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# **Misery or hope: An experiment on charity donations**

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## Abstract

Aid organizations depend on private donations, hence they need to design fundraising campaigns which resonate with the viewer to trigger those donations. Research have found aid donations to often be fueled by a negative bias, meaning that fundraising campaigns should have a ‘tragedy’ framing to generate the most donations. This thesis tests experimentally if such a negative framing leads to higher donations than a positive framing. I also explore which demographic groups give more to charity.

An experiment using a real incentive probabilistic dictator game with a student sample recruited at the Norwegian University of Life Sciences is conducted to answer the main research question “*Tragic or optimistic imagery, which better stimulates aid donations?*”.

The subjects are presented with an aid project which is either negatively or positively framed and asked to answer a questionnaire where they allocate NOK 1000 between themselves and the project. The negative framed project has text and imagery which intend to provoke negative feelings within the reader, such as guilt and sadness. The positive framed project has positive imagery and text which intend to provoke positive feelings within the reader, such as hope and happiness.

The data analysis found no difference in donations towards the two projects, or any relationship between demographics and allocations to the presented project. This result can be backed up by previous studies, however I am careful with concluding as the design showed signs of being insufficient to properly answer the research question.

As for the sub-questions on which demographic groups give more to charity, three characteristics is found to have a significant effect on subjects’ donations: education, gender, and nationality. Both the simple t-tests and the regression analysis found both female and non-Norwegian students donated significantly more than their peers. A t-test also found significant differences between the attended faculty (education) groups.

The questionnaire invited respondents to provide a reasoning for their allocation, and 6 out of 10 that answered argued why they needed the money themselves, rather than reasons for giving.

The findings from this thesis suggest that a positive or negative framing of the fundraising material do not matter in terms of soliciting donations, and that the aid organization should rather focus on who they solicit, and their motivation for donating.

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## Chapter 1 – Introduction

### 1.1 Purpose

To achieve the United Nation's Sustainable Development Goals, we must ensure that no one is left behind (United Nations, n.d.a). The inequality between countries has decreased in the last decades, but there are still considerable gaps between countries when it comes to areas such as opportunities, education, and income (United Nations, n.d.b).

The Norwegian Red Cross (2019) stated that humanitarian donors must ensure increased and predictable funding to those people who struggle to survive. Most charity organizations depend on private donations. For Norwegian aid organizations, private donations account for approx. 15% of their total income (Sivesind, 2014). To ensure high and predictable donations from private donors, charity organizations need to design campaigns and soliciting material in a way that resonates with the viewer and triggers donations. Historically, fundraising campaigns have relied heavily on imagery which depicts people, especially children, in distress to solicit an emotional response from the viewer. Negative emotions like guilt are believed to encourage donations (Burt & Strongman, 2005) and provoke empathy. However, due to scandals involving corruption and embezzlement in the aid sector, aid organizations need to appear truthful in their soliciting and demonstrate efficiency.

There has never been a strong philanthropic tradition in Norway. In 1998, 51% of private households reported that they donated money to charity, this number increased to 71% in 2014. However, when we compare the amount donated to charity by private households in 1998 and 2014 there has not been an increase in donations when we look at the sum as a share of disposable income. A much stronger tradition in Norway is volunteering time. Volunteer work is a major part of the Norwegian people's financial contribution to NGOs and SSB estimated the value of this volunteer work to be approx. NOK 77 billion in 2013 (Sivesind, 2014).



This thesis seeks to test how the framing of an aid project affects the willingness to donate. It is based on an economic experiment, using the dictator game with a student sample to examine whether fundraising campaigns should have a negative or positive framing to generate the most donations. A dictator game consists of two participants, the dictator and the recipient. The dictator is told to divide a sum of money between herself and the recipient. Because the recipient is totally passive, it permits testing research questions related to charitable giving and how it depends on the presentation of the recipient.

## 1.2 Research question

To narrow the scope of the thesis it will focus on whether the campaign should have a negative or positive framing in terms of pictures and text. The main research question is:

*“Tragic or optimistic imagery, which better stimulates aid donations?”*

I also want to examine how demographic characteristics play a part in the subject’s allocation, both in relation to the main question, but also how demographics plays a part in donations in general. I have therefore included the following sub-questions:

*1) Does age influence how the subjects allocate money?*

Age might influence how people react to negative versus positive information according to some studies. This indicates that aid organizations might benefit from determining which age group they want to target and design their campaign accordingly. Does donation towards the projects increase as the subjects age increase?

*2) Does gender influence how the subjects allocate money?*

Previous studies has found that there are some gender differences in dictator games and in terms of how we experience empathy. There is also a possibility that there is a difference between genders when it comes to how we respond to positive and negative imagery.

### *3) Does education (attended faculty) influence how the subjects allocate money?*

It is reasonable to believe that a person's education shape them and the way they view the world, and thus their willingness to participate in charitable giving, or that there is some systematic selection of students into different study programs. The result may indicate if aid organizations should target a specific group of students when recruiting members to their local student chapters.

### *4) Does nationality influence how the subjects allocate money?*

While the main target and population for this thesis is donors living in Norway, it is interesting to examine whether nationality has an impact on donations. Are there a notable difference between the donations from Norwegian and non-Norwegian subjects?

### *5) How do people justify their allocation in dictator games?*

How the subjects justify their allocation might give an indication on how fundraising campaign should be designed. Should the fundraising campaign play to the target group's conscience? Or, perhaps, should it focus on the warm glow effects of donating?

## 1.3 Structure

This thesis consists of five chapters. After this introduction chapter, chapter two presents the theory about why people give to charity, negativity vs. positivity bias, and how demographics might influence giving. Chapter three presents and argues for the chosen method, design, and data collection. Chapter four contains the data analysis and results, while chapter five discusses the findings and concludes the thesis.

## Chapter 2 – Theory

In this chapter theory relevant to answering the research questions is introduced. First, theory on why people give to charity is presented. Second, I present theories on donation preferences. Third, theory on the demographics of donors and how such characteristics may affect the willingness to donate is presented.

### 2.1 Giving to charity

Why do people donate money to charity? Several studies have addressed that question and put forward a number of possible reasons why an individual decides to donate. I review four of the main arguments.

#### 2.1.1 Pure altruism

Some donate because they are pure altruists. Altruism is defined as the “devotion to the welfare of others” (Merriam-Webster, n.d.) and it “represents unconditional kindness” (Camerer & Fehr, 2003, p.2). Altruism can be both pure and impure depending on whether the person performing the act gets any personal utility from it.

Pure altruism is when a person act in a way that increase another’s benefit even though it comes at a personal cost, and they get no personal gratification from the act. The theory of pure altruism view donations from others as perfect substitutes for their own private donation, meaning that the only payout a pure altruist care for is the public good (Andreolini, 1989). Some scholars claim that acts of pure altruism are impossible because acts of altruism are merely decisions made from pride and satisfaction. Simply the wish of getting to heaven based on good actions will make an altruistic action “impure” (Burton, 2012). The notion that all human acts are motivated by self-interest comes from the philosophy of *psychological egoism* (Bergner & Ramon, 2013).

Experiments conducted over the past decades have shown that most people care not only about their own payoff, but also the payoff of others (Camerer & Fehr, 2003). Ottoni-Wilhelm, Vesterlund & Xie (2017) point out that the motivation for donating is a

deciding factor when it comes to the success of soliciting strategies, and their double-blind experiment found that pure altruism accounted for 43.5 % of the donations while impure altruism accounted for 37.7%, making pure altruism the strongest motivation for donating.

### 2.1.2 Warm glow

The economic theory of warm glow giving was first introduced by Andreoni (1989) as an attempt to predict why people donate beyond pure altruism. Warm glow giving explains the private benefits one might get from donating, such as getting rid of guilt and other negative emotions (The decision lab, n.d.). The benefits can also be tangible, such as being entered into a raffle if they donate.

Warm glow giving will make private donations imperfect substitutes for other sources of donations, making the donor an impure altruist (Andreoni, 1989). An impure altruist can have both an altruistic and selfish reason to donate (The decision lab, n.d.).

Crumpler & Grossman (2008) found that when warm glow was the only incentive of donating money for 57% of the participants donated, meaning that the feeling of warm glow in itself is a major motivation for donations. List, Murphy, Price & James (2019) designed an experiment to test whether warm glow or pure altruism were the main motive for charitable donations among the inhabitants in Alaska. The experiment revealed that warm glow donors gave about 20% more than the pure altruism donors.

### 2.1.3 Social norm & moral

Some donate because it is simply perceived as the socially acceptable and morally sound thing to do.

Morals is one of the great influencers on a person's behavior. Moral refers to how we decide what is good or bad behavior, fairness, decency etc. Moral is decided by a person's beliefs, not by laws (Cambridge University Press, n.d.a) and what a person decides is morally sound can vary. However, we share unwritten moral and social norms and it is historically recognized that the unwritten moral laws (norms) are the source of our statutory laws (French, 1893). One such unwritten law is that "we help those who are less fortunate than ourselves".

A social norm can be defined as the baseline upon which behavior is evaluated (Krupka & Weber, 2008). Social pressure is a proven and powerful motivator for a person's behavior. When people know they are being watched they are much more likely to behave in a prosocial way even when that behavior comes at a personal cost (Panagopoulos, 2013).

An important property of social norms is that they are not only defined by outcomes, but the action itself. And whether an action is considered appropriate or not depend on the degree to which the game dictator is aware of how their action affects others (Krupka & Weber, 2008).

Posner & Rasmusen (2000) listed several different sanctions for breaking a norm, and for this thesis two are especially relevant:

1. *Guilt*: By violating norms which have been taught through the upbringing and education the person might feel guilty. This is considered an “internal sanction”. In the context of the dictator game played, participants might feel guilt if they choose to keep the full amount. As mentioned in section 2.1.2 getting rid of guilt is one reason for warm glow giving.

2. *Shame*: The person might feel less of themselves when they violate a norm, but perhaps more common is the shame which arises when another person finds out about the violation. The dictator might feel internal shame about their decision, and they might also fear external shame if the experimenter finds out how they allocated the money.

According to Sivesind (2014), 59% of respondents felt they had a moral obligation to donate to charitable organizations, especially respondents in the high-income segment felt this way. In a dictator experiment conducted by Aguiar, Garza & Miller (2008) the dictator had complete anonymity but was informed about the recipient being poor people in a third world country, 75% of the dictators allocated all the money to the recipient. When the dictator is asked to justify their reason for allocating money to the recipient almost all (80%) provide a moral reasoning.

