei 2010; Tadesse & Kwok 2005). These studies support this paper's assertion

that culture, as operationalized by Hofstede, can be used as a measure of cultural differences across countries.

To be able to calculate the difference in culture between Sweden and the recipient country we calculated an average of the difference in Hofstede's four categories. First, the recipient country's value in each category was subtracted from Sweden's value in each category, then, the absolute sum of the differences for all four categories were added together and divided by four. For example, the difference between Sweden and an Arab country is calculated as follows:  $(|31-80|+|71-38|+|5-52|+|5-68|)/4 = 48$ . In those cases where values on the four dimensions were missing for a certain country we approximated with neighbouring countries. The approximations were done after consulting Fredrik Wicklund (2010) who is a certified consultant at the international consulting organisation Itim International which utilizes Hofstede's concepts.

### **3.3 Need for relief - independent variable**

The severity of a disaster is often measured in terms of the number of *killed*, which, hence, make up one of the proxies for need for relief. Likewise, *GDP per capita* can be used as a proxy for a country's ability to handle a disaster. The poorer a country is the less it can be expected to employ disaster preparedness and prevention programs and therefore has a greater need for relief. Both of the variables have been applied, and found significant, in previous studies on relief to humanitarian disaster (see eg. Strömberg 2007).

#### **3.3.1 Killed**

Information about the number of killed in specific natural disasters was gathered through the Emergency Events Database (EM-DAT 2010), which is run by the Centre for Research on the Epidemiology of Disasters (CRED), a WHO collaborating centre. Information about the number of casualties in wars and war-related conflicts was gathered from the book *World Military and Social Expenditures* for disasters prior to 1996 (Sivard 1996). For disasters from 1996 and onwards we used the database of Centre for Systemic Peace (2010).

### 3.3.2 GDP per capita

To gather information on GDP per capita for every country we mainly used data from the World Bank (2010). A few countries missed data, in which case we used United Nation's (2010) database as a substitute. Specifically, we gathered information on the current GDP per capita in USD at the time of the disaster and then turned the GDP per capita into constant prices of 2010 in USD by accounting for inflation. This was done with the help of a US Inflation Calculator (2010).

### 3.4 Awareness – independent variable

The variable *media coverage* was used as a proxy for awareness and to find a measure for it of the disasters was a difficult task. The task was finding a source that reached far back in time but still was representative for the general media coverage of the disaster. The source that reached longest back in time was the archives of Sweden's biggest daily newspaper Dagens Nyheter and Sweden's second biggest evening paper Expressen. These two papers had a daily number of copies printed of around 700 000 distributed nationwide in 2010 (TS Tidningen 2010). Moreover, through Mediearkivet (2010) we could access a database with all editions of Dagens Nyheter and Expressen back to 1991 and 1990 respectively. All in all, the two papers were considered being the best proxy at hand for measuring media coverage over a longer period.

By using the Mediearkivet's archive our aim was to get an approximate measure of the media coverage that each disaster was granted. The search method is described below. All words marked with quotation marks are search words. For example, "Country" could be "Pakistan" and "Disaster type\*" "Earthquake\*" for one of our observations. The different search fields were filled in as follows: (1) "Country"; (2) [words also included in the search] "Disaster type\*" OR "Disaster\*"; (3) [the search period stretched from the month before the disaster took place to the end of the year when the fundraise ended].

### 3.5 Disaster type – control variable

The first variable which we control for is *disaster type*. In the annual reports from the 1970s and onwards Radiohjälpen describes what kind of disaster that was the cause for the fundraise. For the years prior to 1970 we had to find out ourselves which type of disaster the

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<sup>3</sup> The star sign (\*) indicates that the ending of the word can take any form.



fundraises concerned. The different kinds of disasters were divided into two different main groups that each was assigned a number; *natural disasters* (=0) or *war* (=1). The categorization was made since there were too few observations to have any more than two separate sub-groups. Furthermore, the choice of putting all the natural disasters in one group, on one hand, and the wars and war-related conflicts in another group seemed like the most reasonable choice and was in accordance with the categorization of humanitarian disasters in previous studies (see e.g., Drury, Olson & Belle 2005).

In detail the disasters were divided as follows with the number within the parenthesis being our categorization: (0) tropical cyclone, storm or hurricane, (0) volcanic eruption, (0) earthquake, (0) land slide, (1) war, genocide or political unrest, (1 or 0) famine. As can be seen famines were categorized as either *natural disaster* or *war*. For the famines, they were classified as *natural disasters* (=0) if the major cause behind the famine was a natural disaster, such as drought. If the major cause behind the famine was war-related it was placed in the group *war* (=1).

### **3.6 Time –control variable**

The second variable that we control for is *time*. Time can be interpreted as how many years from the base year 1950 that a disaster fundraiser took place. This means that the fundraiser conducted for Pakistan in 2005 was assigned  $t=55$ . The *time* variable is important as it controls for any possible time trend in Radiohjälpen's appeals for money from the Swedish public.

