

Beyond Dollars and Cents: Unveiling the Intricacies of Philanthropy through Behavioral Economics and the Art of Framing in Charity Outreach

**Beyond Dollars and Cents: Unveiling the Intricacies of
Philanthropy through Behavioral Economics and the Art of
Framing in Charity Outreach**

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For

Ms Rosie Ching's Statistical Class



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Abstract

In 2024, the United Nations (UN) launched an appeal of US\$1.6 billion to address the ongoing humanitarian crisis in Somalia, which was exacerbated further by the El Niño phenomenon. Climate change and geopolitical conflicts are expected to give further rise to similar humanitarian crises in different parts of the world. In light of these epochal events, there is a need to address how humanitarian organizations can increase the efficiency of their outreach in this modern information age, where digital channels tend to get overloaded with information amid the relentless buzz of social media. Previous research has shown an association between framing effect and contribution amounts by donors. We leveraged on findings from past studies to investigate the use of different framings in boosting donations and volunteer rates.

Several limitations of these outreach through social media have been pointed out: the safety of the donation site, the ability to captivate one's attention, and the texts that accompany the poster. After much discussion, we decided to start our research regarding the framing effects of posters and evaluate how it may affect the value of donations accumulated.

Furthermore, this research of charity aligns with our moral values. The four of us are actively involved in community work and believe that our research could be fruitful. We wish to understand the economical and psychological aspect of charity outreach through this research. We would like to test three different types of framing and evaluate its effectiveness. We hope to further expand our research in the future and attempt to help charity organizations boost their donations and volunteer rates.

1. Introduction

1.1 Background about Charity Organizations

The notion of charity donation could be traced back to religious origins. Hinduism preaches about the concept of “dāna”, which is the custom of cultivating generosity (BBC , 2024). Additionally, Judaism sermonized about the notion of “tzedakah” (DeGroot, n.d.). This emphasizes a form of justice and social responsibility. Likewise, Christianity has a parable in the new testament about the Good Samaritan. This parable is told in Luke 10:29-37, which promotes the idea of engaging in good deeds as a form of ritual cleansing (BAS , 2023). Moreover, the Islam too, has a concept known as “zakat”. It is a form of worship through the means of wealth, by engaging in charity to end poverty (Muis, 2023).

Knights Hospitaller is the earliest form of charity organization that has been recorded in history, traced back to the 1070s. It was founded by a group of Italian merchants trading with Palestine. They were a volunteer group, who ran a hospice to provide healthcare to the sick, poor and injured pilgrims within Jerusalem. Its legacy has continued and it is now known worldwide as St John’s Ambulance (Conterio, 2022).

With the industrial revolution and the rapid advancement in technology, the available forms of charity have transmuted. 7.1 billion people worldwide use a mobile phone. The ease and convenience of mobile phones have caused charity donations to shift in their favor. The modernized form of donations include the followings:

1. Online Donation and Crowdfunding
2. Raising Awareness through Social Media
3. Mobile Giving and Applications
4. Data and Analytics for Improvement
5. Online Volunteer Platforms
6. Cryptocurrency Donations

94.6 million dollars were raised through a single online platform, givings.sg, in 2023. Consequently, this highlights that the approach through online campaigns is significantly crucial in raising funding. Therefore, this paper attempts to study the effect of “message framing” within a campaign poster to allow online platforms to boost its fundraising.

1.2 Trend in Charity Outreach

According to Charity Aid Foundation (2023), a discernible decline in the World Giving Index by a factor of 1 transpired between 2022 to 2023. However, there has been a contrasting trend that has transpired since the COVID-19 pandemic. The upward trajectory appears to be perpetuated by an increase in focus on charity outreach during the COVID-19 pandemic, considering its widespread calamity. There is a genuine concern that the World Giving Index may plateau or experience a decline as the state of the world assumes a status quo.

Analysis of the World Giving Index in 2023, Indonesia has consistently clinched the top position for the highest rate of donations for the past decade, with the United States expectedly ranking within the top five. Despite the top-tier position, philanthropic activities have fallen by USD\$14.97 billion (approximately 3%) due to high inflationary pressure within the economy (YahooNews, 2023).

Conversely, donation rates from burgeoning economies have been on the climb. New trends have reflected that China, Vietnam and Russia had noteworthy increases in their giving index.