#### 2.1.4 Soliciting

Most people need to be solicited to donate, meaning they need to be asked or nudged. Nudging is the act of gently persuading someone to make decisions or act in a certain way (Cambridge University Press, n.d.b). Nudging is controversial in the sense that it is questioned how ethically sound it is to influence people's free will, and to use privacy violations and intrusiveness to generate donations (Ruehle, Engelen & Archer, 2020). However, Ruehle et al. (2020) argues that charities main purpose is to do good, and that nudging seems a sensible tool to generate funds allowing them to continue to carry out their mission. They clarify by pointing out that if the nudging generates donations to a perfect duty (e.g., disaster relief, clean water, and hunger prevention) there is more room for ethical questionable nudging, while if the donation go towards imperfect duties (e.g., education or environmental conservation) the nudging techniques has less leeway. Summarized, the legitimacy of the nudging increase with the humanitarian consequences of the nudging.

The effectiveness of the solicitation can be measured by how much is donated (Bekkers & Wiepking, 2016) and it is necessary for a successful fundraising campaign to be targeted properly to its audience.

Both the framing and medium of the soliciting impacts the success of the campaign.

The 2020 global giving trends report by Nonprofit tech for good claims that 34% of donors are most inspired to give by social media posts, while only 7% answer that they are most inspired by printed ads.

## 2.2 Donation preferences

When a person has decided to donate, there are several factors influencing the decisions about to whom or which organization to donate. I will review some of them below.

### 2.2.1 Social distance

Most people living in developed countries prefer to donate to charities which target domestic causes. This "location preference" can be explained by both geographical and social distance (Grimson, Knowles & Stahlmann-Brown, 2020).

Social distance refers to the familiarity or unfamiliarity people might experience between themselves and people which belong to different a social, ethnic, and religious group (Hodgetts & Stolte, n.d.).

A study by Grimson et al. (2020, p. 3707) found “strong evidence of a declining radius of altruism”, meaning that the likelihood of donations declined the further away (geographically) the charitable cause was from the donor.

Similarly, Bekker (2010) conducted a survey in the Netherlands to determine “Who gives what and when?”. The willingness to donate decreased when social distance to the recipient increased. A field experiment by Sudhir, Roy & Charian (2016), who studied the effects of advertisement content, found that donations increased by almost 50% when the recipient was part of an in-group compared to an out-group.

By using an identifiable victim instead of a large statistical group one can also evoke more empathy and willingness to make personal sacrifices (Jenni & Loewenstein, 1997). Sudhir et al (2016) found that the donations more than doubled when the recipient of the donation was an identifiable individual and not part of a larger group.

Social distance does not always affect donations from individuals, according to an experiment conducted by Brown, Meer & Williams (2017). However, they did find that the donations were affected by third party quality information, indicating that the reputation of the international charity was important to the donor.

### 2.2.2 Trust and efficacy

Perceived truthfulness of an aid campaign is also relevant when it comes to donation from individuals as it impacts the trust they have in the aid organization. In the recent years there have been scandals involving the corruption of aid organizations which have weakened the trust between donor and aid organizations, perhaps the most infamous in Norway was the Norwegian Red Cross case where their CFO was sentenced to jail after he embezzled funds from the aid organization (Henriksen, 2005).

The individuals perceived efficacy of their donations also have an impact on donation decisions. Perceived efficacy is the individual's judgment about whether their donation will make a difference. Previous studies have found that individuals are more likely to

donate when they do perceive that their donation makes a difference. Individuals are also more likely to donate when they see that others have donated to the same cause, because it increases the legitimacy of the project (Bekker & Wiepking, 2016). One way to improve perceived efficacy can be to have an identifiable receiver of the donation by using personal stories and names in the fundraising campaign (Jenni & Loewenstein, 1997), which allows the donor to verify how the donation was spent if need be.

### 2.2.3 Positivity and negativity bias in information processing

“Valence asymmetries in processing” is the explanation of why people process positive and negative information in different ways. Meaning that all Information can be interpreted different based on whether the receiver has a negativity or positivity bias (Unkelbach, Alves & Koch, 2020). A person’s donation decision can be influenced by the framing of the soliciting material based on whether the viewer has a negative or positivity bias.

Contrary to popular belief, bad always wins. At least when it comes to information processing. People tend to pay greater attention to negative events, memories, feedback, impressions etc. (Baumeister, Bratslavsky, Finkenauer & Vohs, 2001). The negativity bias can likely be explained by evolution. Paying attention to the sabretooth walking towards you over the pretty flower on the path, would likely save your life. Meaning we are designed to pay more attention to negative effects than to positive (Baumeister et al., 2001).

Advantages of negative information is that people attend more to this information, remember it better and weigh it more heavily than positive information. Positive information has the advantage that people process it faster and have broader associations to it than negative information (Unkelbach et al., 2020). However, negative information contributes more to the final impression than positive information does (Baumesiter et al., 2001).

When presented with photographs, people spend more time viewing and processing the negative images than the positive ones. Previous studies also found that there are more words for bad emotions than good ones, and when people are asked to name emotions



they come up with more bad ones than positive. This suggests that it is more important to label and discuss negative emotions over positive ones (Baumeister et al., 2001).

Emotions we experience strongly influence how we act. Especially negative emotions are strong motivators to act as we want to correct and avoid these emotions. Emotions like guilt motivates socially responsible behavior to get away from the negative emotional state (Smith & Lazarus, 1990). Positive emotions on the other hand can motivate actions like sharing the good fortune through altruistic actions (Bagozzi, Gopinath & Nyer, 1999).

Nelson, Anggraini & Schlüter (2020) carried out a field experiment where they utilized virtual reality (VR) to test message framing targeting donations towards climate actions. They found no significant difference in donations between the positive and the negative message framing. They did observe a difference in emotional reaction between the two, but these differences in emotions did not influence their donation behavior.

Experiments conducted by Burt & Strongman (2005) found that charities should choose images which depict negative emotions like sadness to generate larger donations, and that images of children are particularly powerful when it comes to provoking emotional reactions.

A study by Paxton, Velasco & Ressler (2020) found that mission statements which included words associated with negative emotions increased donations by 22% compared to the mission statements which contained no sentiment. Mission statements which contained words related to positive emotions only saw a 13% increase in donations. However, the ones who had a combination of words related to negative and positive emotions had a 29% increase in donations. This indicates that nonprofit organizations should either choose words that combine negative and positive emotions, or just negative to generate the most donations.

An experiment conducted by Hilbig (2009) found that the framing of information had an impact on whether the reader perceived it as truthful or not. When the information was framed negatively the information was deemed more truthful than when it had a positive framing. This negative bias was statistically significant in even small samples. The

experimenter believed the findings were a result of negative information being processed more thoroughly than positive information which can make the information more persuasive.

Based on this research I formulate the following hypotheses

H<sub>10</sub>: There is no difference in the allocations towards the negative and positive framed project

H<sub>1A</sub>: The negative framed project receives more allocations than the positive framed project

### 2.3 The demographics of donors

Willingness to donate is not only influenced by soliciting design, biases, and ethics but also by who we are in terms of demographics.

People's generosity and biases can depend on several demographic factors, in this thesis the scope is narrowed down to age, sex, education and nationality.

#### 2.3.1 Age

The age of the potential donor can both have an impact on the willingness to donate but also to whom they donate based on the framing of the information in the fundraising campaign.

Bjälkebring, Västfjäll, Dickert & Slovic (2016) found that older adults often have a positivity bias, meaning they prefer and pay more attention to positive information. Negative emotions such as sadness and worry had a stronger motivational effect on donations from younger adults than older adults, which corresponds with the positivity bias.

There are different explanations for the positivity bias in older adults according to Carstensen & DeLiema (2018), one being that negative information is more complex and therefore more difficult to store in the memory bank. However, with this explanation one would expect the positivity effect to be stronger in older adults with cognitive failure, which is not the case according to studies.

Another explanation is that the positivity bias in older people might be a strategy for emotional wellbeing, meaning older people just prefer to be happy, and process information in a positive light to achieve this.

The 2020 global giving trends report by Nonprofit tech for good found that the age group least likely to donate are those aged 24 years or younger (2%). 26% of those aged 25-41 years donated. While those aged 58-76 years were the most likely to donate at 37%. CAF (2019) also found that the willingness to donate increases with age.

Bjälkebring, Västfjäll, Dickert & Slovic (2016) however found no difference in the amount of money donated between older and younger adults.

Based on this research I formulate the following hypotheses:

H<sub>20</sub>: The subjects age has no effect on the allocations

H<sub>2A</sub>: The subjects age has an effect on the allocations

H<sub>30</sub>: There is no bias towards the positive framed project based on the subjects age

H<sub>3A</sub>: There is a bias towards the positive framed project based on the subjects age

### 2.3.2 Gender

Some previous studies using dictator games have found gender to have an impact on generosity.

Bachke, Alfnes & Wiik (2012) conducted a dictator game to determine donor preferences and they found a significant gender difference in the dictators, with women donating an average of 133 NOK versus men who donated on average 105 NOK. The female dictators in the game also showed a preference for health and education projects.

Eckel & Grossman (1998) tested which gender is the most generous by conducting a double anonymous game which they claimed removed all other factors than selflessness as the explanation of donations. This experiment found that women on

average donated twice as much as men, meaning women are significantly more generous than men.

However, in the report from Sivesind (2014) over actual donation behavior among Norwegians, there was no gender difference in donations. Also CAF (2019) found no difference between men and women when it comes to how much money is donated.

One reason for the gender difference one sees in dictator games might be that women are more sensitive to the judgment of others (Eckel & Grossman, 1998), in this case the experimenter, and that may be why women seem more generous in dictator games, while in real life there is no difference.

A study by Rijn, Barham & Quinones (2019) found that women have higher levels of empathy than men, but that these findings might be a result of men finding it harder to report their own feelings compared to women. They also found that feelings of empathy are more likely to stimulate donations from women than men.

