



## Can message framing lead to a pro-environmental behavior?: Evidence from two experiments

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### Abstract

This study conducted two experiments to investigate the impact of threat and hope messages, framed as either global or local issues, on pro-environmental behavior. In Study 1 & 2, participants evaluated climate change campaign posters with different message framings. The researchers examined how threat and hope appeals, presented in global and local contexts, influenced participants' pro-environmental attitudes and intentions, also analyzing the effects of these messages on the number of donations made by participants in both study. The results of both experiments indicated that messages of threat and hope, framed as either global or local issues, significantly influenced participants' attitudes and behavioral intentions related to environmental protection. The effects varied based on framing context: fear messages had a greater impact when climate change was framed globally, while hope messages were more influential when framed locally. However, these messages did not have a significant impact on the amount of donations made. This research contributes to a deeper understanding of how various message strategies can be employed in climate change communication to effectively influence individual attitudes and intentions towards pro-environmental behavior intentions.

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## Introduction Background

Climate change has become a critical environmental issue with significant impacts on nature, human life, and infrastructure worldwide (IPCC, 2021). Indonesia ranks as the tenth-largest emitter of greenhouse gases globally, according to the Global Carbon Report in 2021. Previous research by E. Bohensky et al. (2013) examined household engagement with climate change in Indonesia and found that 81.9% of the surveyed households observed climate change, but proactive actions were relatively low.

Climate risks need to be considered in decision-making and planning, including how messages about climate change are conveyed to the public. Effective communication plays a vital role in climate change mitigation by utilizing persuasive messages to change individual behaviors (Chadwick, 2015). Behavioral change campaigns often employ Fear appeals or Hope appeals, including campaigns addressing climate change. Previous research by Chadwick (2015) found that messages emphasizing hope were more persuasive than fearening messages. Another study comparing the emotional appeals of hope and fear found that hope appeals were more effective in influencing respondents' intentions in internal communication and self-efficacy in reducing climate change. Positive message framing led to greater intentions to engage in mitigation behavior compared to negative framing (Morton et al., 2011).

The majority of Indonesia's population consists of Generation Z (born between 1997 and 2012) and millennials (born between 1981 and 1996). Generation Z represents approximately 27.94% of the total population, while millennials make up around 25.87%. Both generations have a high level of awareness regarding the climate crisis in Indonesia. They perceive climate change as a human-caused crisis and support immediate actions to address it. Factors perceived to contribute to climate change include deforestation, industrial sectors, plastic usage, and logging. Therefore, it is crucial to examine how persuasive messages employing emotional appeals influence the attitudes, behavioral intentions, and donation amounts of Generation Z in responding to climate change (Indikator, 2021).

In the context of research on emotional appeals of fear and hope messages in environmental communication, particularly regarding climate change, there has been limited research conducted in Indonesia. This study replicates the research conducted by Lee et al. (2017), which investigated the effectiveness of hope and fear messages in environmental communication through an experimental study. This research aims to examine the persuasive effects of hope and fear messages framed in the context of global and local climate change issues on pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts among Generation Z in Indonesia.

## Research Question

This study aims to investigate the influence of fear and hope messages, influenced by emotional appeals, and framed within global and local issues on pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts. Replicating the study by Lee et al. (2017), the researcher intends to examine how communication messages can influence individuals in addressing climate change, considering the low level of proactive actions related to climate change in Indonesia. The research questions include: 1) Among fear messages framed with global versus local issues, which one significantly affects pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts? 2) Among hope messages framed with global versus local issues, which one significantly affects pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts? 3) Among hope and fear messages framed with global versus local issues, which one significantly affects pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts?

## Research Objective

The objective of this study is to evaluate the influence of fear and hope messages, framed within global and local issues, on pro-environmental attitudes, pro-environmental behavioral intentions, and donation amounts. With the findings obtained, this research aims to provide recommendations to relevant stakeholders in designing effective and relevant environmental communication messages for the Indonesian population.

