

Affordances of altruism: How visual cues and message framing in donation boxes influence giving behavior

Diana Cillo¹, Noemi Rocile Palma¹, Xydrick Russel Guisok¹, Peth Vinche Podiotan¹, Adelaine Caluscos¹, Jashmine Salvador¹, Erica Mae Bulawen¹, Justine Kate Rivas¹, Yenchen Peligrino¹, Mara Maravilla Acedo¹, Zwyck Alwag¹, Angelica Joy Balibay¹, Juliana Marie Barrios¹, Chris Janine Bitco¹, Cherrie Ann Nogas¹, Christian Jay Pagios¹, and Vanessa Joyce Perez¹

¹ Department of Psychology, Caraga State University, Philippines.

Abstract. Nonprofit organizations, particularly Animal Welfare Organizations (AWOs), rely heavily on donations to sustain their efforts in protecting animals. Understanding what motivates giving is therefore essential. This study examined the effects of visual framing (positive and negative) and message framing (gain and loss) on donation behavior. A counterbalanced 2×2 within-subjects experimental design was employed with 60 undergraduate participants from Caraga State University. Participants interacted with four donation stations, representing each framing condition, and data were analyzed using JASP 0.18.3. Results showed a significant effect of visual framing: participants donated more when exposed to negatively framed images than to positively framed ones. Message framing showed no significant effect, and no interaction between visual and message framing was observed. These findings suggest that donation behavior is more influenced by visual cues than by message content. The study highlights the importance of incorporating emotionally compelling, negatively framed images in donation appeals, offering practical implications for AWOs and other nonprofit organizations seeking to enhance fundraising strategies.

1 Introduction

Animal Welfare Organizations (AWOs) play a crucial role in rescuing, rehabilitating, and advocating for the well-being of animals [1]. As nonprofit organizations (NPOs), they rely heavily on donations to sustain their operations, yet these contributions are often inconsistent and insufficient [2]. The financial sustainability of AWOs depends on understanding what motivates individuals to give, particularly how environmental cues such as the design of donation boxes may influence donor behavior. Addressing this issue is essential for ensuring continued support for animals in need [3].

Charitable giving is often explained through altruism, a form of prosocial behavior characterized by the motivation to benefit others without expecting external rewards [1]. In

Corresponding author: dqcillo@carsu.edu.ph

the context of AWOs, donation boxes act as environmental cues that can shape altruistic behavior. Visual and textual elements within these boxes function as “affordances” that guide individuals toward certain actions [4]. These cues may increase or decrease the willingness to donate by evoking specific emotional and cognitive responses. Giving behavior is the voluntary contribution of resources, such as money or goods, driven by a blend of intrinsic motivation and external influences [2]. This behavior is shaped by the interaction between personal willingness and environmental cues, which influence how often and how much individuals donate. The strategic use of visual framing, which involves utilizing images and layouts to evoke specific perceptions and emotions, and message framing, which affects decision-making by altering the presentation of information in different contexts, highlights the importance of these elements in shaping altruistic tendencies [1].

This behavior is shaped by the interaction between personal willingness and environmental cues, which influence how often and how much individuals donate. The strategic use of visual framing, which involves utilizing images and layouts to evoke specific perceptions and emotions, and message framing, which affects decision-making by altering the presentation of information in different contexts, highlights the importance of these elements in shaping altruistic tendencies. Empirical research shows that emotionally compelling imagery can influence charitable behavior, though findings are not always consistent. For example, some studies demonstrate increases in charitable contributions when imagery evokes strong emotions [5,6], while others find that image type alone may not significantly alter donation behavior [7]. In the context of AWOs, visuals of distressed or joyful animals remain particularly relevant, as negative imagery often elicits stronger responses by heightening urgency and empathy [6,8,9].

This study is grounded in Prospect Theory, which investigates how loss aversion and framing in donation appeals (visuals and messages) influence giving decisions by affecting emotional engagement and risk perception. It provides a strong theoretical foundation as it supports the hypothesis that message and visual framing, combined with perceived affordances, can significantly influence charity-giving behavior. Prior research used this theory in the context of environmental communication, who found that negatively framed images were more effective at motivating pro-environmental action compared to positive or solution-focused visuals [9]. In another study, the theory was applied in consumer behavior, showing that loss-framed appeals strongly influenced decision-making [10]. These findings are consistent with the phenomenon of loss aversion in Prospect Theory, which suggests that individuals usually prefer to avoid losses rather than seek gains [11]. Visual framing (positive vs. negative) and message framing (gain vs. loss) are the independent variables, proposed to influence the dependent variable, giving behavior. Message framing delivers almost identical substantive content, while visuals engage attention and communicate messages to people who may not read written material.

Understanding the effects of visual and message framing on giving behavior is crucial for AWOs. By providing insights into which visual and message combinations most effectively encourage donations, this research can help organizations design better fundraising strategies. Improved donation strategies will promote consistent contributions, strengthen the financial sustainability of AWOs, and enhance their ability to support animals in need. Additionally, the study contributes to the broader understanding of prosocial behavior and environmental cues in charitable giving, which is socially relevant given the growing global awareness of animal rights. Based on the research questions, the study formulated the following hypotheses. The first hypothesis (H_{01}) asserts that visual framing does not have a significant effect on individuals' giving behavior. The second hypothesis (H_{02}) proposes that message framing does not significantly influence individuals' giving behavior. Lastly, the third hypothesis (H_{03}) contends that there is no significant interaction effect between message framing and visual framing on giving behavior.