Acknowledging these trends is imperative to account for any disparity in the acquired data for this experiment. Recognizing the variation in cultural aspects and philanthropic trends enable a more comprehensive understanding of the limitations of the experiment. Should the data be skewed, it may be due to confounding variables present including culture, racial and economic factors. Thereby, facilitating a more robust interpretation of the acquired data.

1.3 Behavioral Aspect of Charity Engagement

Neoclassical Economics assumes that every individual behaves rationally. Individuals endeavor to maximize utility by consuming at the point where marginal cost (MC) equals to marginal benefit (MB). Within this framework of assumption, prospective donors would derive utility (MB) engaging in philanthropic endeavors in the the following various forms:

1. Tax Exemptions
2. Heighted Happiness
3. Reinforcement of Personal Values
4. Increase in Self-Esteem
5. Fostering a Sense of Belonging

Simultaneously, altruistic acts incur costs (MC). These costs include:

1. Time loss
2. Monetary Expenditures
3. Risk of Encountering Fraudulent Donation Platforms
4. Others

In this scenario, an Individual would engage in philanthropy should the MB outweigh the MC, up till the point where MB is equivalent to MC. On the contrary, Behavioral Economics has a conflicting school of thought.

Behavioral Economics comprises Psychology and Economics. It challenges conventional assumptions of rationality and expected utility models by scrutinizing human behavior. It posits that individuals may deviate from rational irritation behavior shown in the traditional economics model due to various biases. In particular, the framing effect posits that individuals may be influenced in the decision making process by how information and choices are presented to us. Under this framework, certain variables play a pivotal role in propelling individuals to consume charity until the equilibrium point, where MC does not equal to MB.

The paper undertakes a series of experiments to examine three distinct variables and their associated framing effect on individuals, eventually leading to irrational behavioral patterns in charitable consumption. By analyzing these variables, this paper attempts to shed light on the framing effect underlying irrational behavior in the domain of charitable consumption, thereby enriching the theoretical landscape of Behavioral Economics.

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1.3.1 Framing effect 1 - Types of Self-Interest Motivation

The influential work of Dr Andreoni introduces the “warm glow theory”, a behavioral economic study that examines the motivation behind altruistic behavior. The motivations are classified into three: purely altruistically, pure egotistically and impurely altruistically. His findings suggest that individuals engage in charitable behavior due to egocentric reasons ingrained in human behavior - a “warm glow” originating from a sense of contentment for their philanthropic activities. Building on Dr Adreoni theory, this paper attempts to investigate which specific self-interest aspect exerts a more sizable motivation on donation behavior.

1.3.2 Framing effect 2 - Social Identity Group

The frequently taught Social Identity Theory in Psychology classes, emerges as a potential influential factor in understanding the dynamics behind soliciting comprehensive donation sums. The theory is attributed to Dr Henri Taifel and Dr John Turner in 1970. The theory states that individuals procure a part of their self-concept from their affiliation in social groups, typically categorized by shared goals that provide directions and purposes to each member. The fundamental aspect of Social Identity Theory is the manifestation of the ingroup-bias; the tendency to favor one’s own group. This behavior is categorized as “irrational” viewed through the lens of classical economics.

This study hypothesizes that the assumption of Social Identity Group Theory could be extrapolated to augment donation behaviors. By inculcating a sense of belonging and shared purpose, individuals may have greater inclination to donate. This mechanism involves fostering a belief among the potential donors that they are an integral part of the collective team striving towards charitable causes. By investigating the potential effect of this theory in the realm of philanthropic activities, this allows an offering of a strategic avenue for proliferating funds raised.

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1.3.3 Framing effect 3 - Word Length

Initiation of an action requires the attention of the individual (Wu, n.d.). An intriguing research done by the Golden Step ABA underscores that the average attention span of adults plummeted from 12 seconds in 2000 to a mere 8 seconds today. They also unveiled that only a mere 17% of pageviews last more than 4 seconds. Insights from Masch Group unravel that adults spend barely 1.7 seconds on a piece of content on Facebook when accessed by their mobile phones. This highlights the critical role of word length in capturing the attention span of an adult.

Capitalizing on these findings, this paper sets out to investigate the impact of word length on the donating behavior of individuals. Through this study, the paper seeks to offer insights into the optimal word length to capture the fleeting focus and result in the increase in donation activities.

1.4 Other Variables

1.4.1 Role of Gender in Philanthropic Activities

Observation and experimental studies have found compelling evidence that women on average demonstrate greater altruistic behavior (Andreoni & Vesterlund, 2001; Engel, 2011; Willer, Wimer & Owens, 2015). The paper attempts to track and verify these studies in more recent time.