## Literature Review

### *Persuasion*

Perloff (2010) defines persuasion as the process of convincing someone to change their attitudes or behaviors regarding a specific topic through symbolic processes of message exchange. Perloff identifies five important components in explaining the definition of persuasion: 1) Persuasion is a symbolic process; 2) Persuasion is an effort to influence individuals; 3) People persuade themselves; 4) Persuasion involves the transmission of a message; 5) Persuasion requires free choice.

### *Fear Appeal Persuasion Approach*

Fear appeal is defined by Witte (1993) as a persuasive message that induces fear by providing relevant and significant fear descriptions related to the individual's personal circumstances, followed by recommendations to mitigate that fear. Witte and Allen (2000) explain that fear appeal has structural, stylistic, and extraneous message features. The severity and susceptibility components of a fear in fear appeal elicit fear through perceived severity (e.g., the event leading to death) and susceptibility (e.g., being at risk in the event).

### *Extended Parallel Process Model (EPPM) Theory*

The Extended Parallel Process Model (EPPM) is widely studied and used by researchers to deliver persuasive messages. Kim Witte explains that individuals manage the fear aroused by fear-based messages to observe behavioral interests related to fear-based messages (Littlejohn et al., 2012). The underlying assumption of the EPPM theory is that when individuals are presented with fear-based messages consisting of severity and susceptibility, as well as efficacy messages comprising response efficacy and self-efficacy, they will respond by engaging in danger control or fear control (Witte, 1993).

### ***Hope Appeal Persuasion Approach***

Hope is a positive emotion that represents prospects for a better state than the current one, particularly when individuals do not perceive control over an outcome (Lazarus, 1991). Empirical research on hope messages is still relatively limited, although they are widely used in political campaigns and public health campaigns (Chadwick, 2015). Scholars suggest that hope appeals can provide individuals with a positive vision and motivate them to take sustained actions to achieve that vision (Chadwick, 2015). Additionally, hope messages may be more effective than fear or guilt appeals (Smith & Leiserowitz, 2014).

### ***Global versus Local Message Framing in Persuasion***

Message framing has been extensively discussed in the context of environmentally friendly marketing (Kim & Kim, 2014). Research by Scannell and Gifford (2013) examined individuals' perceptions of global and local environmental issues, considering the concept of environmental hipopia. The findings indicated that individuals tended to prioritize global environmental issues and perceive them as more important. However, the effectiveness of local messages in changing individuals' attitudes toward climate change still requires further research (Wiest et al., 2015). Another study by Haden et al. (2012) showed that using a framing that highlights the impact of climate change at the local level can enhance perceptions of problem severity and support for local policy actions. Nevertheless, further research is needed to gain a deeper understanding of the effects of local messages in climate change communication.

### ***Experimental Studies on Hope and Fear Appeals in Environmental Communication***

Experimental studies have been conducted to test the effects of climate change messages on pro-environmental attitudes and behavioral intentions. Nabi et al. (2018) found that emotions, particularly hope, mediate the relationship between framed messages and desired climate change policy advocacy attitudes. Lee et al. (2017) found that fear-appeal messages increase attention, positive attitudes toward environmental issues, and behavioral intentions more than hope-appeal messages in the context of global environmental issues. However, hope-appeal messages are more effective in the context of local environmental issues. These studies provide valuable insights into understanding the influence of messages and emotions in changing pro-environmental attitudes and behavioral intentions.

### **Research Hypotheses**

This study will examine the persuasion using the emotional appeal of hope and fear messages framed in the global and local context of climate change, focusing on pro-environmental behavior in Indonesia. The following hypotheses are formulated:

- H1: When the issue of climate change is framed in a global context, fear appeal will have a more significant influence than hope appeal on Pro-Environmental Attitudes, Pro-Environmental Behavioral Intentions, and Donation Amounts.

The study by Lee et al. (2017) found that when environmental issues are addressed in a global context, fear appeals attract more attention from the audience and have a positive impact on attitudes, behavioral intentions, and donation amounts. The research by Scannell and Gifford (2013) supports the concept of environmental hipopia, which suggests that individuals tend to prioritize global environmental issues over local ones.