While prior research has established that visual features, such as emotional imagery, can significantly affect donor behavior [3], there remains a lack of comprehensive studies focusing on the interplay between visual cues, message framing (gain vs. loss), and their impact on donations. No studies have yet investigated the combined effect of message framing (positive and negative) and visual framing (loss and gain) on giving behavior, especially concerning companion animals. By empirically examining these factors together, the researchers aim to fill this gap, contributing to both scientific knowledge and practical applications in nonprofit fundraising. This study demonstrates their commitment to advancing understanding in the field of charitable giving behavior and supporting the sustainability of AWOs. Based on these considerations, the present study aims to examine the effects of visual framing (positive vs. negative) and message framing (gain vs. loss) on giving behavior.

Specifically, it seeks to 1) determine the effect of visual framing on donation behavior, 2) assess the effect of message framing on donation behavior, and 3) explore the interaction between visual and message framing. By addressing these objectives, the study contributes to the literature on charitable giving and offers actionable insights for AWOs seeking to improve their fundraising strategies.

2 Method

2.1 Participant

The participants in this experimental study were undergraduate students enrolled at Caraga State University (CSU). A total of 60 students are expected to participate in the study. The university's accessibility to a diverse academic population made it an ideal setting for observing donation intention. This range of participants is deemed sufficient for the scope of the study, balancing practical considerations with the need for an adequate sample size to ensure meaningful results. By using Convenience sampling to select participants, the study was able to recruit students who were readily accessible, thereby facilitating the research process. This method was particularly appropriate as it allowed for the inclusion of students from diverse academic backgrounds, with participants selected from any of the university's seven academic colleges. The target population consisted of individuals aged 18 to 25 years old, ensuring that all participants could provide informed consent. Including students from various programs and year levels aimed to ensure that the sample was varied and reflective of the broader student population at the universitykit.

2.2 Research Instrument

The research instruments in this study consisted of standardized donation boxes and stimulus materials designed to ensure consistency and validity. Each donation box measured $12 \times 12 \times 12$ inches and was transparent to allow visibility of contributions. For the framing conditions, 2.5×6 ft tarpaulins were used, each displaying an image of a dog (positive vs. negative) together with a message (gain-framed vs. loss-framed). These combinations were used to create the four experimental conditions. To establish content validity, the images and texts printed on the tarpaulins were reviewed and validated by subject-matter experts before the experiment. In addition, a manipulation check questionnaire adapted from Lee was administered. This scale used a 5-point Likert scale (e.g., *very sad to very happy, strongly negative to strongly positive*) to measure participants' perceptions of the emotional valence of the images and the framing of the messages [12]. Donation behavior was measured by the

actual donation amount (in Philippine pesos), which was recorded by the researchers after each condition.

2.3 Data Analysis Techniques

For this experimental quantitative study, descriptive and inferential statistical techniques were used. Descriptive statistics (means, standard deviations, and frequencies) were computed to summarize participants' characteristics and donation behavior across conditions. A paired-samples *t*-test was conducted as a manipulation check to verify whether participants accurately distinguished the emotional valence of the visual cues (positive vs. negative) and the framing of the solicitation messages (gain vs. loss). To test the main hypotheses, a two-way repeated measures ANOVA was employed to examine the effects of visual framing and message framing, as well as their interaction, on donation amounts. Before analysis, data were cleaned and screened for inconsistencies, and assumptions of normality and sphericity were checked. Effect sizes (partial η^2) were reported alongside *p*-values to provide information on the magnitude of effects. Statistical analyses were carried out using JASP version 0.18.3, with a significance level set at $\alpha = .05$.

2.4 Experimental Procedure

A total of 60 undergraduate students from Caraga State University were recruited using convenience sampling. Each participant drew a piece of paper indicating their order of exposure to each experimental condition upon entering the controlled laboratory environment, and was divided into 4 groups consisting of 15 individuals each. Each group was randomly assigned to one of the four exposure sequences derived from a 4x4 Latin square design, which dictated the order of the participants' exposure to the treatment conditions.

The study employed a reverse counterbalanced 2x2 within-subjects experimental design to examine participants' behavior across four distinct donation stations. This design ensures that each participant experiences all conditions while minimizing potential carryover effects that could bias the results due to the order of exposure. A reverse counterbalanced within-subjects design involves participants undergoing all experimental conditions in one sequence and then again in the reverse sequence to control for order and carryover effects. In this design, participants experience all treatment conditions, but the order in which they encounter these conditions is systematically varied. This approach is particularly appropriate when aiming to measure differences in responses across multiple conditions within the same participants, while mitigating confounding influences from treatment order or learning effects. It is well-suited for studies where exposure to one condition might influence behavior in subsequent conditions, as it balances out such effects across participants.