1.4.2 Role of Religion in Philanthropic Activities

The concept of donation is rooted in religion. Studies conducted by Doces, Goldberg and Wolaver (2022) found conclusive evidence that religion affects prosocial behavior. This paper attempts to capture this effect while conducting the experiment.

2. Methodology

This research aims to systematically examine the influence of philanthropy activities through the lens of three distinct Framing Effects. The study will adhere strictly to a uniform methodology across the three frames, involving the presentation of two contrasting posters, followed by a comprehensive survey to record the variations in responses. This methodology approach allows for the testing of significant differences between each frame. External factors such as age, cultural aspects, geographical location, gender and prior philanthropic activities would also be collected for a more robust research. A random sample size of approximately 102 (n=102) is obtained for each type of frame.

2.1 Poster for Frame 1 - Types of Self-Interest Motivation

This experiment attempts to extend the findings of Dr Andreoni's warm glow theory, which demonstrates that donations are inherently driven by self-interests. For the purpose of the experiment, two distinct posters were designed to explore and compare two different types of selfish motivations.

The first Poster (Figure 1A) is deliberately crafted to appeal to the emotions and moral facets of an individual. The message accentuates the impact of donations on others, showing the potential for boosting the emotional well-being, self-esteem and the affirmation of moral beliefs through the act of donations. Despite the seemingly pure altruistic approach of the poster, Dr Hoffman (1981), argued that pure altruism does not exist. Thereby, the poster attempts to invoke the selfish personal emotional and moral benefits that one may attain should they engage in philanthropic behavior.

On the other hand, the second Poster (Figure 1B) takes a rational approach. It appeals to an individual's sensible nature, and the monetary-benefit that one may obtain through donation activities. This message emphasizes the potential financial benefits, especially in the form of tax exemptions. This corresponds to the traditional economic models of rational decision-making, where individuals act to maximize their utility or economic well-being.

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Each respondent is randomly assigned either poster. It is believed that an emotional appeal is able to reach targeted audiences on a different psychological level (Bangen, 2018). Hence, the hypothesis guiding this research states that individuals that are exposed to an altruistic appeal for charity donations are more likely to engage in charitable acts.

2.2 Poster for Frame 2 - Social Identity Theory

According to the Social Identity Theory, individuals who view themselves as a member of a group, would have a higher tendency to be biased towards the group (Tajfel & Turner, 1979). This theoretical framework provides valuable insights into how individuals derive a sense of belonging and self-esteem from their group memberships. Within this paradigm, individuals tend to have an inclination to favor their decisions towards the ingroup members as opposed to the outgroup members. Building on this premise, the paper hypothesizes that charity outreach that fosters a sense of inclusion among readers are likely to garner higher donations and volunteer rates.

To empirically test this hypothesis, the survey-based methodology is employed, utilizing two distinct posters. The first poster (Poster 2A) strategically utilizes imagery and message framing to invoke a sense of membership. The visual representation highlights the importance of teamwork in charity outreach. The combined effect would allow the exemplification of ingroup bias.

In contrast, the second poster (Poster 2B) exploits language and visuals that emphasizes an independent, self-directed option. The image depicts a transactional form of donation, representing the outgroup condition.

2.3 Poster for Frame 3 - Word Length

The incorporation of the word length manipulation method in this research is to elucidate the impact of information processing within the economic realm on philanthropic behavior. This is achieved through the presentation of two posters featuring contrasting word lengths - short versus long - while maintaining the uniformity of the content. This approach allows for a nuanced exploration of the cognitive mechanism of word length and attention that underlie the decision-making of charitable acts. Poster 2A depicts the scenario of a shorter word length while poster 2B illustrates the layout of a longer word length.

This paper posits that shorter word lengths are better able to capture the reader's attention, aligning with the notion that a smaller cognitive load would lead to greater philanthropic activities.

2.4 Design and Limitations

While the consistency of vital factors such as word length, photographs, font, formatting and background is crucial, there are still several limitations in the experimental designs that should be acknowledged. These limitations are pertinent to the survey's ability in capturing the accurate results that could affect donation behavior. The potential bias it possesses may affect survey results.

1. Limited Realism

The posters attempt to emulate a donation scenario, but may fail to replicate an actual charity outreach scenario. Without the need to provide any monetary contributions, participants may respond differently in an experimental scenario as opposed to real life. This affects the validity of the collected data.