- H2: When the issue of climate change is framed in a local context, hope appeal will have a more significant influence than fear appeal on Pro-Environmental Attitudes, Pro-Environmental Behavioral Intentions, and Donation Amounts.

The study by Lee et al. (2017) found that in a local environmental context, hope appeals are more effective than fear appeals in influencing attention, attitudes, behavioral intentions, and donation amounts. The research by Wiest et al. (2015) indicates that when climate change issues are connected to local impacts, individuals tend to take collective action. suggests that individuals tend to prioritize global environmental issues over local ones.

## Research Framework

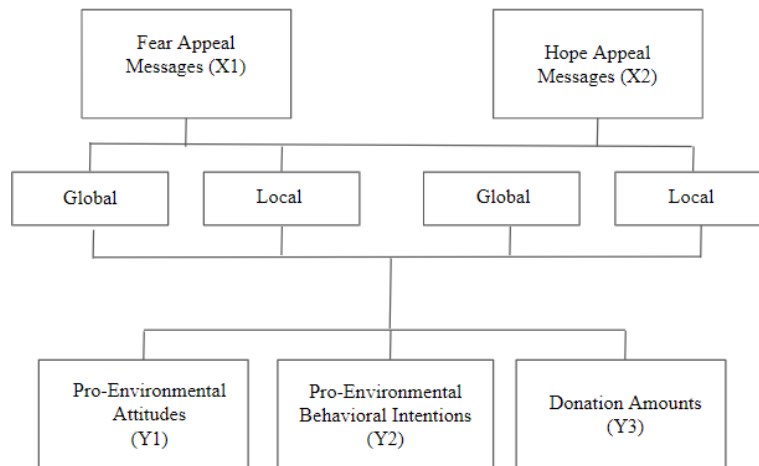


Figure 1. Research Framework

This research examines the independent variables of fear appeal messages (X1) and hope appeal messages (X2) framed in global and local contexts, and their effects on the dependent variables of Pro-Environmental Attitudes (Y1), Pro-Environmental Behavioral Intentions (Y2), and Donation Amounts (Y3). Two experimental studies will be conducted to examine the influence of the independent variables on Pro-Environmental Attitudes (Y1), Pro-Environmental Behavioral Intentions (Y2), and Donation Amounts (Y3).

## Methods

This research adopts a positivist paradigm with a quantitative approach and an experimental design. A between-subject design with treatments involving fear appeal and hope appeal messages framed in global and local issues will be used. This study utilizes a post-test only experiment. The research will be conducted in person, involving Generation Z individuals aged 8 to 23 years, with a selected sample from a public high school in Jakarta. The experimental matrix in this study consists of two experiments, each involving message framing (local vs. global) and message type (hope vs. fear).

## Research Instruments

The research instrument used in this study is climate change advertisement manipulation in the form of posters. The researcher created manipulations by presenting climate change advertisements containing fear appeal and hope appeal messages framed in global and local issues.

**Table 1.**  
Manipulation Instrumentation

Manipulation Instrument	Remarks
<b>Experiment 1 Design</b>	
Instrument 1	Local Issue - Fear Appeal Message
Instrument 2	Local Issue - Hope Appeal Message
Instrument 3	Global Issue - Fear Appeal Message
Instrument 4	Global Issue - Hope Appeal Message
<b>Experiment 2 Design</b>	
Instrument 5	Local Issue - Fear Appeal Message
Instrument 6	Local Issue - Hope Appeal Message

Instrument 7	Global Issue - Fear Appeal Message
Instrument 8	Global Issue - Hope Appeal Message

Study 1 employs local issue framing with two types of messages: fear appeal and hope appeal. The fear appeal message highlights serious consequences with a poster title emphasizing the fear of "You Will Die If You Don't Make Changes for Indonesia" and a background image depicting a dangerous situation. The hope appeal message, on the other hand, emphasizes positive contributions with a poster title of "You Are the Hope for Indonesia" and a background image reflecting hope. Both messages aim to encourage individuals to address climate change.