Based on this research I formulate the following hypotheses:

H<sub>40</sub>: The subject's gender has no effect on the allocations

H<sub>4A</sub>: The subject's gender has an effect on the allocations

H<sub>50</sub>: There is no bias towards a specific project based on gender

H<sub>5A</sub>: There is a bias towards a specific project based on gender

### 2.3.3 Education

It is commonly accepted that education play an essential role in shaping people's beliefs, morals and world view. Some studies claim that economics students tend to be less generous than other students (Bauman & Rose, 2009; Frey & Meyer, 2007; Gerlach, 2017). There is an ongoing debate on whether economic students are more selfish because of selection, meaning already more selfish people chose to study economics, or that they are more selfish students because of studying economics shapes their preferences and make them more selfish (Bauman & Rose, 2009).

Bauman & Rose (2009) found through their study that it is because of selection, and even goes so far as to claim than non-economics students suffer a “loss of innocence” (p.15) by being exposed to ideas and people within economics.

Gerlach (2017) found through their experiment that the reason for why economic students is more selfish is that they behaved in terms of how they expected other to behave. Economics students had the same notion of what fairness was and mentioned it in their comments just as often as other students, but they expected lower allocation offers from their fellow students, and therefore put forward lower offers themselves. In other words, studying economics shape their beliefs more than their preferences.

Based on this research I formulate the following hypotheses:

H<sub>60</sub>: The subject’s education has no effect on the allocations

H<sub>6A</sub>: The subject’s education has an effect on the allocations

#### 2.3.4 Nationality

The tradition for private philanthropic donations varies between country and nationality.

CAF’s world giving index gave out a report in 2019 where they listed the top ten countries where people donate to charities. Countries included in this list, among others, were the UK, Australia, New Zealand, and the Netherlands.

Mastromatteo & Russo (2017) found that inhabitants from more unequal countries are more likely to be involved in charity.

The result of an experiment conducted by Kumar, Tsoi, Lee, Cone & McAuliffe (2021) found that identification and preference for one's own nationality led to more sharing between the dictator and the recipient.

Dong & Luttmer (2009) conducted a dictator game where they looked at racial group loyalty. In the experiment the dictator was told to divide money between themselves and Hurricane Katrina victims. They were presented with images of victims of the disaster, and respondents who reported feeling close to their own ethnic group donated

significantly more when they saw pictures of victims who belong to the same ethnic group as themselves.

Based on this research I formulate the following hypotheses:

H<sub>70</sub>: The subject's nationality has no effect on the allocations

H<sub>7A</sub>: Non-Norwegians allocate more to the projects than Norwegians

H<sub>80</sub>: There is no bias towards a specific project based on nationality

H<sub>8A</sub>: There is a bias towards a specific project based on nationality

## Chapter 3 – Data and method

This chapter presents the data and method used in this thesis. First, I present the experimental design considerations. Second, I present the pilot, the presentation of the aid projects, and the conducted experiment. Third, I present the collected data and the sample. Fourth, I discuss the reliability and validity of this thesis. Lastly, I explain the ethical considerations made while designing this study.

### 3.1 Experiment design

Choosing the right experiment design is a crucial aspect of answering the research question correctly. The experiment design in this study is a classroom experiment, using a probabilistic dictator game with real economic incentives.

#### 3.1.1 Dictator game

The dictator game is an economic experiment which was originally developed by scholars to determine whether human was willing to trade personal payoff for fairness (Leder & Schütz, 2018). In a standard dictator game both the recipient and dictator are completely anonymous, meaning the dictator does not know who they are allocating money to. Based on economic theories about self-interest and rationality, the dictator is expected to keep all the money to themselves (Guala & Mittone, 2008). However, this is rarely the case in dictator games. People sometimes behave in altruistic ways and have preferences for equality, even when it comes at a personal cost (Camerer & Fehr, 2003). Thanks to its simplicity, value for money and its ability to produce statistically relevant results relatively easily, the dictator game has become a common method for testing altruism (Zizzo, 2011).

There is, however, some valid criticism of the dictator game. The dictator game is considered a “weak situation” because small changes in the experimental design can significantly change average allocations (Camerer & Fehr, 2003, p.17). Some think the dictator game is merely ‘cute’, but largely irrelevant due to the varying result it produces, and that it is time to move on to new experiments and designs (Oechssler, 2010).

Guala & Mittone (2008) compare dictator games to a soap bubble, where the slightest change can blow it away. They further point out that ultimatum games share some of the properties of a dictator game, however it is less sensitive to change because of its more complex design (In an ultimatum game, the recipient accepts or rejects the offer by the donor, and if rejects, none of them get anything). They emphasize that dictator games have such a simple design that the subjects are left to make their own considerations to a much higher degree than in more complex games, and thus prompting large variations in behavior.

Features that make the dictator game volatile include:

#### *Lack of established social norms*

In real life people rarely deal with money just being handed to them, and if they do (e.g., finding a lost wallet) they do not “split the findings” they either keep the money for themselves or hand it all in. That is why the result in dictator games are so variable, there is no set norms which apply to the situation we face in a standard dictator game. When there is no set norm to follow small changes in the design can lead to big changes in the dictator’s behavior (Guala & Mittone, 2008).

#### *Sensitivity to the presence of the experimenter*

The *experimenter effect* explains why one should design the game with complete anonymous dictators. The presence of the experimenter reduces self-regarding behavior, which suggests that the behavior of the dictator is due to concern about “what others might think” (Hoffman, McCabe, Shachat & Smith, 1994). Andreoni & Bernheim (2009) claimed that greater anonymity for the dictator will lead to more selfish behavior because there is less of a threat to social image.

This self-preservation is also present among students, when the dictator knows that the experimenter in no way can identify their decision the average allocation goes down among student samples (Camerer & Fehr, 2003).

#### *Knowledge of the recipient*

The baseline dictator game was designed in a way that the dictator and the recipient knew nothing about each other, they were both completely anonymous. However, it is not uncommon to change this condition to the dictator knowing who the recipient is, e.g.



an aid organization.

A study by Aguiar, Brañas-Garza & Miller (2008) found that in games where the dictator has absolute anonymity and where they know nothing about the recipient, nearly no one allocates money to the recipient.

Another study by Eckel & Grossman (1995) found that when the dictator knew nothing of the recipient, they donated on average 10.6 % of the money. If the dictator knew that the recipients were a well-known charity organization they donated on average 31%. These results show us that altruism is a motivating factor for human behavior in dictator games. The dictator's behavior was also completely anonymous, meaning the result cannot be explained by "the experimenter effect".

### 3.1.2 Real economic incentives

In dictator games (and experiments in general) the economic incentive can be hypothetical or real.

Chang, Lusk & Norwood (2009) concludes that non-hypothetical choices give better approximations about the true preferences. Read (2006) also concludes that designs with real incentives dominated the hypothetical ones. However, one challenge with using real economic incentives can be to make the incentives sufficiently large to make a difference and to represent a real-world situation. Read suggests making the incentives probabilistic. Making a random draw of which participant gets their allocated money enables the experimenter to offer large incentives at a moderate cost.

Clot, Grolleau & Ibanez (2018) claims that the behavior of the dictator when there are probabilistic incentives are very similar to the behavior under a regular incentive system where all the dictators are paid. They found the dictators in their experiment to be more influenced by the amount of the reward rather than the probability of receiving it. When they conducted the same experiment with hypothetical payments it resulted in far more egalitarians.

In a dictator game experiment conducted by Sefton (1992) he found that when only 25% of the subjects are paid their allocated money they are significantly more generous compared to when all the subjects are paid.

I chose to use real economic incentives based on the studies which claimed that real incentives produce results which are closer to the real preferences of the subjects. Since I am a student with limited economic resources and the main purpose of this thesis is to determine the optimal design of fundraising campaigns and not to measure generosity, the probabilistic dictator game with real economic incentives is deemed a reasonable design for the experiment.

## 3.2 Study design

### 3.2.1 Pilot

Initially the experiment design was a within-subject experiment where the subjects were presented with both the positive and negative framed aid project and left to decide whether they wanted to give money to themselves and/or one or both projects.

A pilot was conducted of the experiment with nine randomly recruited students at NMBU.

The results were that *all* the nine respondents who gave money to aid divided the sum equally between the two projects.

These results could be explained with there not being enough saliency between the two aid projects to prompt the subjects to divide unequally between the two.

To eliminate this consistency in the subjects it was decided after discussions with my supervisor to change the design of the experiment to a between-subject design.

Another solution could have been to increase the salience of the aid projects, however it was difficult to increase the negativity of the negative framed project without it crossing an ethical boundary where the aid recipient's dignity is compromised.

### 3.2.2 Presentation of aid projects

The experiment by Bachke, Alfnes & Wiik (2012) revealed that dictators were most willing to donate money to Sub-Saharan Africa, and donations to education projects were one of the top choices when the dictator was able to choose which aid project they wanted to donate to.

Based on these findings the subjects were presented with aid projects within education in Africa for the experiment.

To frame one aid project as positive (appendix A) I used words which are usually associated with positivity and which provokes feelings of happiness, hope and familiarity. The focus of the text was the positives the children are experiencing because of the aid project. The images used was bright and depicted happy children.

For the negative framed aid project (appendix B) I used words which are negatively associated and which provokes feelings of sympathy, guilt and sadness. The focus of the text was on the traumatic experiences the children have been through and what the aid project is trying to save them from. The images used depicted children in need with a sad or neutral facial expression.

I included the seal of approval from “The Norwegian Control Committee for Fundraising” in the aid project presentations as this is recognized as evidence of quality in Norway. According to Brown et al (2017) third party quality information does have an influence on donations, and by including only charities which had this approval I hoped to alleviate any judgment based solely on the donor’s quality assessment of the project.

### 3.2.3 The experiment

The design of this study is a between-subject classroom experiment.

The respondents were presented with an aid project which features education in an African country. Half of the students were presented with the positive framed project.

The other half were presented with the negative framed project.

The aid organization name and the country of the aid project was left out to eliminate any personal preferences from the respondent.

The subjects were informed that they had the chance to win NOK 1 000 if they filled out a questionnaire (appendix C).

I did not specifically mention the research question, instead I informed that the experiment is about students and charitable donations. This was done to alleviate any

speculation from the respondent, leaving me with only the spontaneous choice of donations toward the positive or negative framing.

The respondents were asked to fill in their telephone number and name on a separate page.

The respondents were informed prior to filling out the survey that the allocation is anonymous in the way that I, the experimenter, would never get to see how they allocated the money. I also left the room when the respondents were answering the questionnaire, hoping to minimize the experimenter effect.