2. Social Desirability Bias

Zaller and Feldman (1992) psychological studies showed that there exists a social desirability bias in surveys related to morally right behavior. Participants are more inclined to provide socially desirable answers, inflating their intention to donate.

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3. Convincingness of the Simulated Cause

While the posters mimic a charity outreach environment, participants may not be fully convinced by the cause. This leads to skepticism and lack of trust in the presented cause, resulting in an under-recording of the true donation behavior.

These limitations highlight the need for the cautious examination of the obtained survey results. Attempts to control certain variables for the experiment have been made, but eradicating the above limitations remains an immense challenge.

3. Results

A total of 307 survey responses were collected. This equates to approximately 102 responses per frame. A table of the results is attached in the abstract (Figure 4).

3.1 Frame 1 - Types of Selfish Motivations

3.1.1 Donation Behavior - Amount Donated

Null Hypothesis (H_0): There is no difference in donation behavior between Poster 1A and Poster 1B.

Alternate Hypothesis (H_1): There is a difference in donation behavior between Poster 1A and Poster 1B.

In the first frame, the paper attempts to investigate the potential difference in donation behavior based on the distinct types of selfish motivations. Specifically, the analysis compares the amount that respondents would consider donating to Poster 1A and 1B.

The F-test was first conducted on the survey results, obtaining a large p-value. Subsequently, a Pooled Variance T-test was conducted at 5% level of significance. The p-value obtained is significantly larger than the predetermined level of significance. As a result, the null hypothesis is not rejected, indicating that there is insufficient evidence to conclude a significant difference in the mean donation behavior between frames.

Considering the non-normality of the results, a Wilcoxon Rank Sum Test was conducted. A high p-value was yielded. The null hypothesis is not rejected. In conclusion, the amount donated between posters is not unequal. The types of selfish motivations are unlikely to draw differences in donation amounts.

3.1.2 Donation Behavior - Recurring Donations

Null Hypothesis (H_0): There is no difference in the length of donations between Poster 1A and Poster 1B.

Alternate Hypothesis (H_1): There is a difference in the length of donations between Poster 1A and Poster 1B.

The analysis commences with an F-test on the survey results, obtaining a large p-value. It was followed up by a Pooled Variance T-test at 5% level of significance. The obtained p-value is larger than the level of significance. As a result, the null hypothesis is not rejected, there is insufficient evidence that there is significant difference in length of donation between posters. In conclusion, the length of donation between posters is not unequal. The types of selfish motivations are unlikely to draw differences in donation length.

3.1.3 Testing the success of the Posters

Null Hypothesis (H_0): There is no difference in the scale ratings for the two posters in terms of a sense of self-satisfaction and a sense of obligation.

Alternate Hypothesis (H_1): There is a difference in the scale ratings for the two posters in terms of a sense of self-satisfaction and a sense of obligation.

To assess the success of the poster in illustrating the different types of selfish motivation, two vocabularies - sense of self-satisfaction and sense of obligation - were included and rated from a scale of 1 - 5.

For both vocabularies, a Pooled Variance T-test was conducted at 5% level of significance. In both cases, a high p-value was yielded, leading to the non-rejection of the null hypothesis in both cases.

In conclusion, the poster design failed to effectively illustrate the different types of selfish motivations, as reflected by the indifference in scale rating. The poster has failed to elicit the intended framing effect. The failure to convey its intended message renders the obtained result inconclusive. The impact of the distinct types of selfish motivation on donation behavior is uncertain, and the result is unusable for drawing meaningful conclusions.

3.2 Frame 2 - Social Identity Groups

3.2.1 Donation Behavior - Amount Donated

Null Hypothesis (H_0): There is no difference in the donation amount between the outgroup poster and the ingroup poster.

Alternate Hypothesis (H_1): There is a difference in the donation amount between the outgroup poster and the ingroup poster.

The paper analyzes the difference in donation amount obtained in the outgroup poster and the ingroup poster. Initiated by an F-test that yielded a small p-value, a Separate Variance T-test was conducted at a 5% level of significance. A small p-value was derived, leading to the rejection of the null hypothesis, providing sufficient evidence for a significant difference in the donation amount of both posters.

Acknowledging the non-normality of the data, the Wilcoxon Rank Sum Test was also conducted at 5% level of significance. Here too a small p-value was obtained, leading to the rejection of the null hypothesis.