### **3.7 Method of analysis**

To test our hypotheses we ran two different regression models. The first one is for the sample as a whole and excluded the variable *media coverage*. We will refer to this sample as the "Big model/sample". The Big sample included a total of 62 observations. The second regression model had a smaller sample of 26 observations in total and included the variable *media coverage*. From now on we will refer to it as the "Media model/sample".

The regression method used was Ordinary Least Square (OLS) and we used the statistical software Intercooled Stata 9.2. Also, each of the two regression models were run in both linear form as well as logarithmic form. In addition, Breusch-Pagan tests for the presence of heteroskedasticity were run. The test was significant in the linear model in the Big sample

which made us implement robust standard errors. In the Media sample the test was insignificant and we choose not to implement robust standard errors.

### 3.7.1 The Big model

For the Big sample a linear and a logarithmic model were tested. In the logarithmic model we left the *time* variable in its levelled form, since it was easier to interpret that way. The dummy variable *war* was also left in its levelled form. The models look as follows:

#### The linear Big model

$$Donations(SEK) = \beta_0 + \beta_1*distance + \beta_2*culture\ index + \beta_3*Christians + \beta_4*killed + \beta_5*GDP\ per\ capita + \beta_6*war + \beta_7*time + u$$

#### The logarithmic Big model

$$Log(Donations(SEK)) = \beta_0 + \beta_1*log(distance) + \beta_2*log(culture\ index) + \beta_3*log(Christians) + \beta_4*log(killed) + \beta_5*log(GDP\ per\ capita) + \beta_6*war + \beta_7*time + u$$

### 3.7.2 The Media Model

For the Media sample, we also ran a linear as well as a logarithmic model. The model was identical to the Big model with the exception of the included *media coverage* variable.

#### The linear Media model

$$Donations\ (SEK) = \beta_0 + \beta_1*distance + \dots + \beta_7*time + \beta_8*media\ coverage + u$$

#### The logarithmic Media model

$$Log(Donations(SEK)) = \beta_0 + \beta_1*log(distance) + \dots + \beta_7*time + \beta_8*log(media\ coverage) + u$$

## 4. Results

In the following section the descriptive data for the total sample will be presented. We then proceed to report the results of the separate regressions. We will present one Big model for the entire sample and a Media model for the sample where the *media coverage* variable is included. We will make comments on the outcome of each variable and more specifically how the results compare to what the hypotheses had predicted. For statistic significance, we will accept p-values of at most ten percent.

## 4.1 Descriptive data

The total sample consisted of 62 observations. As can be seen in figure 1 and table 1, the fundraisers are mainly concentrated to Europe, Africa and Asia. Slightly more fundraisers have been made for natural disasters than for wars.

**Figure 1: The disaster stricken countries for which Radiohjälpen has conducted fundraisers over the last 60 years**



**Table 1: Descriptive data over the total sample**

Observation per disaster type		Observation per region		Min - max distance per region in km <sup>4</sup>
Natural disasters	35	Europe	16	1318 - 2691
War	27	Middle East	6	3110 - 3755
Total	62	Africa	18	2570- 9587
		Asia	15	2818 - 8043
		Central & South America	7	9633 - 13 098

<sup>4</sup> Min - max distance refers to the observations in each continent that are closest and furthest away from Sweden (Stockholm).

Figure 2 shows the allocation of disasters across casualties. There were, for example, ten observations in the sample where 1 000-10 000 were killed in a disaster.