To achieve anonymity, I gave the respondent an envelope marked with the same identifying number as on the questionnaire. In the envelope they put their name and phone number. The envelope was given to an impartial third party which randomly drew five winners and sent them the prize money in the way the respondents allocated it.

### 3.3 Data description

The data collected for this thesis is primary quantitative data collected by a cross-sectional questionnaire.

#### 3.3.1 Questionnaire

The questionnaire consists of five questions, and one optional question. The first question is about the distribution of money, which will be used to answer the main research question. Four of the questions are demographic questions which will be used to answer sub research questions which are listed in chapter 1.3. The last, open-ended question is optional and is asking for the reasoning for their decision.

#### 3.3.2 Sample

The sample is a convenience sample with the subjects being randomly recruited students at the Norwegian University of Life Sciences (NMBU).

The method design requires personal data to be collected therefore the questionnaires need to be distributed in person, and because there is currently a global pandemic the convenience sample was the only viable option. As a result of the pandemic there was

also little activity at the campus during the weeks of data collection.

The questionnaire was distributed in ten lectures across different faculties and the sample is  $n=111$ . This leaves me with a non-representative sample, and the results cannot be generalized to the student population, or the Norwegian population in general, meaning the external validity of the thesis is weakened.

A study by Carpenter, Connolly & Myers (2008) found that student behavior in dictator games connected to altruism is not representative for the general population. Students allocated significantly less money as dictators compared to the broader community. Students are 32% less likely to give away all the money to charity, with male students being the least likely to give away all. However, a convenience sample can provide relative robust indications about differences between groups and conditions as presented in the hypotheses in chapter 2.

### 3.4 Reliability & Validity

The reliability of a questionnaire is strong when the subject answers are the same each time they complete the questionnaire, referred to as test-retest reliability (O'Brian & Orn, 2018). The week prior to data collection, on 24. February 2022, Russia started a military attack on Ukraine (Beaumont & Jones, 2022). The result of the war was an immediate and severe humanitarian crisis which dominated media coverage. Big news and social media platforms were showing fundraising ads from humanitarian aid organizations, and the Norwegian government pledged two billion NOK to humanitarian aid in Ukraine (Regjeringen, 2022). It can be assumed that this will have an impact on the results as people are already in a "state of giving" because of the war. Therefore, it is possible the reliability of the data is weakened as it is not guaranteed that the subjects would have answered the same the experiment was done before the war.

It is also plausible that the historical validity is weakened because of the increased cost of living in Norway because of the ongoing war in Ukraine and corona pandemic, including high electricity prices.

### 3.5 Ethical considerations

As the questionnaire contained questions about the subjects' telephone number, which is considered personal information, the project was reported to and approved by the Norwegian Centre for research data (NSD). The subjects were provided with written information (Appendix D) about the project and how their personal data would be treated and given the chance to ask questions or opt out of answering. The subjects were then asked to sign a written consent form that they understood the information given.

As an employee of *Engineers without borders* Norway I have committed to the core humanitarian standard which states "We should not harm you." (Core Humanitarian Standard, 2014), "you" being the recipient of the aid. Therefore, in designing the aid project presentations I was mindful of the ethical considerations of using children in the material. Children and their dignity should never be exploited to for fundraising. Keeping this in mind I decided to not use any personal stories from the children in the material or use images which could compromise their dignity by depicting them in obvious distress. I also made sure to reach out to the aid organizations and get permission to use the pictures which they had on their own website, as they already have gotten posting permission from the caregivers of the children.

## Chapter 4 – Results

In this chapter I will present the statistical analysis of the collected data.

First, I present sample characteristics. Second, I test differences between groups by performing t- tests and ANOVA to compare averages across sub-samples. Before every t-test I perform an F-test to determine whether it is appropriate to use an t-test with equal or unequal variance since the sample vary between the different conditions. The ANOVA test is found in appendix E. Third, I perform regression analysis. I found no indication of multicollinearity between the variables (appendix F) which allows me to include them all in the regression. I also performed a regression analysis with interaction variables (appendix G).

All statistical analysis were performed in Excel, with an alpha level of 0.05. The negative framed project will be referred to as “Buddies”, while the positive framed project will be referred to as “Eco Moyo”.

### 4.1 Sample characteristics

The questionnaire was distributed to 111 subjects, but not everyone answered all questions. The variable “Gender” has 107 observations as 2 subjects identify with a gender which was not listed, and 2 subjects chose not to answer.

The variables “Age” (n=109), “Nationality” (n=108) and “Education” (n=109) all had two or three respondents which failed to answer.

“Education” was ultimately divided up by faculty as the sample is too small to divide by study program.

“Nationality” was divided into “Norwegian” and “Non-Norwegian” as the sample is too small to divide by country or continent. Table 1 offers an overview of the sample’s characteristics. The 26 Non-Norwegian respondents come from 19 different countries, 14 of which are in Europe (Figure 1).

Table 1: Sample characteristics

Variable	Definition	Subjects (n)	Share/average	SD
<i>Gender:</i>				
Male	Male subjects	35	32.7%	
Female	Female subjects	72		
Not listed	Gender was not listed in questionnaire	2		
<i>Age</i>	Age of subject		23.7	3.9
<i>Study field:</i>				
Bioscience	Subjects attended faculty	22	20.2%	
Economics and Business	Subjects attended faculty	13	11.9%	
Landscape and Society	Subjects attended faculty	27	24.8%	
Environmental science and Natural resource management	Subjects attended faculty	11	10.0%	
Science and Technology	Subjects attended faculty	33	30.3%	
Chemistry, Biotechnology and Food Science	Subjects attended faculty	3	2.8%	
<i>Nationality:</i>				
Norwegian	Subjects' nationality	82		



Non-Norwegian	Subjects' nationality	26	24.1%	
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Non-Norwegian subjects country

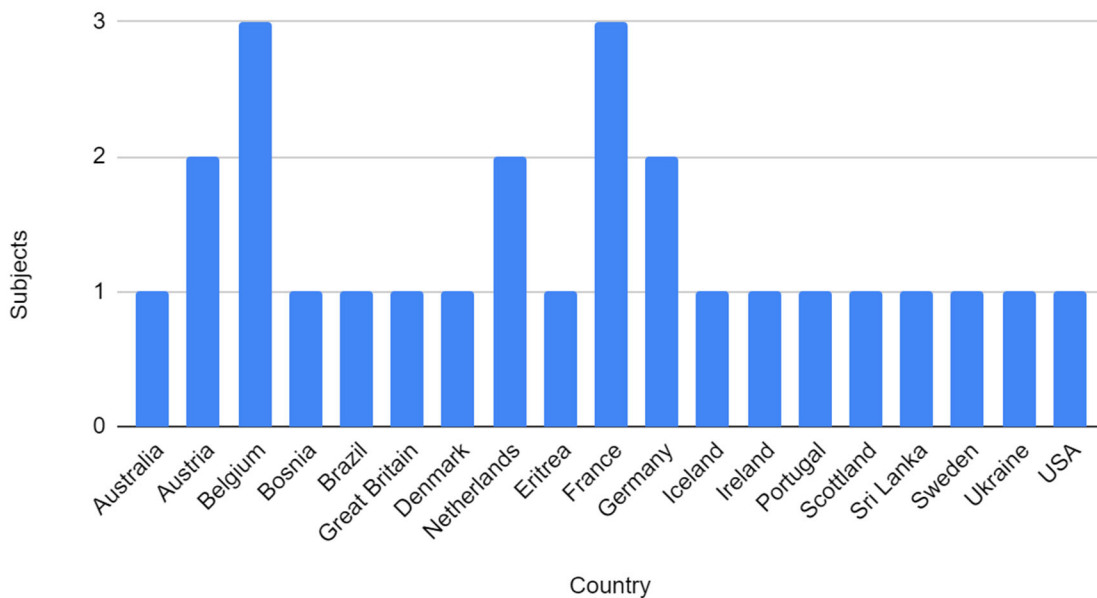


Figure 1: non-Norwegian subjects by country

## 4.2 Difference between groups

### 4.2.1 Total allocation

To get an overview of the total allocations I test for a significant difference in how the subject's allocated money between themselves and the projects.

On average the subjects (n=111) allocated NOK 527 (52.4%) to themselves and NOK 472 to the project.

14.3% of the male subjects donated the whole amount to the project, while 25% of the female subjects donated the whole amount to the project.

1 female and 8 male subjects chose to allocate all the money to themselves.

Performing an t-test with unequal ( $F > F_{crit}$ ) variances I find that there is no significant difference in how much the subjects allocate to themselves and the projects ( $p > 0.1$ ).

To answer the main research question “*Tragic or optimistic imagery, which better stimulates aid donations?*” I compare the average allocation towards the two projects to determine if there is a significant difference in donations between the two (Table 2).

Table 2: Average project allocation

	Average allocation NOK		F-test		T-test
	Yourself	Project	F	F <sub>crit</sub>	P-Value
Buddies	536	463	0.79	0.44	0.79
Eco Moyo	519	481			

n=111

Performing a t-test with unequal ( $F > F_{crit}$ ) variances I find no significant difference between donations towards the positive and negative framed project ( $p > 0.1$ ).

#### 4.2.2 Gender

To test the hypothesis about no connection between gender and money allocation I perform a t-test with equal ( $F < F_{crit}$ ) variances (Table 3).

Table 3: Total average allocation based on gender

	Average allocation NOK		F-test		T-test
	Yourself	Project	F	F <sub>crit</sub>	P-Value
Male	640	360	1.16	1.59	0.02**
Female	476	524			

n=107

\* Significant on a 10% level

\*\* Significant on a 5% level

The result shows a significant difference at the 5% level between how the two genders allocate money to the projects.

On average the female subjects allocated NOK 163 more to the project than their male counterparts.

I also wanted to test the hypothesis about whether gender played a role in which project framing the subjects preferred, specifically whether females prefer the negative framed project as former studies indicates (Table 4).

Table 4: Average project allocation based on gender

	Average allocation NOK		F-test		T-test
	Buddies	Eco Moyo	F	F <sub>crit</sub>	P-Value
Female	522	525	0.96	0.57	0.97
Male	355	366	0.8	0.44	0.93

n=107

Performing a t-test with unequal ( $F > F_{crit}$ ) variances I find no significant ( $p > 0.1$ ) difference in how females donate to the two projects.

Performing a t-test with unequal ( $F > F_{crit}$ ) variances I find no significant ( $p > 0.1$ ) difference in how males donate to the two projects.