There is ample evidence to support the claim that there is a difference in the donation amount between the ingroup and outgroup conditions. Further exploration of the donation behavior and the validity of the poster is required to draw a final conclusion.

3.2.2 Donation Behavior - Recurring Donations

Null Hypothesis (H_0): There is no difference in the mean recurring donation length between the outgroup poster and the ingroup poster.

Alternate Hypothesis (H_1): There is a difference in the mean recurring donation length between the outgroup poster and the ingroup poster.

The examination of the differences in recurring donation length between the outgroup and ingroup posters begins with the F-test, resulting in a large p-value. Subsequently, a Pooled Variance T-test was conducted at 5% level of significance. The derived p-value from the T-test was slightly larger than the level of significance resulting in the non-rejection of the

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null hypothesis. There is insufficient evidence of a difference in recurring donation length between both the posters. However, based on the mean duration, the ingroup poster was able to attract a longer recurring donation on average as compared to the outgroup poster. Before conclusively determining the effect of ingroup bias on the donation behavior, the poster has to be tested for its success.

3.2.3 Testing the success of the Posters

Null Hypothesis (H_0): There is no difference in the scale of the sense of inclusion for Poster 2A (Ingroup) and Poster 2B (Outgroup).

Alternate Hypothesis (H_1): There is a difference in the scale of the sense of inclusion for Poster 2A and Poster 2B.

To evaluate the success of the poster, the sense of inclusion is tested on a scale of 1 - 5. This involved a Pooled Variance T-test at 5% level of significance. A large p-value was obtained, leading to a non-rejection of the null hypothesis. The ingroup poster was unable to gather a higher sense of inclusiveness as compared to the outgroup poster. Given the poster's failure to convey the intended effect, the observed influence of the Social Identity Theory on donation behavior remains uncertain. Further research in this area of study is required for a more definitive conclusion.

3.3 Frame 3 - Word Length

3.3.1 Donation Behavior - Amount Donated

Null Hypothesis (H_0): There is no difference in the mean amount donated between posters with different word lengths.

Alternate Hypothesis (H_1): There is a difference in the mean amount donated between posters with different word lengths.

In the final frame, where the assumption was that the shorter word length was better able to capture the attention of respondents, thus leading to higher donation. An F-test was initially conducted, with a follow-up Pooled Variance T-test at 0.5% significance level. The T-test yielded a large p-value, thereby the null hypothesis is not rejected. There is insufficient evidence of a difference in donation amount between both posters.

Given that the data is not normal, a Wilcoxon Rank-Sum Test was also performed. Likewise, the null hypothesis is not rejected.

3.3.2 Donation Behavior - Recurring Donation

Null Hypothesis (H_0): There is no difference in the mean length of donation between both posters.

Alternate Hypothesis (H_1): There is a difference in the mean length of donation between both posters.

Given the substantial skewness of the collected data, the Wilcoxon Rank Sum Test was conducted at 5% level of significance. A p-value higher than the level of significance was obtained. This implies that there is insufficient evidence to show the difference in donation length between both conditions.

3.3.3 Testing the success of the Posters

It is acknowledged that comparing the ability to capture attention through the differences in word length is difficult to be conducted via a survey. A physical experiment and observation is required. Considering the limitations of the posters, it is likely that the poster was unable to

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capture the true accurate data. Given the inconclusiveness of the data, there is insufficient evidence to support the idea that word length does indeed affect donation behavior.

3.4 Gender and Donation Behavior

3.4.1 Test 1: Difference in Donation Amount

Null Hypothesis (H_0): There is no difference in donation amount between genders.

Alternate Hypothesis (H_1): There is a difference in donation amount between genders.

An F-test was initiated, followed by a Pooled Variance T-test at 5% level of significance. The p-value obtained was slightly larger than the level of significance, resulting in the non-rejection of the null-hypothesis. While there is insufficient evidence to show that there is a significant difference in donation amounts between genders at 5% significance level, the mean donation amounts for females and males were shown to be 15.46 dollars and 21.30 dollars respectively.

3.4.2 Test 2: Difference in Donation Length

Null Hypothesis (H_0): There is no difference in the length of donations between genders.

Alternate Hypothesis (H_1): There is a difference in the length of donations between genders.

Similar to the first test, it was initiated with an F-test, followed by a pooled variance T-test at 5% level of significance. Expectedly, a small p-value was obtained, rejecting the null hypothesis. There is sufficient evidence to show that there is a significant difference in donation length between genders. The T-test suggests that females are more likely to donate more than male counterparts.