In Study 2, the researcher uses a komodo dragon image for local framing and a polar bear image for global framing, along with the Greenpeace logo as a stimulus. A survey was conducted to select the komodo dragon as an animal that represents Indonesia's unique characteristics, and it was chosen because it is a protected species that is endangered. In the local framing, the fear appeal poster uses language and imagery that depict the negative impacts of climate change, while the hope appeal poster encourages positive actions. The fear appeal poster uses a red color scheme and a barren background, while the hope appeal poster uses bright colors and a green background.

## Result

### Manipulation Check Results for Experimental Attributes

The manipulation check results indicated the participants' assessment of the attribute alignment with the fear and hope posters framed in global and local issues. Participants were asked to rate the attributes on a scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree).

### Research Respondent Data

The research respondent data includes information about gender, age, and education level. A total of 234 participants, including both males and females, participated in this experimental study. The participants were divided into eight different groups with randomized gender placements. The percentage of male participants was 45.7%, consisting of 107 individuals, while the percentage of female participants was 54.3%, consisting of 127 individuals. Based on age, the majority of participants were 17 years old, with a total of 128 individuals (55%), followed by 18 years old with 65 individuals (28%). Additionally, there were 22 individuals (9%) aged 16, 16 individuals (7%) aged 19, and 3 individuals (1%) aged 20. All participants had completed junior high school education, as they were still in senior high school.

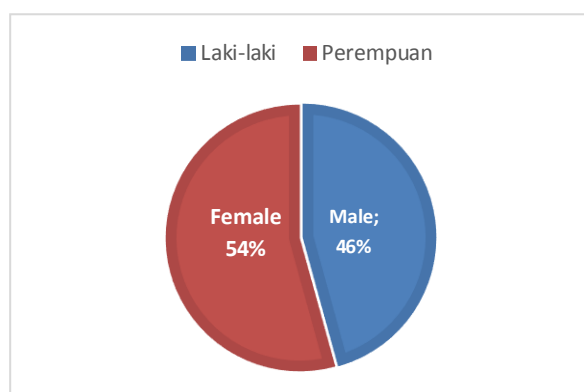


Figure 2. Percentage of Participant Gender

### Validity and Reliability

In this study, validity and reliability tests were conducted on the research instrument, which was the questionnaire. The results showed that all questions in the questionnaire had good validity with significance values below 0.05. Furthermore, reliability testing was conducted using the Cronbach's alpha method, which yielded reliability values ranging from 0.84 to 0.85 for each question in the questionnaire, indicating excellent reliability. The Kaiser-Meyer-Olkin (KMO) test was also conducted and resulted in a value of 0.80,

indicating that the variables used in this study have sufficient capability to explain the factors being examined.

### Mean and Standard Deviation Values

**Table 2.**  
Mean and Standard Deviation Values

Dependen Variabel	Mean	Std
Attitude	5,48	1,068
Behavioral Intention	5,73	0,93
Donation Amount	21,795	24,424

For the attitude variable, the mean values for each indicator indicate a high attitude towards environmental issues. In the presented table, the overall mean value for the attitude variable is 5.48 with a standard deviation of 1.068. This indicates that the respondents, as a whole, have a positive attitude towards climate change conditions. For the behavioral intention variable, the mean values indicate a high intention to address climate change. The overall mean value for the behavioral intention variable is 5.73 with a standard deviation of 0.93. This shows that respondents have a strong intention to follow recommendations in addressing the impacts of climate change.

For the donation amount variable, there is variation in the mean values among the groups. The overall mean value for the donation amount variable is Rp 21,795 with a standard deviation of 24,424. Thus, the analysis of mean and standard deviation values indicates that respondents, in general, have a positive attitude, high behavioral intentions, and the potential to make donations in environmental conservation efforts. Additionally, the variation among the groups indicates the influence of global fear messages on the attitudes, behavioral intentions, and donation amounts of the respondents.

### ANOVA Analysis

This study conducted statistical data analysis using the F-test analysis of variance (ANOVA) for each variable, namely Attitude, Behavioral Intention, and Donation Amount.