#### 4.2.3 Education

Based on the sample size I decided to test whether there was a significant difference in how subjects allocated money based on their attended faculty. An overview of the subjects in each faculty and their allocation is found in Table 5.

Table 5: Total average allocation based on attended faculty

Faculty	Subjects (n)	Average allocation "yourself" NOK
Bioscience	22	497

Economics and Business	13	681
Landscape and Society	27	443
Environmental science and natural resource management	11	686
Science and Technology	33	542
Chemistry, Biotechnology and Food Science	3	167

n=109

Performing an ANOVA test I find attended faculty to have a significant effect on allocation on a 10% level ( $p = 0.08$ ).

Subjects from “Landscape and society” can be classified as the most generous of the faculties as they allocated on average 55.7% to the project, while subjects from the “Environmental science and natural resource management” faculty is the least generous with 31.4% allocated to the project.

The subjects from the Business and economics faculty also stand out with 31.9% allocated to the project.

#### 4.2.4 Nationality

To determine whether nationality have an influence on allocations I perform a t-test with unequal ( $F > F_{crit}$ ) variances (Table 6).

Table 6: Average allocation based on subjects' nationality

	Average allocation NOK		F-test		T-test
	Non-Norwegian (n=26)	Norwegian (n=82)	F	$F_{crit}$	P-Value
Yourself	396	576	0.83	0.56	0.02**

Project	604	424			
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n=108

The result finds a significant connection between nationality and money allocation on a 5% level.

Norwegian subjects allocated on average NOK 180 less to the project than the non-Norwegian subjects.

#### 4.3 Regression

Multiple regression analysis is used to (try to) identify the partial (isolated) impact of independent variables on a dependent variable. In this case the dependent variable is the money allocation to “project”, and the independent variables is project, age, attended faculty, gender and nationality. The output of the regression analysis is found in Table 7.

Table 7: Regression model of money allocated to project

Rgression					
SUMMARY OUTPUT					
<i>Regression Statistics</i>					
Multiple R	0.39				
R Square	0.15				
Adjusted R Square	0.07				
Standard Error	335.57				
Observations	106.00				
ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	9.000	1968431.330	218714.592	1.942	0.055
Residual	96.000	10810513.812	112609.519		
Total	105.000	12778945.142			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	885.81	301.07	2.94	0.00	
Project (B=0 E=1)	33.54	66.71	0.50	0.62	
Nationality (NN=0 N=1)	-170.18	90.81	-1.87	0.06 *	
Age	-8.92	9.65	-0.92	0.36	
Gender (M=0 F=1)	134.82	76.37	1.77	0.08 *	
Bioscience	-136.23	227.72	-0.60	0.55	
Business and Economics	-276.54	243.72	-1.13	0.26	
Landscape and Society	-170.18	218.12	-0.78	0.44	
Enviornmental Science and	-364.70	233.86	-1.56	0.12	
Science and technology	-155.93	225.91	-0.69	0.49	

B = Buddies for Africa; E = Eco Moyo  
 NN = Non-Norwegian; N = Norwegian  
 M = Male; F = Female

How much of the variance in the dependent variable is explained by the independent variables is reflected in the  $R^2$ . In the model  $R^2 = 0.15$ , meaning the independent variables do not explain much of the variation in the dependent variable. Yet it can be useful if we obtain significant coefficients for the independent variables included.

Two variables are statistically significant predictors of allocation, gender ( $p = 0.08$ ) and nationality ( $p = 0.06$ ).

The coefficient of “gender” is telling us that allocations to “yourself” decrease with NOK 135 when the subject is female. The difference in NOK 28 between the observed and predicted allocation between genders is likely due to other variables being correlated to gender, such as there being more female non-Norwegian subjects than male.

The “Nationality” coefficient predicts that the difference in allocation between the two groups is NOK 170 while the observed difference is NOK 180. The difference between predicted and stated is likely due to there being more female non-Norwegian subjects than male.

The regression analysis finds a non-significant p-value for attended faculty (0.12 – 0.55). Even though Landscape and Society (365) and Business and Economics (277) have relative high coefficient they are not significant predictors of allocation, likely due to sample composition from these faculties, which will be discussed further in chapter 5.1.4.

The variable “project” is relevant for answering the main research question, and it is not a statistically significant ( $p = 0.62$ ) predictor for how the subjects in this experiment allocated the money.

To test whether the subject’s allocation behavior towards the project depended on age, gender or nationality I chose to include interaction variables in a regression model (table found in appendix G). The model finds that none of the variables were statistically significant ( $p > 0.1$ ) which means they are not significant when explaining the subject’s allocation behavior of the subjects.

### 4.3.1 Age

It was decided to keep age a continuous variable, and not split into age groups, based on the narrow range of ages in the student sample. A regression analysis is used to determine whether there is causality between age and allocations.

The regression analysis finds a non-significant p-value for age (0.36), meaning age does not have a significant influence on the subjects allocation.

The regression model with the interaction variable "Project x Age" did not ( $p = 0.71$ ) find the relationship between age and project to be a significant predictor for the subject's allocation.

The correlation matrix and scatter plot in figure 2 illustrate that there is also a very low (0.08) degree of correlation between allocation and age.

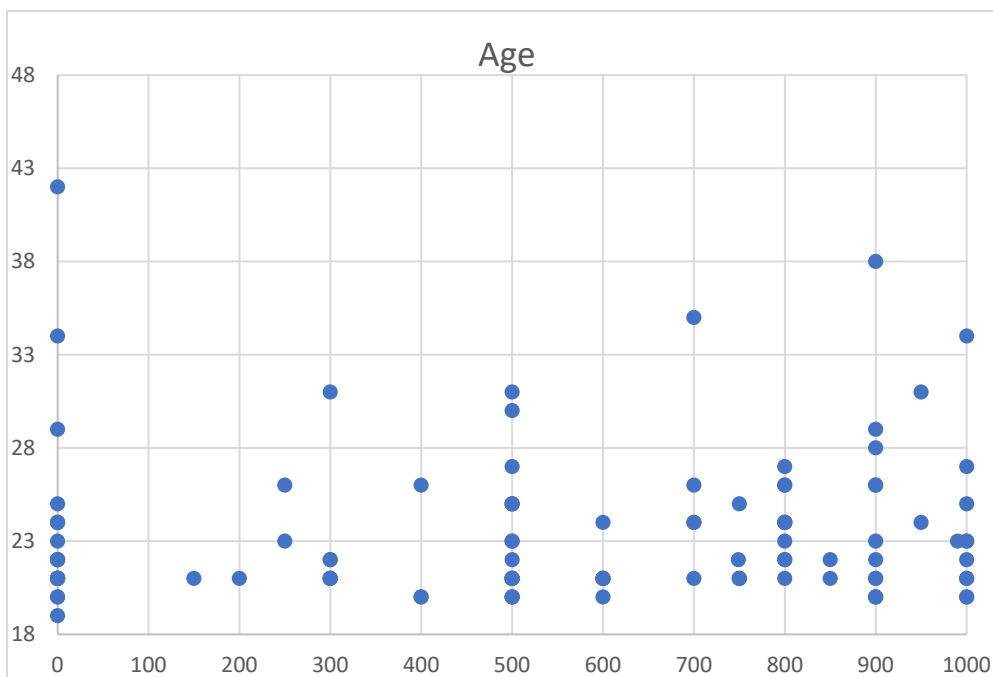


Figure 2: Scatter plot "age" and allocation "yourself"

### 4.4 Provided reasoning for allocation

The question which asked the subjects to provide a reasoning for the allocation was optional, yet 79 of 111 subjects chose to answer it.

Categories were created for the reasonings (Table 8) and the answers from the subjects

were coded into them (1 = stated, 0 = not stated). One subject's reasoning might fall into several categories, leaving me with 107 stated reasons, as illustrated in Figure 3.

### Reasons stated

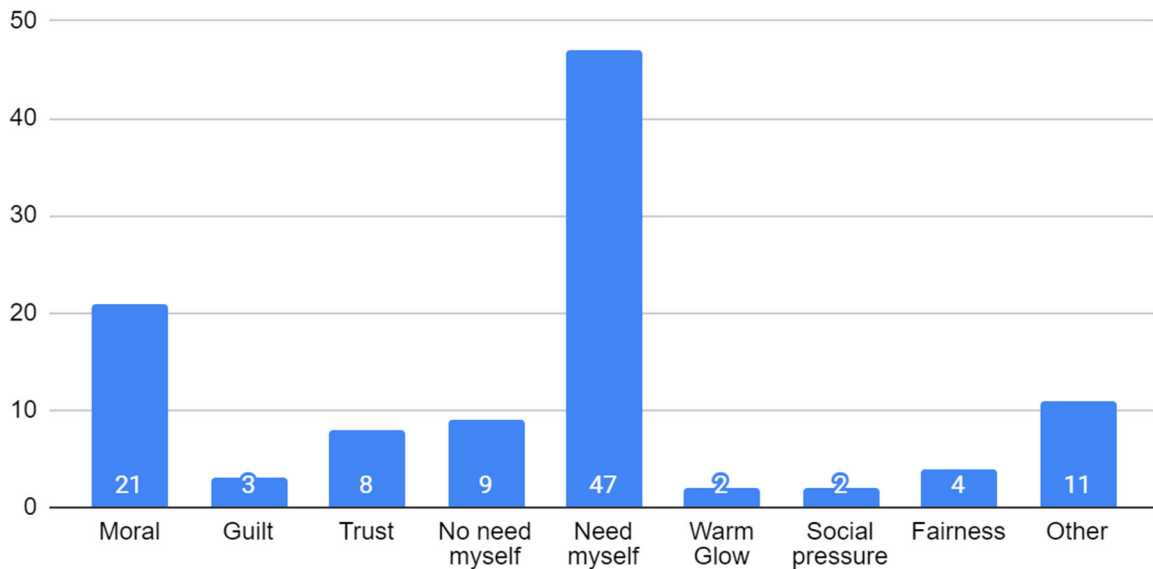


Figure 3: Stated reasoning for allocation

Table 8: Reasoning categories with examples

<b>Moral</b>	<i>“At first I was planning to give the money to myself because I am a poor student, but then I read about the projects and my conscience got me.”</i>
<b>Guilt</b>	<i>“They need the money, I would like it, but I don’t need it as much as them. I would even feel guilty using the money”</i>
<b>Trust</b>	<i>“I am questioning whether the money goes towards the promised cause, therefore I will not donate more than I can afford to lose”.</i>
<b>No need myself</b>	<i>“I don’t need the money. My situation as a student is manageable as I have parents that help me with rent. It (the money) would not improve my situation, just go to pleasure”.</i>



<b>Need myself</b>	<i>"I would like to say that I would give all the money to the aid project, but as a student that would not be realistic as economic resources are limited."</i>
<b>Warm glow</b>	<i>"It feels good to donate to charity, and the amount is manageable".</i>
<b>Social pressure</b>	<i>"Smallest amount of money that can be given to charity, within social norms".</i>
<b>Fairness</b>	<i>"I feel like that would be the fairest solution, it would provide me with some resources I could use for food etc., and it would at the same time go to a good cause and give me a feeling of helping others".</i>
<b>Other</b>	<i>"I pay money through taxes".</i>

To determine whether the project had an influence on the reasoning I performed a t-test on the different reasonings based on project averages (Table 9).