Figure 2

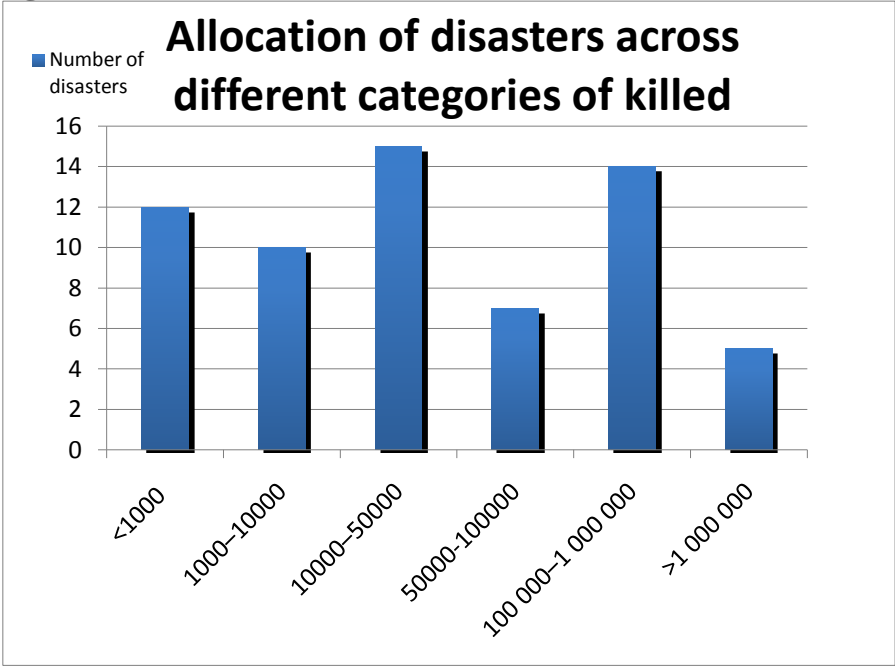
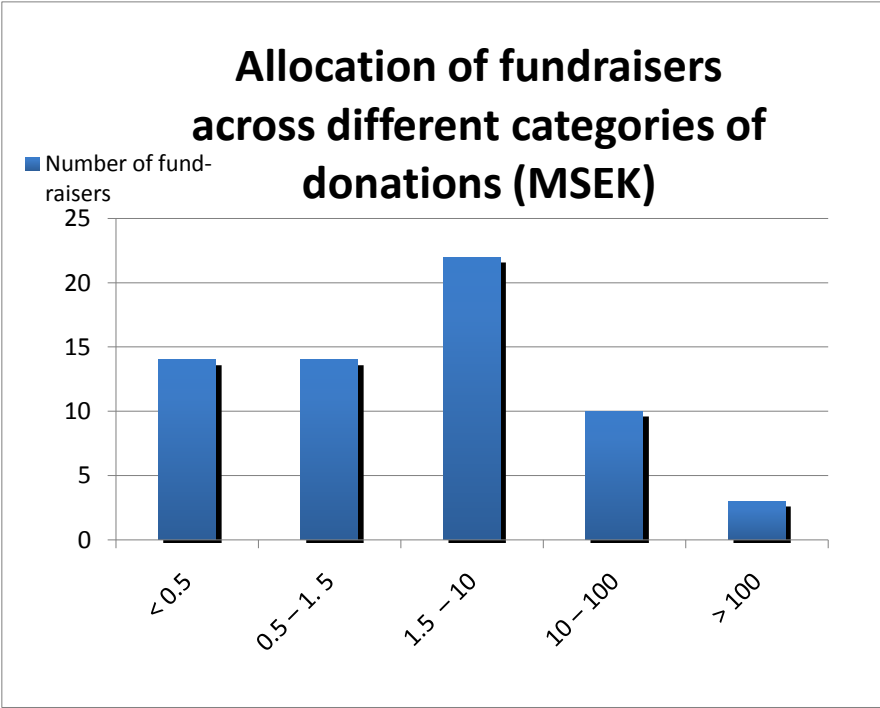


Figure 3 shows the allocation of fundraisers across different categories of donations (MSEK). There were, for example, ten fundraisers that raised MSEK 10 to 100 million.

Figure 3



## 4.2 Regressions on the Big sample

**Table 2: Results of the Big regression model**

	Logarithmic model				Linear model		
Independent variable:	Coef.	Std. Err.	P>  t		Coef.	Std. Err.	P>  t
<b>Social Distance</b>							
<i>log(distance)</i>	-1.056078	.4571448	0.025	<i>distance</i>	-1754.057	1094.758	0.115
<i>log(Christians)</i>	.1700805	.1077274	0.120	<i>Christians</i>	9039268	7187696	0.214
<i>log(culture index)</i>	.3030479	.7360193	0.682	<i>culture index</i>	-323931.5	594944.1	0.588
<b>Need for relief</b>							
<i>log(killed)</i>	.3366168	.1053921	0.002	<i>killed</i>	7.885785	7.822265	0.318
<i>log(GDP per capita)</i>	-.0898369	.2270179	0.694	<i>GDP per capita</i>	-1304.274	843.224	0.128
<i>war</i>	-1.374026	.553346	0.016	<i>war</i>	1051569	8797911	0.905
<i>time</i>	-.0275	.0152225	0.076	<i>time</i>	-560179.8	319925.5	0.086
<i>Constant</i>	21.54372	4.755088	0.000	<i>Constant</i>	4.78e+07	2.88e+07	0.102
<b>Dependent variable:</b>	<i>donations (SEK)</i>						
<b>Number of observations</b>			62				62
<b>F( 7, 54)</b>			2.34				1.38
<b>Prob &gt; F</b>			0.0370				0.2345
<b>R-squared</b>			0.2324				0.2072
<b>Adj R-squared</b>			0.1329				0.1045

### 4.2.1 The Big model

The entire Big sample consisted of 62 observations. In the logarithmic model, almost all variables were significant except for *log(GDP per capita)*, *log(Christians)* and *log(culture index)*. The model itself was significant according to the F-test statistic. In the linear model however, only the variable *time* was significant. All the other variables were insignificant and the model itself was insignificant according to the F-test statistic.

### 4.2.2 Social distance

The logarithmic model contained several significant variables. *Log(distance)* was significant and its coefficient had a negative sign. This implies that we give less money to a country affected by a disaster the further away from us the country is situated. Approximately, the logarithmic elasticity is equal to one; for example, we would give 50 percent less money to country X than Y if the disaster stricken country X is 50 percent further away than Y. *Log(Christians)* was insignificant but had a positive coefficient as predicted. Finally, *log(culture index)* showed up insignificant, which was contrary to our prediction. In the linear model neither *distance*, *Christians* nor *culture index* were significant. The negative sign of the coefficients *distance* and *culture index* and the positive sign for *Christians* were, however, in line with what our hypothesis had predicted.