#### Attitude Variable

**Table 3.**  
ANOVA Test for Attitude in Experimental Studies 1 and 2

Attention	Sum of Squares	df	Mean Square	F	Sig.
<b>Experimental Study 1</b>					
Between Groups	485.736	3	161.912	21.354	0.000
Within Groups	879.564	116	7.582		
Total	1365.3	119			
<b>Experimental Study 2</b>					
Between Groups	412.57	3	137.523	21.751	0.000
Within Groups	695.5	110	6.323		
Total	1108.07	113			

Based on the F-test (ANOVA) results in the above table, it is found that there is a significant influence of the independent variables on the dependent variable, indicating that fear and hope posters framed in local and global issues in Experimental Studies 1 and 2 have a significant effect on the respondents' attitudes.

**Tabel 4.**

Post Hoc-Tukey Group Comparisons on Attitude in Experimental Studies 1 and 2

(I) Kelompok	(J) Kelompok	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<b>Experimental Study 1</b>						
Local Hope	Local Fear	4.129*	0.696	0.000	2.310	5.94
Global Fear	Global Hope	3.728*	0.730	0.000	1.830	5.63
<b>Experimental Study 2</b>						
Local Hope	Local Fear	3.910*	0.644	0.000	2.230	5.59
Global Fear	Global Hope	3.613*	0.691	0.000	1.810	5.41

\* The mean difference is significant at the 0.05 level.

The research findings from the two experimental studies support both hypotheses proposed. The findings indicate that fear appeal has a more significant influence in shaping attitudes towards climate change in the global context, while hope appeal is more effective in the local context. There are significant mean differences between the groups in both experimental studies. In Experimental Study 1, there is a mean difference of 4.129 between the Local Hope Group and the Local Fear Group, with participants in the Local Hope Group having a more positive attitude related to the local hope message. A mean difference of 3.728 is also found between the Global Fear Group and the Global Hope Group, with participants in the Global Fear Group having a more positive attitude related to the global fear message.

In Experimental Study 2, there is a mean difference of 3.910 between the Local Hope Group and the Local Fear Group, with participants in the Local Hope Group having a more positive attitude related to the local hope message. A mean difference of 3.613 is also found between the Global Fear Group and the Global Hope Group, with participants in the Global Fear Group having a more positive attitude related to the global fear message.

Behavioral Intention Variable

**Table 5.**

ANOVA Test for Behavioral Intention in Experimental Studies 1 and 2

Behavioral Intention	Sum of Squares	df	Mean Square	F	Sig.
<b>Experimental Study 1</b>					
Between Groups	362.212	3	120.737	22.536	0.000
Within Groups	621.488	116	5.358		
Total	983.7	119			
<b>Experimental Study 2</b>					
Between Groups	210.62	3	70.207	11.936	0.000
Within Groups	647.038	110	5.882		
Total	857.658	113			

Based on the F-test (ANOVA) results in the above table, it is found that there is a significant influence of the independent variables on the dependent variable, indicating that fear and hope posters framed in local and global issues in Experimental Studies 1 and 2 have a significant effect on the respondents' behavioral intentions.



**Table 6.**

Post Hoc-Tukey Group Comparisons on Behavioral Intention in Experimental Studies 1 and 2

(I) Kelompok	(J) Kelompok	Mean Difference (I- J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<b>Experimental Study 1</b>						
Local Hope	Local Fear	1.318	0.585	0.115	-0.210	2.84
Global Fear	Global Hope	4.760*	0.613	0.000	3.160	6.36
<b>Experimental Study 2</b>						
Local Hope	Local Fear	1.497	0.621	0.081	-0.120	3.12
Global Fear	Global Hope	3.650*	0.666	0.000	1.910	5.39

\* The mean difference is significant at the 0.05 level.

The analysis results show that in Experimental Study 1, there is no significant difference between the Local Hope Group and the Local Fear Group in the Behavioral Intention variable, with a mean difference of 1.318. However, there is a significant difference between the Global Fear Group and the Global Hope Group, with a mean difference of 4.760. This indicates that participants in the Global Fear Group have higher behavioral intentions than participants in the Global Hope Group related to the global fear message.