The independent variables of this study were visual framing (positive vs. negative) and message framing (gain vs. loss). The dependent variables are participants' giving behavior based on the amount donated. Each condition was presented in a classroom setting with a transparent donation box and a banner displaying the corresponding visual and message frame. To avoid bias, participants were randomly assigned to exposed conditions based on their sequence. Each condition was presented in isolation to prevent invalidation across the classrooms. All stimulus materials used were standardized in size, font, and color to ensure consistency. Participants received a hypothetical ₱100 peso bill in change -(₱50(1) + ₱20(2) + ₱5(1) + ₱1(5)) and were instructed to donate any amount based on their response to the condition in the following:

TC1: (Positive Visual + Gain Message) In this treatment condition, participants saw a donation box with an image of a smiling dog shown alongside a message framing. The

condition reads, "With your help, more dogs can live happily in loving homes." The goal of this condition is to generate a positive emotional appeal with a positive visual and gain message and underline the benefits of donating.

TC2: (Positive Visual + Loss Message) In this treatment condition, participants saw a donation box with an image of a smiling dog shown alongside a message framing. The condition reads, "Without your help, many dogs may be left without loving homes." The goal of this condition is to generate a positive emotional appeal with a positive visual and loss message, and emphasize the consequences of not donating.

TC3: (Negative Visual + Gain Message) In this treatment condition, participants saw a donation box with an image of a sad dog or abandoned dog shown alongside a gain-framed message. The condition reads, "With your help, more dogs can live happily in loving homes." The goal of this condition is to generate a positive emotional appeal with a negative visual and a gain message that potentially elicits donation behavior through empathy.

TC4: (Negative Visual + Loss Message) In this treatment condition, participants saw a donation box with an image of a sad dog or abandoned dog shown alongside a loss-framed message. The condition reads, "Without your help, many dogs may be left without loving homes." The goal of this condition is to generate a positive emotional appeal with a negative visual and a loss message that potentially elicits donation behavior through empathy and emphasizes the consequences of not donating.



Fig 1. Stimulus Materials

Table 1. Experimental Conditions

Experimental Condition	Message framing	Visual (Typeface) framing
1	Gain	Positive
2	Gain	Negative
3	Loss	Positive
4	Loss	Negative

Each experimental room was monitored by two assigned researchers, given the task to place three Php50 bills inside each transparent donation box, which was done consistently across all four treatment conditions. Before participants entered the experimental room, the tarpaulins displaying the visual and message farming were intentionally covered to ensure that no one was exposed to the stimuli too early. This maintains uniform exposure time and controls for external influence. The researchers' responsibilities included: (1) Recording the number of individuals who donated, (2) Recording the time, and (3) Documenting the total amount of money collected in each donation box.

Once the participants were inside and positioned directly in front of the stimulus materials, the coverings were removed, and they were given exactly five minutes to engage with the visual and message framing. This procedure ensured that all participants had equal and uninterrupted exposure to each condition. After each five-minute session, participants were given a one-minute break to relax before being guided to the next room by a researcher. During transitions, they were instructed to form a line and not to speak or share information to prevent bias.

After each rotation, the researchers recorded donation decisions and amounts discreetly and analyzed them to assess how different framing techniques influenced charitable giving. Participants completed a manipulation check assessing their perception of the visual and message framing using a 5-point Likert scale. Demographic data such as age and gender were also collected. Immediately following donation, participants received a debriefing session where they were informed of the study's purpose and provided informed consent.

After the experiment, the participants will be granted tokens and gratitude for giving their time in participating in our study; as promised, they will be offered snacks. Additionally, participants are allowed to ask frequent questions for further clarification and are allowed to provide feedback about our study. This process ensures and secures transparency, acknowledges their contribution, and fosters an open exchange of ideas from their perspective.

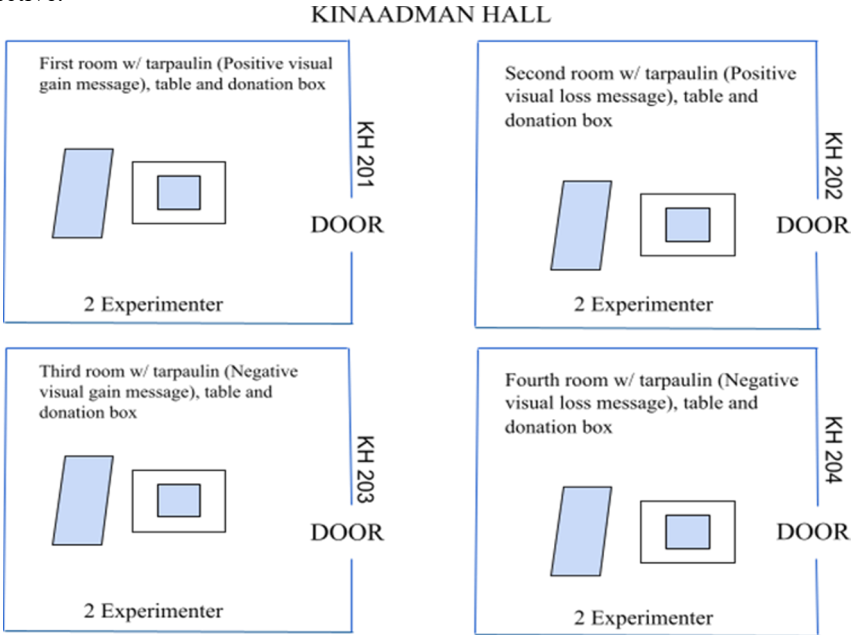


Fig 2. Map of the experimental setting illustrating the spatial arrangement of the four rooms