### 4.2.3 Need for relief

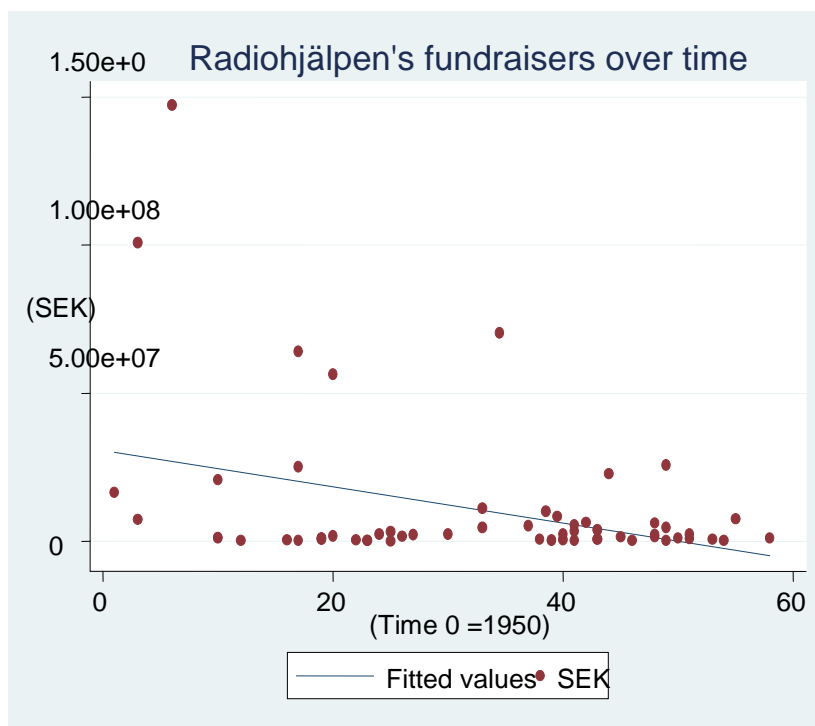
In the logarithmic model *log(killed)* was significant. *Log(killed)* had a positive coefficient, which suggests that people donate more money the more people that are killed in a disaster. This prediction is in line with our hypothesis about how the need of the population affected by the disaster should influence giving behaviour. *Log(GDP per capita)*'s coefficient was negative as predicted; however, the parameter was not significant, in spite of our predictions that so would be the case. This issue will be discussed further in the discussion section. Neither *killed* nor *GDP per capita* were significant in the linear model. However, the signs of their coefficients corresponded to what was predicted by the hypotheses.

### 4.2.4 Disaster type and time

In the logarithmic model, *war* turned out significant with a negative coefficient, indicating that people donate less money to wars than other types of disasters. *Time* turned out significant with a negative coefficient. In the linear model, the *time* variable was significant and its coefficient negative. In other words, people in Sweden have given less money to Radiohjälpen's fundraisers over time. On average since 1950, the amount donated has decreased by SEK 500 000 a year. The effect of *war* on the amount of *Donated (SEK)* was insignificant in the linear model.

Figure 4 shows the linear relationship between the amount of SEK donated on the Y-axis, and the time on the X-axis. For example, the largest amount raised was during the political unrest in Hungary 1956 and totaled almost SEK 150.

**Figure 4**



#### 4.2.5 Other issues

Our tests show that some of the independent variables of the logarithmic model show fairly large correlations. For example, when *GDP per capita* increases by 100 percent the number of *killed* decreases by 48.4 percent and this correlation is significant (see Appendix 2). At the same time some of the variables on social distance show much less correlation than expected. For example, a 100 percent increase in the variable *culture index* only correlates with a 12 percent decrease in the variable *Christians* and this correlation is insignificant (see Appendix 2).



### 4.3 Regressions on the Media sample

**Table 3: Results of the Media regression model**

Logarithmic model				Linear model			
Independent variable:	Coef.	Std. Err.	P> t		Coef.	Std. Err.	P> t
<b>Social distance</b>							
<i>log(distance)</i>	.3060335	.7765782	0.698	<i>distance</i>	433.7817	835.3048	0.610
<i>log(Christians)</i>	.1157923	.1407139	0.422	<i>Christians</i>	5347429	3852647	0.183
<i>log(culture index)</i>	1.89672	2.562338	0.469	<i>culture index</i>	-3256.436	296125.2	0.991
<b>Need for relief</b>							
<i>log(killed)</i>	.0951453	.161795	0.564	<i>killed</i>	1.930416	4.236544	0.654
<i>log(GDP per capita)</i>	-.2006604	.237126	0.409	<i>GDP per capita</i>	-56.33429	544.1182	0.20
<b>Awareness</b>							
<i>log(media coverage)</i>	.6413048	.2444567	0.018	<i>media coverage</i>	10276.49	3858.413	0.016
<i>war</i>	-1.657802	.7623436	0.044	<i>war</i>	-2214202	3259085	0.506
<i>time</i>	-.1202999	.060991	0.065	<i>time</i>	-221157.2	270691.2	0.425
<i>Constant</i>	9.476472	8.952976	0.305	<i>Constant</i>	9733606	1.61e+07	0.553
<b>Dependent variable:</b>	<i>donations (SEK)</i>						
<b>Number of observations</b>			26				26
<b>F( 8, 17)</b>			2.09				1.83
<b>Prob &gt; F</b>			0.0964				0.1399
<b>R-squared</b>			0.4954				0.4630
<b>Adj R-squared</b>			0.2580				0.2103