Previous studies done by Adreoni and Vesterlund (2001), drew the same conclusion that women are more likely to be more altruistic than male. Two decades after this study, the current experiment was able to derive the same conclusions despite much changes to gender-related issues.

3.4.3 Test 3: Difference in Donation Amount between genders presented with Poster 1A and Poster 1B

Null Hypothesis (H_0): There is no difference in donation amount between males presented with Poster 1A and Poster 1B.

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Alternate Hypothesis (H_1): There is a difference in donation amount between males presented with Poster 1A and Poster 1B.

A Wilcoxon Rank Sum Test was conducted to investigate the difference in donation behavior between males presented with Poster 1A and males presented with Poster 1B. At a 5% significance level, we found a small p-value giving sufficient evidence of a difference in donation behavior, with a mean of 3.91 dollars and 15.40 dollars for males presented with Poster 1A and Poster 1B respectively.

Null Hypothesis (H_0): There is no difference in donation amount between females presented with Poster 1A and Poster 1B.

Alternate Hypothesis (H_1): There is a difference in donation amount between females presented with Poster 1A and Poster 1B

Likewise, a Wilcoxon Rank Sum Test was conducted to investigate the difference in donation behavior between females presented with Poster 1A and females presented with Poster 1B. At a 5% significance level, we found a slightly larger p-value resulting in insufficient evidence of a difference in donation behavior. However, we note the means of 29.68 dollars and 17.32 dollars for females presented with Poster 1A and Poster 1B respectively.

These findings suggest that a monetary gain appeal (Poster 1B), may be more effective in eliciting donations from males compared to an emotional gain appeal (Poster 1A). Conversely for females, an emotional gain appeal may be more persuasive in eliciting donations compared to a monetary gain appeal, though this may require more extensive experiments on this subject matter.

3.5 Religion and Donation Behavior

3.5.1 Test 1: Difference in Donation Amount

Null Hypothesis (H_0): There is no significant difference in donation amount between religious and non-religious individuals.

Alternate Hypothesis (H_1): There is a significant difference in donation amount between religious and non-religious individuals.

Contrary to expectation, the p-value obtained for the pooled variance T-test was large, thus not rejecting the null hypothesis. There is insufficient evidence of a significant difference in donation amount between the religious and non-religious groups.

3.5.2 Test 2: Difference in Donation Length

Null Hypothesis (H_0): There is no significant difference in the length of donations between religious and non-religious individuals.

Alternate Hypothesis (H_1): There is a significant difference in the length of donations between religious and non-religious individuals.

Similarly a large p-value was obtained for the pooled variance T-test, thus not rejecting the null hypothesis. There is insufficient evidence of a significant difference in donation amount between the religious and non-religious groups.

In contrast to psychological studies and statistics available on charity sites, religious individuals tend to contribute more. Indonesia retains the top for the highest charity donations worldwide. A study conducted by Kasri and Ramli (2019), posits that Indonesia retains the highest position due to the likelihood of religious Muslims contributing more donations. This experiment failed to account for the scale of religiosity, which is difficult to measure. Therefore, it is unable to accurately conclude the impact of religion on donation behavior.

3.6 Conclusion

Variables:	Significance in Donation Behavior
Social Identity Theory	Yes
Gender	Yes
Selfish Motivations	No
Length of Words	No
Religion	No

The results indicate that only Social Identity Theory and Gender played a significant role in altering donation behaviors. Understanding these factors are crucial in developing, targeting, and crafting effective strategies in the field of philanthropy. The impact of Social Identity Theory is uncertain, though the scientific explanation is able to back the application.

4. Limitations and Further Improvements

After conducting the experiment, several limitations were observed. The acknowledgment of these limitations will allow for the experiment to undergo further improvements for future studies.

4.1 Uncertain Causality

The inability to elicit the intended message creates doubts about the causality between variables. Should an effect be discovered, it becomes uncertain if this is caused by the variables under investigation. Conversely, if an effect is not discovered, the paper is unable to assure that there is an absence of a relationship as the poster may fail to capture the intended effect.

4.2 Professional Guidance and Interdisciplinary Knowledge

Designing the poster requires expertise from both the field of economics and psychology. The lack of professional guidance and interdisciplinary knowledge within the team may have contributed to poorly designed posters.

4.3 Measurement of Attention

The posters attempting to measure the attention captured by word length are difficult to access through the means of survey. A physical observation and experiment is required for a more precise assessment.