The study obtained formal authorization from Caraga State University’s Office of the Vice President for Student Affairs and Auxiliary Services prior to conducting the experiment within the campus premises. Ethical standards were strictly followed through informed consent, and data anonymization and confidentiality were ensured by the researchers. Data obtained in the study was securely stored and accessed only by authorized research members. The researchers conducted a debriefing session after the participation, explaining contributions, outlining the goal and purpose, ensuring validity, and allowing questions. Participants had the right to withdraw, potential risks were disclosed, personal information safeguarded, and contact details provided for follow-up.

3 Result

3.1 Descriptive Statistic

Table 2. Demographic Profiles

		Frequency	Percentage	Mean	SD
Sex	Male	23	38.333	1.617	0.490
	Female	27	61.667		
Age	18	4	6.667	20.15	1.424
	19	17	28.333		
	20	21	35.000		
	21	9	15.000		
	22	5	8.333		
	23	2	3.333		
	24	1	1.667		
	25	1	1.667		
Year Level	1	15	25.000	1.85	0.606
	2	40	66.667		
	3	4	6.667		
	4	1	1.667		
College	CHASS	16	26.667	1.967	1. .636
	CEGS	10	16.667		
	CAA	6	10.000		
	CMNS	8	13.333		
	CoFES	8	13.333		
	CCIS	6	10.000		
	CeD	6	10.000		

The study included 60 undergraduate students: 37 females (61.67%) and 23 males (38.33%), aged 18 –25 years (M = 20.15, SD = 1.42). Most were second-year students (n = 40, 66.67%), followed by first-year (n = 15, 25.00%), third-year (n = 4, 6.67%), and fourth-year (n = 1, 1.67%) students (M = 1.85, SD = 0.606). By college, participants were distributed as follows: CHa SS (n = 16, 26.67%), CEGS (n = 10, 16.67%), CoFES (n = 8, 13.33%), CMNS (n = 8, 13.33%), CCIS (n = 6,10.00%), CED (n = 6, 10.00%), and CAA (n = 6, 10.00%).

Table 3. Distribution across four experimental conditions

	positive+gain	positive+loss	negative+gain	negative+loss
Valid	60	60	60	60
Missing	0	0	0	0
Mean	56.933	55.800	75.733	77.083

The data indicate that participants were evenly distributed across four experimental conditions, each comprising 15 individuals with a total of 60 respondents. Participants exposed to positive visual design paired with the gain -framed message ($M= 56.93$, $SD=31.20$), while those exposed to positive visuals with loss-framed messages had ($M=55.80$, $SD= 28.12$), and those in the negative visual with loss-framed messages condition reported the highest mean of 77.08 ($SD= 3.57$). These findings are connected with higher donation intentions than positive visual framing.

3.2 Manipulation Check

In the experiment, the effectiveness of the manipulation was checked based on whether the visual cues (positive and negative) and message framing (loss and gain) were perceived accurately by the participants. As stated earlier, a 5 -point Likert scale was used to assess the emotional valence of the visual cues and the emotional tone of the solicitation messages.

Table 4. Manipulation Check for Visual Cues (Positive vs. Negative)

Visual Cues	Mean	SD	t	df	p	Remarks
Positive	4.608	0.782	27.212	59	.001	Significant
Negative	1.258	0.500				

A paired-sample t-test was conducted on participants’ ratings. Results showed that participants rated the positive visuals significantly higher in positivity ($M = 4.61$, $SD = 0.78$) compared to the negative visuals ($M = 1.26$, $SD = 0.50$), $t (59) = 27.21$, $p <.001$. These findings indicate that participants were able to distinguish between the two visual cues, confirming the effectiveness of the manipulation.

Table 5. Manipulation Check for Message Framing (Gain vs. Loss)

Message Framing	Mean	SD	t	df	p	Remarks
Gain	4.175	0.675	13.144	59	.001	Significant
Loss	2.425	0.853				

Findings revealed that participants rated gain-framed messages significantly higher ($M = 4.18$, $SD = 0.68$) than loss-framed messages ($M = 2.43$, $SD = 0.85$), $t (59) = 13.14$, $p < .001$. This statistically significant difference indicated that participants discretely distinguished the two types of message framing. Thus, the manipulation was successful.