#### 4.3.1 The Media model

The entire Media sample consisted of 26 observations. Over all, few variables turned out significant in the Media model, with the exception of *media coverage* being significant in the logarithmic as well as the linear model. However, one must keep in mind that the number of observations in the Media model is only 26 compared to 62 in the Big model, which makes it harder to find any possible significant estimates. The logarithmic model itself was significant according to the F-test statistic whereas the linear model was not significant according to the F-test statistic.

### 4.3.2 Social distance

All of the variables *distance*, *Christians* and *culture index* were insignificant in both the logarithmic and the linear model. *Distance* and *Christians* have positive signs on their coefficients in both models, implying that donations increase the larger the social distance between donors and recipients. This runs opposite to our hypothesis. The *culture index* receives different signs on its coefficient depending on model.

### 4.3.3 Need for relief

Neither *killed* nor *GDP per capita* were significant in either the logarithmic model nor in the linear model. *Killed* and *GDP per capita* have positive and negative signs respectively on their coefficients, implying that donations increase as the number of killed increases and the poorer a country is. This is in accordance with our hypothesis.

### 4.3.4 Awareness

The regressions showed that *media coverage* was significant in the logarithmic model as well as in the linear model. The coefficients were positive in both models, which suggests that we give more money to the disasters that media cover more intensely. The relationship in the logarithmic model was that a 100 percent increase in the variable *media coverage* was equal to a 64 percent increase in the variable *donations (SEK)*<sup>5</sup>. In the linear model neither *time* nor *war* were significant.

### 4.3.5 Disaster type and time

In the logarithmic model *war* as well as *time* turned out significant. The negative coefficient on *war* suggests that people donate less money to wars than to the base group *natural disasters*. *Time*'s coefficient was negative which means that Radiohjälpen has raised less money for disasters on average for every year since 1990.

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<sup>5</sup> We also ran the Media model in logged form but without *log(media coverage)*. By doing so the  $R^2$ -value fell to 0.29 compared to 0.50 when the variable on media was included. For the linear Media model the corresponding change resulted in  $R^2$ -value from 0.46 to 0.24

## 5. Discussion

We begin by discussing the results obtained with respect to the hypotheses before proceeding into a more general discussion of the study's limitations and its over all implications.

### 5.1 Social distance

The impact of social distance, as measured by cultural differences across countries, on donations has received mixed support. None of the three measures of culture are significant in the linear model while  $\log(\text{distance})$  shows up as significant in the logarithmic model.

The results of the linear model leave us with little to conclude but that cultural differences do not appear to have any effect on donor behaviour. Either this can be due to that the effects are too weak to be found in our relative small sample, or there simply does not exist a linear relationship between cultural differences on one hand and money donated on the other.

If we instead turn to the results of the logarithmic model, it shows that the only variable for cultural differences that seems to have an effect on donor behaviour is distance between Sweden and the disaster stricken country. This result is in-line with previous research on state funded relief support in other countries. Moreover, our results on the effect of the share of Christians on donor behaviour do not correspond to what the hypothesis predicted. Our study finds no significant support for that the share of Christians in the disaster stricken country would have any effect on the amount donated. Perhaps the high rate of secularity among the Swedish population makes Christianity of little or no importance for donor behaviour. Sweden is according to Therborn "*the most secular and agnostic of the world's modern societies*"<sup>6</sup>, where somewhat less than four percent of the Church of Sweden's nearly seven million members attended public worship during an average week and only about two percent are regular attendees (Therborn 1989, p.275). In light of the seemingly low degree of religiosity among the Swedish population it does not seem unreasonable that we are unable to detect any significant effect of the share of Christians on donor behaviour. If such an effect exists, it is likely to be relatively small.

Furthermore, we note that the variable *culture index* is never significant at any conventional level; in fact, it never comes close to being so. The index, thus, do not seem to make up a

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<sup>6</sup> Free translation from Swedish

suitable proxy for a possible existing cultural bias. One possible explanation for this is that the index in itself is imperfect and not suitable for quantitative empirical studies, but rather as an indicator of relative differences in value systems across countries. Criticism has also been directed towards Hofstede's research which according to McSweeney (2002, p. 112) relies on "*fundamentally flawed assumptions*". One point of criticism that McSweeney makes is that the index is based on generalizations about an entire national population solely on the basis of analysis of a few questionnaire responses in each country. Hofstede's national cultural descriptions are therefore, argues McSweeney (2002, p.112), "*invalid and misleading*". We are inclined to believe that some of this criticism has its merits as we find it intuitively hard to understand how Sweden, according to Hofstede's index, can be culturally closer to Ethiopia and Nigeria than Greece for example.