4.4 Non-Normal Data

The presence of non-normal data poses a significant challenge to data analysis as compared to their parametric counterparts. Firstly, the non-parametric test restricts further analysis. It lacks the capacity to identify the relationship and trends within the data. Secondly, there is limited directional analysis. The non-normal data does not indicate the direction in which the differences are moving. Thereby, limiting the ability to draw conclusions based on the results obtained. The depth of the analysis is greatly restricted. To avoid non-normal data, more rigorous sampling may be needed in the future.

5. Real-world Applications

Whilst the relationship between ingroup bias and donation behavior is not conclusive, the justification and scientific logic poses for further studies. In light of the current study's limitations, the paper will propose potential applications should the assumption of relationship prove true in future studies. Given that the psychological explanation behind Social Identity Theory justifies an increase in donations by fostering a sense of inclusiveness, the paper suggests that advertisements and posters for charity outreach could attempt to do so. Fostering a sense of inclusiveness through message framing and visual representation may allow for the raising of more donations, and for a longer period of time.

Furthermore, curating posters to specific frames when soliciting donations from females can be considered, given that our results and other studies have also shown that females portray greater altruistic characteristics compared to their male counterparts. The graduate student team at the Singapore Management University (SMU) hopes to further improve this research and assist charity organizations in better fundraising to improve the welfare of those in need.

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Abstract

Figure 1A

Over 15,000 children and 800 women die each day in South Africa due to poverty related illnesses.

The Benevolence Blessed Health Centre (BBHC) aims to reach USD2.5 million in donations to provide funding for our partner hospitals in the region.

Transform the lives of these women and children by making a donation to our campaign Breathe Again at www.BBHC.com.



**Do Good. Feel Good.
Help transform the lives of
those in need today!**

BBHC

Benevolence Blessed Health Centre

Figure 1B

Over 15,000 children and 800 women die each day in South Africa due to poverty related illnesses.

The Benevolence Blessed Health Centre (BBHC) aims to reach USD2.5 million in donations to provide funding for our partner hospitals in the region.

Maximise your tax relief benefits by making a donation to our campaign Breathe Again at www.BBHC.com.



**Do Good. Feel Good.
Maximise your tax relief with
a donation to BBHC today!**

BBHC

Benevolence Blessed Health Centre

Figure 2A

Alleviate Poverty



Poverty continues to be the leading cause of death among children and women in South Africa, with over 15,000 children and 800 women succumbing to largely preventable or treatable illnesses daily.

Together, let's forge an alliance against poverty. Your hand, your support, your spirit – each adds to our collective strength in helping others. You are an integral part of our community; without you, our resolve falters. Visit www.BBHC.com to learn about how we can unite as one to combat poverty together.

BBHC

Benevolence Blessed Health Centre

Figure 2B

Alleviate Poverty



Poverty continues to be the leading cause of death among children and women in South Africa, with over 15,000 children and 800 women succumbing to largely preventable or treatable illnesses daily.

Be an agent of change by aiding in the battle against poverty in South Africa through your donation. Your contribution is pivotal in alleviating the issues of poverty. Explore www.BBHC.com to see how your support can bring about a transformation to the lives of those affected by poverty in the region.

BBHC

Benevolence Blessed Health Centre

Figure 3A

Over 15,000 children and 800 women die each day in South Africa due to poverty related illnesses.

Donate to our campaign Breathe Again and be an agent of change today at www.BBHC.com.

Breathe Again.



Together, we can make a difference!

BBHC

Benevolence Blessed Health Centre

Figure 3B

More than 15,000 children and 800 women succumb to largely preventable or treatable illnesses daily, due to severe poverty in South Africa.

The Benevolence Blessed Health Centre (BBHC) is calling for a donation from you to be an agent of change. Our campaign Breathe Again aims to reach USD2.5 million in donations to provide funding for our partner hospitals in the region.

Let's make a difference together. Visit www.BBHC.com to make a donation today!

Breathe Again.



Together, we can make a difference!