In Experimental Study 2, there is no significant difference between the Local Hope Group and the Local Fear Group in the Behavioral Intention variable. However, there is a significant difference between the Global Fear Group and the Global Hope Group, with a mean difference of 3.650. This indicates that participants in the Global Fear Group have higher behavioral intentions than participants in the Global Hope Group related to the global fear message.

These results support the research hypothesis that fear appeal has a more significant influence than hope appeal in shaping behavioral intentions related to climate change in the global context.

Donation Amount Variable

**Table 7.**

ANOVA Test for Donation Amount in Experimental Studies 1 and 2

Donation Amount	Sum of Squares	df	Mean Square	F	Sig.
<b>Experimental Study 1</b>					
Between Groups	4169295071	3	1389765024	2.273	0.084
Within Groups	7.09E+10	116	611469798.2		
Total	7.51E+10	119			
<b>Experimental Study 2</b>					
Between Groups	4449349083	3	1483116361	2.749	0.046
Within Groups	59338589514	110	539441722.9		
Total	63787938596	113			

Based on the F-test (ANOVA) results, Experimental Study 1 shows that there is no significant difference in Donation Amount between the tested groups. In the context of this study, the tested factors do not have a significant influence on the amount of donation given by the participants. However, Experimental Study 2 reveals a significant difference in Donation Amount between the tested groups. This indicates that



the tested factors have different influences on the amount of donation in different experimental study contexts.

### Interaction Test

**Table 8.**

Interaction Test of Message and Framing on Attitude, Behavioral Intentions, and Donation Amount

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
<b>Attitude</b>					
Corrected Model	865.263a	3	288.421	41.185	0.000
Intercept	62583.66	1	62583.660	8936.526	0.000
Issue Framing	1.475	1	1.475	0.211	0.647
Message	3.78	1	3.780	0.540	0.463
Issue Framing * Message	854.482	1	854.482	122.014	0.000
<b>Behavioral Intention</b>					
Corrected Model	555.545a	3	185.182	32.996	0.000
Intercept	68614.606	1	68614.606	12226.020	0.000
Issue Framing	117.322	1	117.322	20.905	0.000
Message	5.284	1	5.284	0.942	0.333
Issue Framing * Message	458.132	1	458.132	81.632	0.000
<b>Donation Amount</b>					
Corrected Model	8620521551.189a	3	2873507183.7	5.069	0.002
Intercept	1.091E+11	1	1.091E+11	192.531	0.000
Issue Framing	700365444.8	1	700365444.8	1.236	0.267
Message	44983968.81	1	44983968.8	0.079	0.778
Issue Framing * Message	8132430915	1	8132430914.6	14.347	0.000

a R Squared = .062 (Adjusted R Squared = .050)

In the interaction test, a two-way ANOVA is conducted to examine the interaction between two independent variables (issue framing and message) on attitude, behavioral intention, and donation amount. The analysis between-subjects for the Attitude variable shows significant findings in the relationship between issue framing, message, and their interaction. Specifically, the individual effects of issue framing and message separately are not significant on participants' attitudes. However, the interaction between issue framing and message has a significant effect on participants' attitudes. This indicates that the effectiveness of the message in influencing participants' attitudes depends on how the issue is framed and how the message is delivered.

In the analysis of the Behavioral Intention variable, the results show that the overall corrected model significantly contributes to explaining the variance in participants' behavioral intentions ( $p < 0.001$ ). The factors of issue framing and the interaction between issue framing and message significantly influence participants' behavioral intentions. Specifically, issue framing proves to have a significant effect on participants' behavioral intentions ( $p < 0.001$ ), while the message does not have a significant effect on participants' behavioral intentions ( $p > 0.05$ ). There is also a significant interaction between issue framing and message in influencing participants' behavioral intentions ( $p < 0.001$ ), indicating that the influence of the message on behavioral intentions may differ depending on how the climate change issue is framed.