On the whole, we find weak support for our hypothesis on the effect of national culture on giving behaviour. A final explanation for this could be that culture does not matter much for the Swedish population. Some research has shown that members of individualistic cultures are more likely to help out-group members than members of interdependent or collectivistic cultures (Triandis 1994). Given that Sweden is often regarded as an individualistic society (Halman & Ester 1996) this might help to explain why Swedish donors overcome any cultural differences when it comes to giving. Or perhaps the effect is too small to be measured with our sample size? Whatever the reason behind our result is, it cannot be rejected that culture, with the exception of geographical distance, does in fact have little or no impact on donor behaviour.

## **5.2 Need for relief**

The results points to that the need for relief affects how much money the Swedish population donates to humanitarian disasters. The results, however, were not unambiguous, as the *GDP per capita* variable did not turn out significant at any conventional level.

First of all, the number of casualties affects how much money people are willing to donate. The results point to a relationship where donators give more money the more people that are killed in a disaster. This result is not surprising and goes well in line with our hypothesis of how the need for relief should affect the willingness to donate. The variable *log(killed)*, turned out significant in the Big logarithmic model whereas it turned out insignificant in the linear model. The linear model, however, contained fewer significant variables than the logarithmic

model in general, which is one possible explanation for why the variable *killed* proved to be significant in the logarithmic but not in the linear model.

*GDP per capita* of the country affected by the disaster was the second variable used to measure the effect of need for relief on donor behaviour. The effect of GDP per capita on donations did not turn out significant in any of the two main regressions ran, which was contrary to the prediction. One possible explanation for the result is that the relationship between the amount of money donated and GDP per capita was too weak to be significant in our relatively small sample.

The high correlation between *GDP per capita* and *killed* in the Big model could also shine some light on the result. When *GDP per capita* for countries approaches low numbers, as it does for, among others, many African countries, the variable *killed*, *ceteris paribus*, increases by almost 50 percent in the logarithmic regression, a correlation which is significant (see Appendix 2). This shows that poorer countries are certainly more often affected by higher number of casualties when disasters do occur (Strömberg 2007).

Perhaps private givers forget to take into consideration the weakness of the economies of poor countries struck by disasters when they make donations to these countries; but, in fact, they mainly account for the disproportionate high number of casualties and forget to compensate for the high disparity in wealth. This reasoning would suggest that we do not fully appreciate or forget the fact that we need to compensate a poor country relative to a higher income country, *ceteris paribus*, when struck by a fatal disasters as the poor country is not only likely to have a higher numbers of casualties but in addition have worse prerequisites to handle the disaster to begin with.

### **5.3 Awareness**

First of all, the logarithmic Media model was significant as a whole whereas the linear model was not. Moreover, the general results obtained in the Media sample give support to the hypothesis that increased awareness has a positive effect on the amount of money donated. In short, the theory stated that media's coverage of a disaster first affected people's awareness, attitude and eventually the amount of money donated to a disaster. The variable on *media coverage* also proved to be significant in both the linear model as well as the logarithmic model, which points towards that media does in fact influence donor behaviour. Although, the

numbers should be interpreted with great caution, on average, a 100 percent increase in media coverage corresponds to an increase in the amount donated of 64 percent in the logarithmic model.

What perhaps was most striking of all the results in the Media model was the relatively high value on goodness-of-fit that was obtained. The  $R^2$  value in the logarithmic Media model was 0.50 compared to a mere 0.29 without the variable *media coverage*, ceteris paribus. The adjusted  $R^2$  value of approximately 0.26 in the Media model was also the highest value in any of the regressions ran. On the whole, its significance as a variable and its effect on the  $R^2$ -value indicate that media coverage does indeed play an important role for how much money people are willing to give to disaster fundraisers. These results go well in line with the hypothesis and previous research within the field.

The effects of the other variables in the Media model are somewhat ambiguous. On one hand, *time* and *war*, remain significant as in the Big Model; on the other hand, all other variables that measure social distance and the need for relief become insignificant. One explanation, why the other variables are insignificant in the Media model, is that *log(media coverage)* captures some of the effect of the other variables; for example, when leaving out *log(media coverage)*, *log(killed)* becomes significant again. However, the fact that *log(killed)* is not significant in the model could also mean that people do not give money to the disasters with the highest number of casualties but instead foremost based on media's coverage. Moreover, our results in the Spearman's pair wise correlation between *log(killed)* and *log(media coverage)* show no significant correlation between the two variables, which would give less support to the "capturing effect" that we describe above (see Appendix 3).

These finding makes us pose the following question: Do media take the number of killed in humanitarian disasters too little into account when they allocate news coverage to different disasters? We fail to reject such a claim according to our results; this makes us pose yet another question: What does in fact decide how much coverage media allocate to different disasters? To go further into this matter is far beyond this thesis. Nevertheless, the matter certainly calls for further research in light of the big impact that media appears to have on private giving.