3.3 The Influence of Visual Framing on Giving Behavior

Table 6. Descriptive and Inferential Statistics for the Effect of Visual Framing on Giving Behavior

Visual	Mean	SD	t	p	η²	Remarks
Positive	56.367	30.54	-6.386	<.001	0.241	Significant
Negative	76.408	25.94				

*Significant when p-value is less than .05. Tested using repeated measures ANOVA

The findings indicated that participants' contributions were considerably higher in the negative visual framing condition (M = 76.41, SD = 25.94) than the positively framed image (M = 56.37, SD = 30.54). This difference was statistically significant, $F(1, 59) = 40.778$, $p < .001$, with a partial eta squared (η^2) = .241, indicating a large effect size. The mean difference was -20.042, with a 95% confidence interval ranging from -26.322 to -13.762, and a standard error (SE) of 3.128. According to these findings, participants' giving behavior is strongly influenced by the type of visual framing participants are exposed to, with negative-framed visuals motivating them to give in greater quantities than positively-framed ones.

3.4 The Influence of Message Framing on Giving Behavior

Table 7. Descriptive and Inferential Statistics for the Effect of Message Framing on Giving Behavior

Visual	Mean	SD	t	p	η²	Remarks
Positive	56.367	30.54	-0.046	0.964	7.048×10^{-6}	Not Significant
Negative	76.408	25.94				

*Significant when p-value is less than .05. Tested using repeated measures ANOVA.

The results of the two-way Analysis of Variance (ANOVA) indicated that message framing (gain-framed vs. loss-framed) did not exert a statistically significant main effect on donation amounts, $F(1, 59) = 0.002$, $p = 0.964$, $\eta^2 = 7.048 \times 10^{-6}$. The extremely small effect size ($\eta^2 = 7.048 \times 10^{-6}$, practically zero) indicates that the impact of visual cues on donation amounts did not vary based on whether the message emphasized gains or losses. This suggests that the visual cues had a stronger influence on donation behavior than the message framing.

3.5 The Interaction Effects of Message Framing (Loss vs. Gain) and Visual Framing (Positive vs. Negative) on Donation Intentions

A repeated measures ANOVA was conducted to examine the interaction effects of visual framing (positive vs. negative) and message framing (gain vs. loss) on participants' donation intentions, under the null hypothesis (H_0) that neither type of framing would have a significant effect on donation intentions.

Table 8. The Interaction (Within-Subjects) Effects of Message Framing and Visual Framing

Cases	df	Mean Square	F	p	η^2
Visual	1.000	24100.104	40.778	< .001	0.241
Residuals	59.000	591.002			
Message	1.000	0.704	0.002	0.964	7.048×10^{-6}
Residuals	59.000	334.806			
Visual * Message	1.000	92.504	0.259	0.613	9.259×10^{-4}
Residuals	59.000	357.487			

Note. Sphericity corrections not available for factors with 2 levels.
Note. Type III Sum of Squares

The results showed that the interaction between visual and message framing was not significant, $F(1, 59) = 0.259$, $p = 0.613$, partial $\eta^2 = 9.259 \times 10^{-4}$. This indicates that the effect of message framing on participants’ responses did not significantly differ depending on the visual presentation of the message. The obtained F-value did not reach the critical F- value at $\alpha = 0.05$, indicating a failure to reject the null hypothesis (H_0) for the interaction effect.

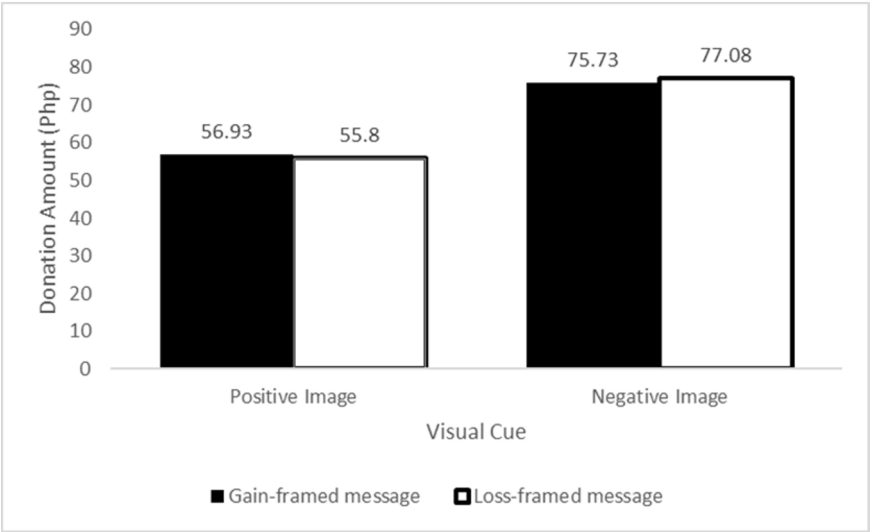


Fig 3. Effects of message framing (gain vs. loss) and visual framing (positive vs. negative) on donation amounts (in Philippine pesos). Values represent mean donations across conditions ($N = 60$). Participants donated more under negative visual conditions compared to positive visuals, regardless of message framing

4 Discussion

This study examined the effects of visual framing (positive vs. negative) and message framing (gain vs. loss) on charitable donation behavior in the context of animal welfare appeals. The results demonstrated that visual framing exerted a significant influence on donation amounts, whereas message framing and the interaction between the two framing strategies did not. Specifically, participants donated more money when exposed to negatively framed images of dogs compared to positively framed ones.