Table 9: Average reasoning based on project

Average reasoning (1 = stated, 0 = not stated)			F-test		T-test
Stated reason	Buddies	Eco Moyo	F	F <sub>crit</sub>	P-value
Moral	0.28	0.25	1.08	1.70	0.75
Guilt	0.08	0.00	0	0.58	0.07*
Trust	0.05	0.15	0.38	0.58	0.15
No need myself	0.08	0.15	0.56	0.58	0.31

Need myself	0.62	0.58	0.97	0.58	0.71
Warm glow	0.00	0.03	0	0.58	0.16
Social pressure	0.05	0.00	0	0.56	0.16
Fairness	0.00	0.10	0	0.58	0.04**
Other	0.21	0.08	2.35	1.70	0.09*

“Fairness” is the only reasoning which is significantly different on a 5% level between the two projects. 4 subjects stated fairness as a reason for their allocation towards Eco Moyo, while 0 subjects stated fairness as a reason for their allocation towards Buddies.

On a 10% confidence level both “guilt” and “other” is statistically different between the two projects. Guilt was stated 3 times as a reason for their allocation towards Buddies, and zero times towards Eco Moyo.

To determine whether gender had an influence on the reasoning I perform a t-test on the different reasonings based on gender averages (Table 10).

Table 10: Average reasoning based on gender

	Average reasoning (1 = Stated, 0 = Not stated)		F-test
	Male	Female	P-value
Moral	0.22	0.29	0.53
Guilt	0	0.05	0.26
Trust	0.04	0.13	0.28
No need myself	0.04	0.14	0.21
Need myself	0.65	0.57	0.51
Warm Glow	0	0.04	0.37
Social pressure	0.04	0.11	0.59
Fairness	0.04	0.05	0.85
Other	0.22	0.11	0.27

I find no significant difference in reasoning based on gender ( $p > 0.1$ ).

To determine whether nationality had an influence on the reasoning I perform a t-test on the different reasonings based on nationality averages (Table 11).

*Table 11: Average reasoning based on nationality*

Average reasoning (1 = Stated, 0 = Not stated)			T-test
	Norwegian	Non-Norwegian	P-value
Moral	0.2	0.47	0.02**
Guilt	0.02	0.12	0.24
Trust	0.1	0.06	0.56
No need myself	0.13	0.06	0.32
Need myself	0.58	0.59	0.97
Warm Glow	0.03	0	0.45
Social pressure	0.07	0	0.45
Fairness	0.03	0	0.28

“Moral” is the only reasoning which is significantly different on a 5% level between the two groups. 8 out of 17 (47%) the non-Norwegian subjects stated moral as a reason for their allocation, while 12 out of 60 (20%) Norwegian subjects stated moral as a reason for their allocation.

Comparison of average reasoning based on education is excluded as the sample was too small to produce interesting results and discussion.

## Chapter 5 – Discussion and conclusion

In this chapter I discuss the results of the data analysis and discuss them in light of the theory and the research questions and hypotheses presented in chapter 2. I also discuss the limitation and weaknesses in design, method and sample.

Lastly, I conclude the thesis.

### 5.1 Discussion of key results

#### 5.1.1 Half of the sum donated

The subjects in this experiment donated 47.2% of the money to charity, meaning they split the money about equally between themselves and the presented project.

The relatively high donations are suspected to be a result of both the probabilistic incentives and the social pressure they experienced by being seated next to each other and being recruited directly in front of their peers, the experimenter and the lecturer.

Sefton (1992) found that subjects in dictator games are significantly more generous when the incentive is probabilistic versus when all the subjects are paid. And social pressure is a motivator for pro social human behavior according to Panagopoulos (2013), even if their answers are not directly observable by others. The subjects may also have felt that the appropriate behavior in the situation was to donate because they saw how their actions might affect the recipient through the project presentation, which is an important part of social norms according to Krupka & Weber (2008).

#### 5.1.2 The framing did not matter in this experiment

The conducted t-test found that the subjects allocated roughly the same to the negative framed project as they did to the positive framed project. These results lend support to the  $H_{10}$  hypothesis of there being no difference in the allocations towards the negative and positive framed project. The regression analysis further lend support to  $H_{10}$  as it did not find the “project” to be a significant predictor for the subjects’ allocation, neither did any of the interaction variables.

These results make the answer to the main research question: The framing of the

imagery does not matter in terms of how much money is donated to the aid organization.

The result of no difference in donations based on framing is supported by the experiment by Nelson et al (2020) which produced the same results. However, I need to be very careful with this conclusion as the result can be explained by weaknesses in the design, which is discussed in chapter 5.2.

### 5.1.3 Age is not a predictor of donations

Age is not a statistically significant variable when trying to explain the subject's allocation behavior according to the regression and correlation analysis, supporting the null hypothesis  $H_{20}$ , age has no effect on the subjects' allocation behavior. This result is consistent with the results of the experiment conducted by Bjälkebring et al. (2016).

According to Bjälkebring et al. (2016), older adults often have a positivity bias while younger adults have a negative bias, which means that in a student sample with mostly twenty something subjects one would expect to see a bias towards the negatively framed project. However, the regression analysis with the interaction Project x Age found no significant relationship between the two. These results support the  $H_{30}$  hypothesis, there is no bias towards the positive framed project based on the subjects' age.

I am careful with concluding with this as the results can be a product of the samples composition. It is likely that age would show a greater impact on donations if the sample included a bigger range of ages. The predictions about age having an impact on allocation can be supported by one of the subjects reasoning:

*“With money today, I can help tomorrow”.*

This can be interpreted as the young students feel they need the money today, to be able to donate more when they are older and employed. Based on this statement it is reasonable to believe that if the respondents participated in the same experiment when older, they would have allocated more towards the projects.

#### 5.1.4 Gender has an influence on donations

There is a significant difference in how female and male subjects donated to the projects in this experiment. Female subjects donated on average NOK 163 more toward the project than the male subjects, confirming the previously reviewed theory about females being more generous in dictator games. 8 of the 9 subjects who chose to allocate all the money to themselves were male, which corresponds with the findings of Carpenter et al. (2008), who found male students to be the least likely to give away the whole sum. The regression result also supports the claim of female being more generous in their allocations, i.e. it is in line with the alternative hypothesis  $H_{4A}$ .

Based on the reviewed theory there was an expectation to find a bias toward the negative framed project among the female subjects as negative information is more likely to evoke feelings of empathy, and empathy is more likely to stimulate donations from women than men (Rijn et al., 2019).

However, the analysis found that female subjects allocated roughly the same towards the two projects. Additionally, the regression analysis did not find the relationship between gender and the presented project to be significant when trying to interpret the subject's allocation behavior.

If the negatively framed project evoked more feelings of empathy from female subjects than male subjects it would also be an expectation to find a difference in the reasonings provided by the subjects, however the result of the t-test found no significant difference in the reasoning based on gender.

These results support the null hypothesis  $H_{50}$ , the subject does not have a bias toward one of the projects based on gender. However, these results may be inaccurate due to lacking saliency between the two projects.

#### 5.1.5 Attended faculty might have an influence on donations

The ANOVA found significant differences in how subjects from different faculties allocated money. Lending support to the  $H_{6A}$  hypotheses about education having an effect on allocations.

The subjects who attend the Business and Economics faculty is one of the least generous subjects in this experiment with an average of 68.1% allocated to themselves. This result aligns with the previously reviewed theory which state that economics students are generally considered to be more selfish than those who attend other faculties (Bauman & Rose, 2009). Based on previous studies and the result of the ANOVA we can speculate in whether there is a connection between generosity and education.

However, the regression model found that none of the faculties were statistically significant, meaning we cannot claim education to be a significant predictor of allocation behavior.

The reason why the regression model does not find education to be a significant predictor for allocation even though the t-test find significant differences between the groups can likely be explained using the correlation matrix in appendix F.

Gender is according to the regression a significant predictor of the subject's allocation. By looking at the correlation between gender and faculty we find a stronger positive correlation (0.26) between female students and the faculty which appear the most generous (Landscape and society) than between females and the Business and Economic faculty (-0.10). As females are predicted to be more generous than male subjects it is reasonable that a faculty with a higher share of female subjects appear more generous. Based on the correlation coefficients we can argue that the faculty in itself is not a significant predictor of allocation, however it may appear so because of the composition of subjects attending the faculty.

This claim is further supported by looking at the correlation between nationality and education. Non-Norwegian nationality are a significant predictor of the subject's allocation in the regression (discussed in chapter 5.1.6), and it makes sense that the faculty which appear the most generous is the only with a negative correlation (-0.29) with nationality. The negative correlation coefficient both strengthen the claim that there is probably no relationship between education and allocation, and the claim in chapter 5.1.6 that the subject's nationality has an influence on donations.

### 5.1.6 Nationality has an influence on donations

There is a significant difference between how much Norwegian subjects allocated to themselves versus non-Norwegians in this experiment. The regression analysis also found nationality to be a significant variable when it comes to predicting allocation.

These results support the H<sub>7A</sub> hypothesis, non-Norwegians allocate more to the projects than Norwegians.

These results are consistent with the reviewed theory. According to Sivesind (2014) Norwegians do not have a strong tradition with donating money, we would rather engage in volunteering our time. This claim can be supported through one of the subject's reasoning:

*“I work for a humanitarian organization. Since I support through work, I don't need to support economically”.*

Also, Norway is not on CAF's top ten list over countries whose people donate, Norwegians do not live in a particularly unequal country, and they do not share nationality with the aid recipients, which were all predictors of donations according to reviewed theory.