## 5.4 Disaster type and time

The results indicate that war-related conflicts as such have a negative effect on the amount of money donated. For example, if the disaster is caused by a war, the model predicts that people donate 75 percent less than if a natural disaster would occur *ceteris paribus* (the coefficient on *war* is  $e^{-1.37} = 0.25$ ; meaning that war receive 25 percent as much as natural disasters). This finding gets some support from another study by Zagefka and Brown (2008) which concluded that people donate less to “man made” disasters such as wars than to natural disasters such as earthquakes. The study suggests that this has to do with victim blame. In interpersonal helping contexts, it has been demonstrated that people are more likely to help innocent victims than those that are blamed for their plight (Campbell et al. 2001; Betancourt, 1990). It is very unlikely that victims of natural disasters could have caused the drought, tsunami, or earthquake. However, in man-made disasters it is at least possible, although not necessarily true, that the victims might have triggered the crisis, e.g. by overusing the land, or by engaging in conflict. The findings of the study on victim blame could explain the negative effect that war appears to have on the amount donated.

One must, however, interpret the result on the *war* variable with great caution. The number of casualties in the observations labeled as wars included the total number of casualties over the entire period that the conflict went on; at the same time, a fundraiser might have taken place at the beginning of the conflict period and, hence, donors were not able to account for all the people that eventually were killed in the conflict when making the choice on how much to give. Since this is a measurement error in the explanatory variable and  $\text{Cov}(\text{killed}, \varepsilon_{\text{killed}}) \neq 0$ , the estimator  $\beta_{\text{war}}$  will be biased. As the estimate is biased towards zero,  $\beta_{\text{war}}^* > \beta_{\text{war}}$ , we probably overestimate the negative effect of *war* relative to the base group *natural disaster* on donor behaviour. Nevertheless, in the light of the study by Zagefka and Brown (2008) the negative effect of wars on donor behaviour that we predict probably still exists in our sample.

The negative time trend in money raised that is seen in both the Big model and the Media model most likely shows the increased competition among fund-raising organisations in Sweden over the past half-decade or so. This can be seen by the fact that Radiohjälpen no longer permanently resides among the top eight organisations in terms of money collected in Sweden, which was the case in the past (SFI 2010).

## **5. 5 General discussion**

The primary limitation of this study is the small sample size. With a larger sample size small anomalies and statistical deviations would be of less influence. Specifically, we believe, that the sample size is very likely to be a problem when it comes to the Media sample. It is possible that we would have obtained different results if we had worked with a larger sample size. Our chosen determinants may also constitute a limitation. We cannot exclude the possibility that there is some other, largely uncorrelated factor, that influences donor behaviour; combined with our chosen determinants, such omitted factors may have given a more complete model explaining private donations to humanitarian disasters. A final limitation concerns the amount of publicity that Radiohjälpen has given to each fundraiser which we could not control for.



## 6. Concluding remarks

The purpose of this study was to examine the determinants behind private donations to humanitarian disasters. We formulated three hypotheses based on the determinants social distance, need for relief and awareness through media coverage. Of the three tested hypotheses, awareness of a disaster emerged as the most influential determinant of private donations to humanitarian disasters. There is a significant positive relationship between media coverage and donations- the *more* media coverage a humanitarian disaster receives, the *more* money people will donate to the disaster. The other two determinants social distance and need for relief received some but not unambiguous support. Among the social distance variables, only *distance* received support whereas *Christians* and *culture index* did not gain any support. The determinant need for relief did also receive somewhat mixed support. Whereas the variable *killed* received some support, *GDP per capita* did not get any significant support. We also found support for that people donate *less* money to wars than other types of disasters.

Interesting to note, however, is that when the variable *media coverage* is added to the model neither *distance* nor *killed* are longer significant. Only *media coverage* gains significance. This leaves us with the conclusion that over a 60 years period of time, there is some support for the prediction that the closer our relation to the person in pain and the more pain there is, the more we donate to those in need in a humanitarian disaster. On the other hand, however, when we look at the past two decades and control for the awareness of a disaster, neither our relationship to the person in pain nor the amount of pain there is, no longer with certainty has an effect on donations. We find this result difficult to understand and it certainly calls for further investigation.

## **6.1 Further research**

As we got somewhat mixed results on the majority of our determinants, we suggest a replication of our study with some modifications. We suggest, first and foremost, a larger sample size that covers all the determinants that we tested. Secondly, regarding the variables, it would be desirable to have data on media coverage over a longer period of time, with different types of media such as television and advertising. In addition, we recommend the application of other measures on culture to complement ours. Perhaps we should not rule out Gert Hofstede's cultural index completely since it has been found significant in several studies within behavioural finance. These studies have however only applied one out of Hofstede's four cultural dimensions; the dimension of individuality vs. collectivism. In another study on donor behaviour, it thus might be suitable to apply the dimension individuality versus collectivism as research suggests that this dimension has implications for generosity. Finally, as mentioned in the general discussion there may exist other variables that we have not accounted for in our model. It is therefore our hope that the search continues towards finding out more specifically if there are other determinants that affect private donor behaviour when fatal humanitarian disasters occur around the world; and if this is the case, which these determinants are.