4.1 Visual Farming

The findings of this study highlighted the significant effect of visual framing on donation behavior. The results show that the participants donated more when exposed to negatively framed images of dogs than when shown positively framed ones. This supports the premise of Prospect Theory, which posits that individuals are more sensitive to potential losses than to equivalent gains. Within the context of charitable giving, negatively framed visuals depicting suffering animals likely triggered stronger emotional arousal and loss aversion, compelling participants to act to prevent further harm.

This result is consistent with a growing body of literature showing that negative emotions such as sadness and guilt are strong motivators of prosocial behavior. For example, negatively valenced imagery has been found to increase empathy and prosocial behavior, such as altruistic giving, more than neutral or positive visuals [13]. Similarly, exposure to distressing animal images willingness to volunteer [9]. More recently, it is observed that in environmental campaigns, the use of negative visuals, such as animals in danger or degraded landscapes, was more effective in driving engagement than positive images of healthy ecosystems [9]. The current findings align closely with these studies, reinforcing the idea that vivid, emotionally charged images can strongly encourage people to help. This interpretation reports that visual concreteness often enhances perceived credibility and empathy, thereby exerting stronger effects than abstract message framing. Likewise, a recent study on moral framing in digital fundraising found that negatively framed appeals emphasizing harm or unfairness mobilized more donors, even if the average amount given per donor was slightly reduced. This suggests that negative visuals not only capture attention but also broaden participation—a pattern that parallels our finding that participants consistently gave more in the negative visual condition.

These findings show the impact of visual framing in shaping giving behavior. The negative images functioned as ecological affordances, presenting the suffering animal as a direct call to action and prompting participants to perceive donating as the immediate and meaningful response. In contrast, positive images may have conveyed a sense of stability or resolution, reducing urgency and lowering donations.

4.2 Message Farming

In contrast to the strong effects of visual framing, message framing (gain vs. loss) did not produce a significant difference in donation behavior. This finding differs from much of the framing literature, which has often suggested that loss-framed messages are more persuasive than gain-framed ones in charitable contexts. According to Prospect Theory [11], appeals that emphasize the consequences of inaction (e.g., “Without your help, more dogs may be left without loving homes”) should be more compelling than those that highlight the benefits of donating (e.g., “With your help, more dogs can live happily in loving homes”). However, the current results suggest that this theoretical prediction did not reflect the current study.

One explanation lies in the greater perceptual impact of visuals versus text. As noted in a review of framing and donation behavior, message framing often interacts with other factors. Donor attitudes, cultural values, and the presence of vivid imagery can all shape giving behavior. In our study, the negatively framed visuals were emotionally powerful and may have overshadowed the subtler textual cues. When participants were exposed to strong visual and textual stimuli simultaneously, it is possible that the image captured their attention and emotional response, reducing the potential impact of message framing. This interpretation is consistent with findings of the effects of message framing in social media advertising. Their results indicated that the concreteness of the appeal, rather than the gain–loss distinction, predicted persuasion [14]. Possibly because detailed or vivid content increased credibility and empathy. In the present study, the brief gain or loss-framed captions may have lacked

sufficient concreteness to shift donor behavior, especially compared to the immediacy of the dog images. The null effect also reflects insights that negatively framed textual appeals only reliably influence donor behavior when presented without competing visual stimuli. When paired with strong imagery, textual frames had reduced impact.

Our study shows consistent results: negative visuals significantly influenced behavior, whereas gain vs. loss wording added little once an image was present. Another possible explanation is cultural. Much of the existing evidence on message framing comes from Western populations, where individual decision-making may place greater emphasis on rational trade-offs. In collectivist cultures such as the Philippines, decision-making may be more relational and emotion-driven, prioritizing empathy and shared responsibility over textual persuasion. In such contexts, visual and emotional affordances may resonate more strongly than abstract gain–loss contrasts.

The absence of a message framing effect in this study highlights that framing effects are not universal but context - dependent. While loss frames can be more persuasive than gain frames in certain situations, their influence may be lessened when other cues, such as emotionally charged visuals, dominate attention and affective response. This aligns with research suggesting that the perceptual importance of images often outweighs subtle textual differences in guiding donor behavior, especially in fast-paced or emotionally engaging contexts.

4.3 Interaction Between Message and Visual Framing

This study also examined the interaction effects of visual and message framing on donation behavior. The statistical analyses revealed no significant interaction effect, meaning that the combination of visual (positive vs. negative) and message framing (gain vs. loss) did not together affect participants' donation patterns. While donations were descriptively highest in the negative-visual plus loss-message condition and lowest in the positive-visual plus loss-message condition, these differences did not reach statistical significance.

One possible explanation for the absence of a significant interaction in the present study is that emotional responses to visual cues may override the more subtle effects of textual framing. Exposure to negatively valenced images has been shown to increase altruistic giving in experimental games [13]. However, these effects were not universal; they were moderated by dispositional empathy and levels of in-group trust, with stronger effects among participants lower in trust and higher in empathy. This suggests that emotionally charged images can drive prosocial behavior, though their impact is contingent on individual differences. In the context of AWOs, where donation boxes often feature highly emotive imagery, such responses may dominate donor decision-making and diminish the relative influence of accompanying textual frames. Another explanation comes from the Elaboration Likelihood Model.