Based on the small sample it is challenging to say anything about whether there was a preferred project based on nationality. A t-test was not performed because of the small “non-Norwegian” sample, but there was included an interaction variable in the regression variable. The interaction variable “Project x Nationality” was not statistically significant, meaning I cannot claim that the relationship between nationality and the presented project can explain the subject's allocation behavior. The correlation matrix show a very small, positive correlation between nationality and the positive framed project (0.03), however it can probably be explained by the small correlation between gender and the positive framed project (0.04).

As the sample is so small, I refrain from answering the H<sub>80</sub> hypothesis since there is a high probability of conducting a type 2 error.



### 5.1.7 Most subjects state a reason for why they need the money themselves

The majority of the subjects (60%) who provided a reasoning for their allocation stated a reasoning of “I need the money” instead of the predicted moral reasoning based on previous studies by, for example, Aguiar et al. (2008).

It appears that most of the subjects were more concerned with their own reasons for keeping some of the money versus what the donation means for the receiver. These findings can indicate that fundraising campaigns perhaps should be designed with a message of what the donor receives from donating, such as a better conscience, self-esteem etc., known as warm glow giving. A study by Ottoni-Wilhelm et al. (2017) claim that the motivation for donating is a deciding factor for the success of fundraising, which support the claim of designing fundraising campaigns targeted at peoples reasoning for donating instead of the framing of the receiver. An experiment by List et al. (2019) also found warm glow donors to be more generous than pure altruists, which further support the notion of designing fundraising material which targets warm glow donors.

Determining whether the subjects reasoning differed between the two projects is beneficial as this could give an indication about the subject’s feelings towards the two project framings.

The analysis found that three of the reasoning categories were significantly different between the two projects, “Other”, “Fairness” and “guilt”.

The reasoning of “fairness” was surprising as it was stated 4 times as a reason to donate towards the positive project and zero times towards the negative project.

*“I feel like that would be the fairest solution, it would provide me with some resources I could use for food etc., and it would at the same time go to a good cause and give me a feeling of helping others”.*

One could assume that the negative project would be the one to get donations fueled by a reasoning of fairness as negative information provoke feeling of sympathy and empathy, which in turn can provoke thoughts such as “the world is unfair”.

Unkelbach et al (2020) found people to have broader associations with positive

information. Feelings of association might lead to feelings of fairness because of the notion “We are the same, but do not have the same”. By sitting in their modern school filling out a questionnaire about a relatively primitive school the subjects might have felt an attachment to the recipient and their situation, which invoked feelings of fairness.

The reasoning of “guilt” was less surprising as it was stated three times as a reason to donate towards the negative project and zero times towards the positive project.

*“They need the money, I would like it, but I don't need it as much as them. I would even feel guilty using the money”*

By reading and processing the information and imagery in the negative framed project it is not unexpected that the subjects felt guilt, and that the guilt in turn influenced their allocation decision. Getting rid of guilt by donating is a form of warm glow giving (The decision lab, n.d.). Negative emotions are a strong motivator for action, in this case allocation to the project, as the person want to correct the negative emotion according to Smith & Lazarus (1990).

Reasoning also varied with the subject’s nationality. The “moral” reasoning showed a significant difference between the two groups, Norwegian and non-Norwegian. Morals have a strong motivational effect on our behavior (Cambridge University Press, n.d.a), and it is reasonable that the more generous group of the two (non-Norwegians) stated a moral reasoning for their allocation more often than the Norwegian subjects.

## 5.2 Weaknesses and limitations

I am careful with concluding without addressing the weaknesses and limitations which presented itself during the process of writing this thesis.

### 5.2.1 Design weakness

The biggest flaw with the design was perhaps the recruitment method and the execution of the game. As Camerer & Fehr (2003) pointed out, small changes in design can significantly change the subject’s allocation.

By recruiting subjects directly in a group setting there was little room for the subjects to say no while still following social norms. The subjects might have felt pressured to participate and this might be reflected in the motivation to follow instructions.

Very few followed the instructions about the envelope even though there was given both oral information and very clear written instructions about it. If the subject did not take the time to read the one highlighted sentence about the envelope it is reasonable to believe they did not take the time to read the project description either. The subjects not reading thoroughly can be a reason for why the projects got roughly the same amount, because very few took the time to read and digest the information about the project.

The execution of the game took place directly after recruitment, by having them fill out a questionnaire during class. This approach might have given the subject a sense of urgency and time pressure. A feeling of urgency would have further encouraged them to skim over the information and not read it thoroughly. The subjects might also have been distracted by their peers, making it difficult to read and digest the information.

It is also reasonable to believe that filling out the questionnaire during class while seated next to each other increased the amount of donations made from social pressure. According to Panagopoulos (2013) people are more likely to participate in pro-social behavior when they know they are being observed. In a situation where you are seated directly next to your peers, it is likely you feel that they are observing your behavior and thus act, in this case allocate, in a socially acceptable manner.

Being seated directly next to each other might also have had an impact on the subjects' feelings toward the project. As Bekker & Wiepking (2016) pointed out, you are more likely to donate towards causes which you see others donate to as it increases the legitimacy of the cause. If the subject saw their peer donate to the same project as they were presented with it is possible they donated solely because their peer did. On the other hand, if the subject sees their peer donate to the opposite framed project, they may refrain to donate to their presented projects as they think their peers project looked more worthy/trustworthy.

The fact that few of the subjects fully understood the instruction about the envelope also supports the presence of an "experimenter effect" on the allocations. This effect can

increase donations as the subjects believe the experimenter will see their allocation, be able to identify them and judge them. Andreoni & Bernheim (2009) claim that the absence of anonymity can be interpreted by the subject as a threat to social image. Hoffman et al. (1994) explain that self-regarding behavior decreases when the subject is concerned about others opinion about them.

If the subjects experienced less social pressure by being in a more private setting there might have been more donations fueled by sympathy towards the recipient (project), and less donations made out of social pressure, and thus a bigger difference between the donations towards the two. If donations were made out of a mentality that the subject "had to" donate they might have experienced an indifference to the cause of the project.

This theory is supported by the subject's reasoning. Surprisingly, 47 of the 79 subjects chose to provide a reasoning of why they personally needed the money instead of why they chose to give some away.

*"I am a student so the amount of money I receive each month is limited. Especially when I pay for rent, food, and my horse".*

Even the subjects who gave half/most of the money to the project felt the need to explain why they kept some themselves instead of why they donated.

*"I only give half because I don't have a good earning as a student, and it is not sustainable to help others before taking care of yourself".*

Some even stated directly in the reasoning that they donated purely out of social pressure.

*"Smallest amount of money that can be given to charity, within social norms".*

The reason why the subjects felt the need to explain why they needed money instead of why they donated might also have been as they experienced feelings of guilt or shame for keeping some money. If the subject felt joy over donating but guilt over keeping some themselves, they might have felt the need to address the feeling of guilt by explaining their decision in the reasoning, a theory which is supported by Baumeister et

al. (2001) which claim that it is more important to label and discuss negative emotions over positive ones.

### 5.2.2 Project presentation weakness

As previously mentioned, I was mindful of the fact that the material depicted children and it was therefore a need to be particularly aware of the ethical implications of the text and pictures used. As a result of the ethical considerations the treatment may not have been strong enough to produce significant differences between the subject groups. The concern of there not being enough salience between the two projects presented itself already in the pilot. Changing the design of the experiment from an in-between to a between treatment was an attempt to minimize the salience problem. However, the result of the experiment indicate that the solution of changing design might not have been enough.

If the projects instead depicted adults or animals/nature there would be less moral constraints as adults can consent to their stories being told and their pictures used, and the salience between the two projects could be increased by using more distressing pictures. By using adults in the project presentation there could also have been included personal stories, which could have increased the salience.

Increasing the salience could probably also have been achieved by changing the medium of how the projects were presented. As presented in chapter 2.1.1, only 7% of donors stated printed ads to be the medium that most inspired giving. The selected medium chosen to present the projects in this thesis can be defined as a printed ad, and perhaps a more interactive medium such as a video with pictures and sound would have increased the salience between the projects.

### 5.2.3 Sample weakness

The sample size was comparable other studies, however as I had several conditions I was testing for, a bigger sample might have been needed to get significant results. Especially the “age” variable suffered from the sample composition, by using students the age range was not big enough to get a statistically significant reading of how age influence allocations. The variable “nationality” could also have benefitted from

a larger sample as it would have allowed for further analysis beyond just determining differences between the two groups “Norwegian” and “Non-Norwegian”, but rather between countries or continents.

Also using a student sample is pure convenience as it has been proven to not produce representative results which can be generalized to the population, in this case, the Norwegian population.

### 5.3 Conclusion

In this thesis I have conducted an experiment in an attempt to determine whether fundraising campaign should be designed with a negative or positive framing. The framing of the projects was not found to have any significance for the total allocations, or for the allocation behavior of any of the sub demographic groups. However, due to the design of the experiment I am careful with concluding based on these results.

The additional purpose of this thesis was to explore which demographic groups give more to charity. The variables which turned out to be statistically significant to the subject’s allocation were nationality, gender, and possibly also education.

The data analysis found females to be the more generous than men, which is supported by some previous studies on the subject of gender and generosity. These results indicate that it might be valuable to determine what triggers donations by females and that fundraising campaigns should be designed with the intention of inducing feelings of empathy. Women are more likely to report on feelings of empathy according to reviewed theory, which in turn is proven to solicit more donations.

It is important to notice that the generosity difference between men and woman are only seen in laboratory experiments and not observed in real life donations according to Sivesind (2014) and CAF (2019).

In terms of nationality, the data showed non-Norwegians to be significantly more generous than Norwegian subjects, but with no bias towards the positive or negative framing. These results indicate that aid organizations probably should include at least

some English material in their fundraising campaigns to target a broader and more generous audience compared to solely focusing on Norwegian-speaking donors.

The simple comparison of attended faculty found a significant effect on the subject's allocation. However, the correlation between education, gender and nationality indicated that these result where merely a result of the sample composition and that education did not in fact have an effect on allocation, as shown in the regression analysis.