BBHC

Benevolence Blessed Health Centre

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Figure 4

Variables	Type of Test	Hypothesis	P-value
Frame 1 - Types of Selfish Motivation Amount Donated	F-Test Pooled Variance T-Test Wilcoxon Rank Sum Test	H_0 : There is no difference in donation behavior between Poster 1A and Poster 1B. H_1 : There is a difference in donation behavior between Poster 1A and Poster 1B.	F-Test: 0.3777 Pooled Variance T-Test: 0.6683 Wilcoxon Rank Sum Test: 0.8426
Frame 1 - Types of Selfish Motivation Recurring Donations	F-Test Pooled Variance T-Test	H_0 : There is no difference in the length of donations between Poster 1A and Poster 1B. H_1 : There is a difference in the length of donations between Poster 1A and Poster 1B.	F-Test: 0.9603 Pooled Variance T-Test: 0.6932
Sense of Self-Satisfaction Sense of Obligation	F-Test Pooled Variance T-Test	H_0 : There is no difference in the scale ratings for the two posters in terms of a sense of self-satisfaction and a sense of obligation. H_1 : There is a difference in the scale ratings for the two posters in terms of a sense of self-satisfaction	F-Test: 0.7504 Pooled Variance T-Test: 0.1184

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		and a sense of obligation.	
Frame 2 - Social Identity Groups Amount Donated	F-Test Separate Variance T-Test Wilcoxon Rank Sum Test	H_0 : There is no difference in the donation amount between the outgroup poster and the ingroup poster. H_1 : There is a difference in the donation amount between the outgroup poster and the ingroup poster.	F-Test: 0.0270 Separate Variance T-Test: 0.0353 Wilcoxon Rank Sum Test: 0.0210
Frame 2 - Social Identity Groups Recurring Donations	F-Test Pooled Variance T-Test	H_0 : There is no difference in the mean recurring donation length between the outgroup poster and the ingroup poster. H_1 : There is a difference in the mean recurring donation length between the outgroup poster and the ingroup poster.	F-Test: 0.3931 Pooled Variance T-Test: 0.0804
Frame 2 - Social Identity Groups Sense of Inclusion	F-Test Separate Variance T-Test	H_0 : There is no difference in the scale of the sense of inclusion for Poster 2A (Ingroup) and Poster 2B (Outgroup).	F-Test: 0.1123 Pooled Variance T-Test: 0.2617

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		H_1 : There is a difference in the scale of the sense of inclusion for Poster 2A and Poster 2B.	
Frame 3 - Word Length Amount Donated	F-Test Pooled Variance T-Test	H_0 : There is no difference in the mean amount donated between posters with different word lengths. H_1 : There is a difference in the mean amount donated between posters with different word lengths.	F-Test: 0.0957 Pooled Variance T-Test: 0.3648
Frame 3 - Word Length Recurring Donations	Wilcoxon Rank Sum Test	H_0 : There is no difference in the mean length of donation between both posters. H_1 : There is a difference in the mean length of donation between both posters.	Wilcoxon Rank Sum Test: 0.1523
Gender Amount Donated	F-Test Pooled Variance T-Test	H_0 : There is no difference in donation amount between genders. H_1 : There is a difference in	F-Test: 0.3884 Pooled Variance T-Test: 0.0555

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		donation amount between genders.	
Gender Recurring Donations	F-Test Pooled Variance T-Test	H_0 : There is no difference in the length of donations between genders. H_1 : There is a difference in the length of donations between genders.	F-Test: 0.3607 Pooled Variance T-Test: 0.0087
Frame 1 - Types of Selfish Motivation Amount Donated for Males	Wilcoxon Rank Sum Test	H_0 : There is no difference in donation amount between males presented with Poster 1A and Poster 1B. H_1 : There is a difference in donation amount between males presented with Poster 1A and Poster 1B.	Wilcoxon Rank Sum Test: 0.0289
Frame 1 - Types of Selfish Motivation Amount Donated for Females	Wilcoxon Rank Sum Test	H_0 : There is no difference in donation amount between females presented with Poster 1A and Poster 1B. H_1 : There is a difference in donation amount between females presented with	Wilcoxon Rank Sum Test: 0.0985

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		Poster 1A and Poster 1B.	
Religion Amount Donated	F-Test Pooled Variance T-Test	H_0 : There is no significant difference in donation amount between religious and non-religious individuals. H_1 : There is a significant difference in donation amount between religious and non-religious individuals.	F-Test: 0.6849 Pooled Variance T-Test: 0.2120
Religion Recurring Durations	F-Test Pooled Variance T-Test	H_0 : There is no significant difference in the length of donations between religious and non-religious individuals. H_1 : There is a significant difference in the length of donations between religious and non-religious individuals.	F-Test: 0.5915 Pooled Variance T-Test: 0.8672