According to this model, visuals tend to influence behavior through the peripheral route, producing rapid, emotionally captured responses, while message framing engages the central route, requiring more cognitive effort. When donation decisions are made quickly and under strong emotional influence, peripheral cues like images may dominate, leaving little opportunity for message frames to affect outcomes. This could explain why participants' donations were shaped primarily by visual framing, regardless of the message condition. Cultural context may also have contributed to the absence of interaction. In collectivist cultures like the Philippines, empathic concern and relational obligation may play stronger roles than analytical trade-offs between gains and losses.

Visual cues depicting suffering may resonate more deeply with culturally rooted values of *pakikiramay* (shared sympathy), while textual frames may not carry equivalent weight. Thus, while prior studies conducted in Western contexts observed significant interactions, the Philippine setting may moderate these effects. Finally, methodological factors may have

contributed. The use of brief captions in the message manipulation may have limited their strength compared to the vivid 2.5×6 ft visuals. Additionally, the within-subjects design exposed participants to all conditions, possibly reducing the distinctiveness of the message manipulation across trials. Future research could test whether more elaborate messages, or a between-subjects design, would reveal interaction effects.

The absence of interaction suggests that visual framing is the main factor driving donation behavior, while message framing has little or no effect when both cues are present. This highlights the importance of considering which cues dominate and the context in which they appear. Instead of working together or enhancing each other, message and visual frames may compete for attention and emotional impact, with the more noticeable cue, in this case the visual, ultimately guiding donor behavior.

5 Conclusion

There are three questions raised at the beginning of the study. The first research question is, “Is there a significant effect of visual framing (positive visual framing and negative visual framing) on giving behavior?” This study found that the type of image presented significantly affects donors’ donations. Specifically, negatively framed images had a more positive effect on participants’ donations. The next question is, “Is there a significant effect of message framing (loss-framed message and gain-framed message) on giving behavior?” In this study, message framing did not have a significant effect on participants’ giving behavior. Finally, the last question is, “Is there a significant effect of the interaction between message framing and visual framing on giving behavior?” This study found that there is no significant interaction between message framing and visual framing on giving behavior.

In conclusion, this study provides important insights into how visual cues, particularly the role of images, affect donor intention. It also offers practical strategies for Non-Profit Organizations (NGOs), specifically Animal Welfare Organizations (AWOs), to improve their donation campaign strategies by utilizing visual and message cues more effectively. Incorporating negatively framed images that serve as stronger visual prompts for action, AWOs may be able to enhance donation intention, even when message framing alone does not yield a significant effect. Although this study has limitations, such as the use of play money and a controlled environment, it lays the groundwork for future research to explore how these findings apply in real-world donation settings.

The findings of this study recommend that future research should replicate this study in a real-world setting to further showcase natural giving intentions. Future studies should increase statistical power, especially through expanding the diversity of the participants’ demographics, including participants from different backgrounds, to help ensure the relevance of the results across different demographics. Future researchers may further explore the influence of visual and message framing in different contexts in societal or environmental aspects. Furthermore, adopting longitudinal approaches in future studies is strongly encouraged to enhance the depth and reliability of the results.

6 Implication

The findings of this study contribute to the ongoing refinement of framing theory in the context of charitable giving. The dominance of visual framing, the null effect of message framing, and the absence of interaction between the two highlight the need to reconsider how framing mechanisms operate across different modalities and cultural contexts. From the perspective of Prospect Theory, the strong effect of negative imagery supports the principle of loss aversion: individuals are more motivated to act when faced with potential harm or

suffering than when presented with potential benefits. In this sense, negatively framed animal images functioned as clear reminders of what would be lost if action were not taken. However, the lack of a significant effect of message framing complicates the straightforward application of Prospect Theory. If loss aversion applies equally to textual content, loss-framed messages should have elicited stronger responses.

The current findings suggest that the modality of the frame matters, with images having greater ecological validity and emotional immediacy than short textual statements. This insight is clarified by integrating the lens of ecological psychology. From this perspective, both images and messages can be understood as affordances, environmental cues that invite specific behaviors. In the present study, negative visuals acted as more prominent affordances than textual messages, guiding participants toward donating. While message framing is theoretically relevant, it lacked the ecological strength to compete with the vividness of images.

This supports the idea that the effectiveness of a frame depends on the context, with behavior being guided primarily by the cue that captures the most attention. Moreover, the findings contribute to framing research in non-Western contexts. Much of the literature on message and visual framing has been conducted in Western, individualist populations. By showing that Filipino students were more responsive to visual cues than to textual ones, this study underscores the cultural contingency of framing effects. In collectivist settings where empathy and relational values such as *pakikiramay* (shared sympathy) are highly salient, emotionally charged images may resonate more powerfully than abstract gain–loss contrasts. This suggests that theories of framing should more explicitly account for cultural factors when predicting donation behavior.