The reasonings provided by the subjects proved to be a valuable contribution to explain not only the result, but also the weaknesses and limitations of the design. The subjects' stated reasoning can be interpreted as the subject being more concerned of how the allocation might benefit themselves instead of the receiver, suggesting that aid organizations should design their campaigns in a way that highlight the worm glow effects of donating. Even though the reasoning was optional, I found it to be essential for a more in-depth discussion, and it would be of great value to ask for the subjects reasoning also in future experiments.

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# Appendix

## Appendix A



### A unique rural school provides hope

(This is a real project which is anonymized in this questionnaire)

This organisation runs a private primary school which offers free education to children from a poor village nearby. The aim is to improve the quality of life for local children.

The school is farm-based with a sustainable design where they catch and store rainwater, use solar power to meet their energy needs, and compost their waste.

The children start their day with reading storybooks in groups, before porridge is served for breakfast.

Throughout the day they are given lessons in various subjects such as literacy, making use of natural resources, taekwondo, arts and crafts, etc. This provides the children with both a valuable and important education for the future, and the opportunity to enjoy their childhood as children.



**Your donation will ensure that the children continue to get free breakfast and lunch, uniforms, and school materials.**





## Education for traumatized children

(This is a real project which is anonymized in this questionnaire)

The country has been ravaged by war and conflict for decades. Countless children have been orphaned and recruited as child soldiers.

These children are being attacked, kidnaped, and sexually abused. The sexual abuse result in pregnancies and new babies born into the same dire conditions.

Children born from sexualised violence usually end up at the lowest rank of society when it comes to love, care, basic needs, and education.

This organization aims to improve these victimized children's lives by giving them the opportunity to attend school.

The children are provided with 12 years of education, uniforms and all required school material.



**Your donation will directly help these children  
with their education and future.**



## Questionnaire about students & donations

Norwegian University of Life Sciences (NMBU)

**Consider the following situation:**

You have just earned NOK 1000 and can allocate the money for your own use and/or to the presented aid organisation. You can choose to give all the money to one alternative, or to distribute it between the two. The **TOTAL** must be NOK 1000. How would you distribute the money?

Yourself                    \_\_\_\_\_ NOK  
+  
Aid organization        \_\_\_\_\_ NOK  
  
=                                **1000 NOK**

**Optional:** Could you please provide a short explanation for your decision?



We would also like to ask you about some background variables:

1. Age:

\_\_\_\_\_

2. Sex

Female

Male

Not listed above

3. Nationality:

\_\_\_\_\_

4. Which faculty are you currently attending (Please tick the relevant box and specify your programme on the line):

Bioscience (Biovit)  Programme: \_\_\_\_\_

Chemistry, Biotechnology and Food Science (KBM)  Programme: \_\_\_\_\_

Environmental Science and

Natural Resource management (MINA)  Programme: \_\_\_\_\_

Landscape and Society (Landsam)  Programme: \_\_\_\_\_

School of Economics and Business (HH)  Programme: \_\_\_\_\_

Science and Technology (Realtex)  Programme: \_\_\_\_\_

Veterinary Medicine (Vet)  Programme: \_\_\_\_\_

By filling out this questionnaire you may be selected as the winner of the money you allocated to yourself.

The winners will be randomly drawn in April.

The prize money will be distributed by VIPPS or PayPal, therefore you must fill out the **third page** with your phone number/information and put it separate from the questionnaire in the included **envelope**.

IN ORDER TO ENSURE THE ANONYMITY OF YOU AND YOUR ALLOCATION CHOICE WE ASK YOU TO PLEASE PUT THIS PAGE **SEPARATE** FROM THE QUESTIONNAIRE AND IN THE ADJOINING ENVELOPE.

Mobile number connected to your VIPPS: \_\_\_\_\_

**OR IF YOU DO NOT HAVE VIPPS**

Information connected to your PayPal: \_\_\_\_\_

I have received and understood information about the project "An Experiment on Development Aid Allocations" and have been given the opportunity to ask questions. I give consent to participate in the survey.

I give consent for my personal data to be processed until the end date of the project, approx. 15.05.2022.

-----  
(Signed by participant, date)

## **Are you interested in taking part in the research project: "An Experiment on Development Aid Allocations"?**

This is an inquiry about your participation in a research project which will study how students allocate money between themselves and aid organisations, in the presence of real economic incentives. In this letter we will provide information about the purpose of the project and what your participation will involve.

### **Purpose of the project**

This is a master thesis where I will ask approximately 200 students to fill out a short questionnaire to analyse how students allocate money to aid organisations. I will also ask you for some background variables to see how answers differ between age, gender, nationality and study programme. The findings in this thesis will be relevant for how aid organisations choose to target their fundraising efforts.

### **Who is responsible for the research project?**

Norwegian University of Life Sciences is the responsible institution for the project.

### **Why are you being asked to participate?**

You are asked to participate in this project because you are a student and currently attending the Norwegian University of Life Sciences (NMBU).

### **What does participation involve for you?**

If you chose to take part in the project, this will involve that you read about a development aid project and fill in a paper-based survey. It will take approx. 5-7 minutes.

When all the surveys responses are collected, a neutral third party will randomly draw five winners which will receive the money in line with what was allocated in the questionnaire. In order to ensure your anonymity the neutral third party will be the only one to open the envelope containing your personal information

### **Participation is voluntary**

Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason by contacting [bettina.kolstad.haskjold@nmbu.no](mailto:bettina.kolstad.haskjold@nmbu.no) All information about you will then be deleted. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

### **Your personal privacy – how we will store and use your personal data**

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (GDPR).

- The only people who will have access to the personal data is the Master student, Bettina Kolstad Håskjold, and the supervisor, Arild Angelsen, professor at the School of Economics and Business (Handelshøyskolen), NMBU.
- The envelope which contains your personal data will be stored separately from the questionnaire and in a locked office.

Your personal data will only be used to send you the prize money if you are drawn as the winner. The money which the winners allocated to themselves will be sent via VIPPS or PayPal, while the

money allocated to the aid project(s) will be sent directly to the organization(s). The winner may request a receipt to ensure that the money was sent to the organization(s).  
You will not be recognizable in the thesis.

**What will happen to your personal data at the end of the research project?**

The project is scheduled to end 15.05.2022. At the end of the project your personal data will be destroyed by shredding.

**Your rights**

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

**What gives us the right to process your personal data?**

We will process your personal data based on your consent.

Based on an agreement with Norwegian University of Life Sciences Data Protection Services has assessed that the processing of personal data in this project is in accordance with data protection legislation.

**Where can I find out more?**

If you have questions about the project, or want to exercise your rights, contact:

- Norwegian University of Life Sciences via Bettina Kolstad Håskjold at [bettina.kolstad.haskjold@nmbu.no](mailto:bettina.kolstad.haskjold@nmbu.no) or Arild Angelsen at [arild.angelsen@nmbu.no](mailto:arild.angelsen@nmbu.no)
- Our Data Protection Officer: [personvernombud@nmbu.no](mailto:personvernombud@nmbu.no)
- Data Protection Services, by email: ([personverntjenester@sikt.no](mailto:personverntjenester@sikt.no)) or by telephone: +47 53 21 15 00.

Yours sincerely,

Arild Angelsen  
Project Leader & Professor

Bettina Kolstad Håskjold  
Master student

## Appendix E

Anova: Single Factor						
SUMMARY						
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>		
Bioscience	22	10940	497.27	199639.83		
Economics and Business	13	8850	680.77	117307.69		
Landscape and society	27	11950	442.59	82250.71		
Environmental science and natural resource management	11	7550	686.36	50045.45		
Science and Technology	33	17899	542.39	119537.25		
Food science	3	500	166.67	83333.33		
ANOVA						
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	1195340.53	5.00	239068.11	2.01	0.08	2.30
Within Groups	12230960.28	103.00	118747.19			
Total	13426300.81	108.00				

## Appendix F

	Correlation									
	Yourself	Project (B=0 E=1)	Age	Gender (M=0 F=1)	Nationality (NN=0 N=1)	Bioscience	Business and Economic	Landscape and Society	Environmental science and Technology	Science and Technology
Yourself	1									
Project (B=0 E=1)	-0.02696	1								
Age	0.079317	0.080375845	1							
Gender (M=0 F=1)	-0.21501	0.046941821	-0.17993	1						
Nationality (NN=0 N=1)	0.225323	0.033102422	-0.31009	-0.073894892	1					
Bioscience	-0.05054	-0.039132327	0.045998	-0.020315236	0.050754592	1				
Business and Economic	0.158702	0.035820549	0.282535	-0.104424458	0.079455822	-0.180300103	1			
Landscape and Society	-0.1306	0.098479705	0.107055	0.260391524	-0.286538462	-0.274920707	-0.213143397	1		
Environmental science and Technology	0.149922	-0.024518426	-0.15257	0.107355614	0.050192856	-0.164096876	-0.127222739	-0.193988605	1	
Science and Technology	0.017442	-0.007689765	-0.19948	-0.264437282	0.241236874	-0.324236059	-0.251377117	-0.383298589	-0.228786334	1

## Appendix G

Regression with interaction variables					
<b>SUMMARY OUTPUT</b>					
<i>Regression Statistics</i>					
Multiple R		0.400			
R Square		0.160			
Adjusted R Square		0.052			
Standard Error		339.678			
Observations		106			
<b>ANOVA</b>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	12.000	2048482.017	170706.835	1.480	0.146
Residual	93.000	10730463.124	115381.324		
Total	105.000	12778945.142			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	-5.311	436.205	-0.012	0.990	
Project (B=0 E=1)	73.209	564.647	0.130	0.897	
Age	14.175	16.807	0.843	0.401	
Gender (M=0 F=1)	-125.693	105.680	-1.189	0.237	
Nationality (NN=0 N=1)	123.492	129.797	0.951	0.344	
Bioscience	155.733	247.966	0.628	0.532	
Business and Economic	313.943	264.588	1.187	0.238	
Landscape and society	199.240	239.243	0.833	0.407	
Environmental science and Technology	397.181	251.246	1.581	0.117	
Science and technology	183.113	245.614	0.746	0.458	
Pro x Gender	-12.813	145.566	-0.088	0.930	
Pro x Nationality	97.089	175.253	0.554	0.581	
Pro x Age	-7.426	19.884	-0.373	0.710	

B = Buddies for Africa; E = Eco Moyo  
 NN = Non-Norwegian; N = Norwegian  
 M = Male; F = Female  
 Pro = Project