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# **Appendix 1**

## **A description of Geert Hofstede's cultural dimensions**

Geert Hofstede is an influential Dutch organisational sociologist who carried out a number of research project into national culture differences starting in the 1970s and onwards. Together these studies identified and validated four independent dimensions of national culture differences for more than 50 countries. These four dimensions are as follows:

### **1. Power distance**

The extent to which power is distributed equally within a society and the degree that society accepts this distribution. A high power distance culture prefers hierarchical bureaucracies, strong leaders and a high regard for authority. A low power distance culture tends to favour personal responsibility and autonomy. On the cultural scale of Hofstede's analysis Austria scores, for example, 11 while the Arab countries score 80. This suggests that Austria, in contrast to the Arab countries, has a substantially smaller gap between the wealthy and the poor and strong belief in equality for each citizen.

### **2. Uncertainty avoidance**

The degree to which privates require set boundaries and clear structures: a high uncertainty culture allows privates to cope better with risk and innovation; a low uncertainty culture emphasizes a higher level of standardization and greater job security. For example, in Germany there is reasonably high uncertainty avoidance (65) compared to countries as Singapore (8) and neighbouring country Denmark (23). Germans are not to keen on uncertainty, by planning everything carefully they try to avoid the uncertainty.

### **3. Individualism versus collectivism**

The degree to which individuals base their actions on self-interest versus the interests of the group. In an individualistic culture, free will is highly valued. In a collective culture, personal needs are less important than the group's needs. This dimension influences the role government is expected to play in markets. The United States enjoys a score of 91, placing it as the most individualistic of nations.

### **4. Masculinity versus femininity**

A measure of a society's goal orientation: a masculine culture emphasises status derived from wages and position; a feminine culture emphasises human relations and quality of life.

## Appendix 2

**Table 4:  
Spearman  
pair wise  
correlation  
coefficients**

Variable	<i>log(killed)</i>	<i>log(GDP per capita)</i>	<i>log(distance)</i>	<i>log(Christians)</i>	<i>log(culture index)</i>	<i>time</i>	<i>war</i>
<i>log(killed)</i>	1.0000						
<i>log(GDP per capita)</i>	-0.4840*** (0.0001)	1.0000					
<i>log(distance)</i>	0.4063*** (0.0011)	-0.5209*** (0.0000)	1.0000				
<i>log(Christians)</i>	-0.1180 (0.3611)	- 0.0912 (0.4809)	0.0320 (0.8051)	1.0000			
<i>log(culture index)</i>	0.2871** (0.0237)	-0.0281 (0.8282)	0.2217* (0.0833)	-0.1199 (0.3533)	1.0000		
<i>time</i>	0.3419*** (0.0065)	-0.3643*** (0.0036)	0.2365* (0.0642)	-0.1821 (0.1566)	0.1590 (0.2172)	1.0000	
<i>war</i>	0.5528*** (0.0000)	-0.2080 (0.1048)	-0.0474 (0.7143)	0.1012 (0.4338)	0.1120 (0.3861)	0.2005 (0.1182)	1.0000

Note: P-values in parantheses: \*\*\* p<0.01, \*\* p< 0.05, \* p <0.10



## Appendix 3

**Table 4:**  
Spearman pair  
wise  
correlation  
coefficients

Variable	<i>log(killed)</i>	<i>log(GDP per capita)</i>	<i>log (distance)</i>	<i>log (Christians)</i>	<i>log (culture index)</i>	<i>log(media coverage)</i>	<i>time</i>
<i>log(killed)</i>	1.0000						
<i>log(GDP per capita)</i>	-0.1560 (0.4467)	1.0000					
<i>log(distance)</i>	0.0327 (0.8740)	-0.5024*** (0.0089)	1.0000				
<i>log(Christians)</i>	0.1464 (0.4755)	-0.0882 (0.6682)	0.0430 (0.8350)	1.0000			
<i>log(culture index)</i>	-0.0903 (0.6609)	0.4114** (0.0368)	-0.0660 (0.7487)	0.0509 (0.8048)	1.0000		
<i>log(media coverage)</i>	0.2684 (0.1849)	0.3358* (0.0936)	-0.4757** (0.0140)	-0.0095 (0.9632)	0.46010** (0.0180)	1.0000	
<i>time</i>	-0.1966 (0.3357)	-0.1696 (0.4076)	0.2366 (0.2446)	-0.0563 (0.7849)	0.0895 (0.6638)	0.2643 (0.1919)	1.0000
<i>war</i>	0.5891*** (0.0015)	0.0239 (0.9077)	-0.3589* (0.0717)	0.3963** (0.0450)	0.0885 (0.6672)	0.3458* (0.0836)	-0.3116 (0.1212)

Note: P- values in parentheses: \*\*\* p<0.01, \*\* p< 0.05, \* p <0.10