Beyond theoretical insights, these findings carry practical significance for nonprofit organizations and fundraisers. For Animal Welfare Organizations (AWOs) and other nonprofits operating in resource-constrained environments, the results suggest that investments in strong visual content, particularly emotionally powerful, negatively framed imagery, may yield greater returns than focusing solely on message wording. Campaigns that rely on text alone, without compelling visuals, may fail to mobilize donations effectively. For digital fundraising, where audiences are flooded with competing stimuli, negative images can serve as salient affordances that break through information overload and motivate immediate giving. At a broader level, the study highlights the importance of aligning campaign design with the psychological realities of donors: appeals that tap into empathic urgency through visual cues are more likely to succeed than those that depend primarily on abstract textual framing.

Acknowledgements: The authors would like to extend their sincerest gratitude to Ms. Diana Cillo for her invaluable guidance, encouragement, and support throughout the conduct of this research. The authors also wish to thank their fellow co-authors for their diligence and collaboration as a team. This study would not have been possible without the support of Caraga State University, particularly the Office of the Vice President for Student Affairs and Auxiliary Services, for granting formal authorization to conduct this research on campus premises. The authors are also deeply appreciative of the sixty undergraduate students from various colleges of the university who generously volunteered their time to participate in this study. Finally, the authors gratefully acknowledge all individuals who directly or indirectly contributed to the successful completion of this research.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors and was self-funded by the authors.

Data Availability Statement: The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Authors' Contributions Statement: NRP and XRG conceptualized and designed the study, and provided overall supervision. All authors contributed in writing the draft. ZA, YP, NRP, XRG and JPS compiled and analyzed previous research. AC, CAN, VJP and EMB were responsible for the theory,

conceptualization and methodology of the study. All authors carried out the investigation, collected the data, and assisted in preparing the research materials. NRP organized the data, performed the formal statistical analyses, and created the figures and visualizations. NRP, YP, EMB, and JKR contributed to data interpretation. All authors contributed to writing, critical revision, and final approval of the manuscript.

Competing Interest: The authors declare that they have no competing interests.

References

1. G. M. Broad, Effective animal advocacy: effective altruism, the social economy, and the animal protection movement, *Agriculture and Human Values* **35**, 777 (2018) <https://doi.org/10.1007/s10460-018-9873-5>
2. R. Ranucci and H. Lee, Donor influence on long-term innovation within nonprofit organizations, *Nonprofit and Voluntary Sector Quarterly* **48**, 1045 (2019) <https://doi.org/10.1177/0899764019843346>
3. L. He and T. Meng, How Facial Expressions of Recipients Influence Online Prosocial Behaviors?—Evidence from Big Data Analysis on Tencent Gongyi Platform, *Journal of Social Computing* **4**, 337 (2023) <https://doi.org/10.23919/jsc.2023.0026>
4. J. Kiverstein and G. F. Artese, The experience of affordances in an intersubjective world, *Topoi* **43**, 187 (2024) <https://doi.org/10.1007/s11245-023-09969-4>
5. S.-H. W. Paik, The Influence of Visual Cues on Consumer Donations, University of Oregon, 2020
6. B. Sung, F. Septianto, and M. Stankovic, The effect of severe imagery in advertising on charitable behavior and the moderating role of social closeness, *Journal of Consumer Affairs* **57**, 1352 (2023) <https://doi.org/10.1111/joca.12531>
7. G. Salazar, J. Neves, V. Alves, B. Silva, and D. Veríssimo, Picturing donations: Do images influence conservation fundraising?, *PloS One* **16**, e0251882 (2021)
8. A. Erlandsson, A. Nilsson, and D. Västfjäll, Attitudes and donation behavior when reading positive and negative charity appeals, *Journal of Nonprofit & Public Sector Marketing* **30**, 444 (2018) <https://doi.org/10.1080/10495142.2018.1452828>
9. G. Salazar, M. C. Monroe, M. Ennes, J. A. Jones, and D. Veríssimo, Testing the influence of visual framing on engagement and pro-environmental action, *Conservation Science and Practice* **4**, e12812 (2022) <https://doi.org/10.1111/csp2.12812>
10. J. Zhou, Social Media Fundraising: How Message Framing and Typeface Design Affect Donation Intentions, Auckland University of Technology, 2024
11. D. Kahneman and A. Tversky, *Prospect Theory: An Analysis of Decision under Risk*, in *Handbook of the Fundamentals of Financial Decision Making: Part I* (World Scientific, 2013), pp. 99–127
12. K. Y. J. Lee, Motivating Charitable Giving: The Interaction of Affective Images and Goal-Framing on Donation Intention, The University of Hong Kong (Pokfulam, Hong Kong), 2022
13. P. A. Powell, O. Wills, G. Reynolds, K. Puustinen-Hopper, and J. Roberts, The effects of exposure to images of others' suffering and vulnerability on altruistic, trust-based, and reciprocated economic decision-making, *Plos One* **13**, e0194569 (2018) <https://doi.org/10.1371/journal.pone.0194569>
14. A. Xiao, Y. Huang, D. S. Bortree, and R. D. Waters, Designing social media fundraising messages: An experimental approach to understanding how message concreteness and framing influence donation intentions, *Nonprofit and Voluntary Sector Quarterly* **51**, 832 (2022) <https://doi.org/10.1177/08997640211022838>