In the analysis of the Donation Amount variable, it is found that the tested factors have a significant influence on the donation amount. Individually, the issue framing and message variables do not have a significant effect on the donation amount ( $p > 0.05$ ). However, there is a significant interaction between

issue framing and message on the donation amount ( $p < 0.001$ ), indicating that the combination of issue framing and message can significantly affect the donation amount.

## Hypothesis Descriptions

This study examined the influence of fear and hope messages in both global and local issues on attitudes, behavioral intentions, and donation amounts. The research findings support the first hypothesis that fear messages have a more significant influence than hope messages in shaping attitudes in the global context. The findings also support the second hypothesis that hope messages have a more significant influence than fear messages in shaping attitudes in the local context.

Regarding the behavioral intention variable, the findings support the first hypothesis that fear messages have a more significant influence than hope messages in the global context. However, the second hypothesis regarding the influence of hope messages in the local context cannot be conclusively determined. For the donation amount variable, the research results do not provide strong support for the hypothesis related to the donation amount. The differences in donation amounts between groups are not statistically significant.

## Discussion

This research emphasizes the examination of the effects of Fear and hope messages in both global and local contexts on attitudes, behavioral intentions, and donation amounts. Based on the results of the ANOVA tests, it is found that there is a significant influence of the independent variables on the dependent variables, indicating that the presentation of fear and hope messages with framing in global and local issues in Experiment 1 and 2 significantly affects respondents' attitudes and behavioral intentions. Regarding the Attitude variable, the findings from both experimental studies support the proposed hypotheses. The results show that the appeal of fear has a more significant influence in shaping attitudes towards climate change in the global context, while hope appeal is more effective in the local context. There are significant mean differences between groups in both experimental studies.

For the Behavioral Intentions variable, the analysis indicates that in both Experiment 1 and 2, there were no significant differences between the Local Hope Group and the Local Fear Group in terms of Behavioral Intentions, with a mean difference of 1.318. However, there was a significant difference between the Global Fear Group and the Global Hope Group, with a mean difference of 4.760. These results support the research hypothesis that the appeal of fear has a more significant influence than hope appeal in shaping behavioral intentions related to climate change in the global context. There were no significant differences in the Donation Amount variable between the tested groups.

Based on the two-way ANOVA results for the Attitude variable, there is a significant interaction between the framing of the issue and the message in influencing participants' attitudes. For the Behavioral Intentions variable, there is a significant interaction between the framing of the issue and the message in influencing behavioral intentions, emphasizing the importance of choosing appropriate framing of the issue and messages. For the Donation Amount variable, although the framing of the issue and the message individually did not have a significant influence, their interaction significantly impacted the donation amount. These findings highlight the importance of the right combination of issue framing and messages to motivate financial participation in addressing climate change.

Fear appeal and hope appeal have a significant influence on donations for climate change mitigation. When people empathize with the negative consequences of climate change, they are more likely to donate or provide financial support for efforts aimed at addressing this issue. Other factors influencing donations may vary depending on factors such as income level, belief in the effectiveness of mitigation actions, and understanding of the impacts of climate change. The donation amount is positively correlated with fear, perceived fear, and the perceived effectiveness (E. Palosaari et al., 2023).

Effective communication also plays a crucial role. Messages conveyed in an acceptable, clear, and relevant manner can increase participation in donations for climate change mitigation. The use of strong narratives and real-life examples of the benefits of mitigation efforts can inspire and encourage donors to contribute actively. Good communication in packaging climate change materials will ultimately build trust, even if the content is about climate change fears. Fear messages will not lead to a desire for donation if people do not have strong belief in their effectiveness (E. Palosaari et al., 2023).

Experimental research has examined various emotional factors that influence pro-environmental behavior. Studies have shown that inducing collective guilt about human-caused environmental damage can increase the likelihood of participation. The messages conveyed about the impact of climate change must evoke emotional responses in readers; in this context, the posters created by the researchers and given to

participants were found to evoke feelings of empathy towards climate change victims, which increased support for climate change mitigation policies.

Research on persuasion with a fear appeal approach has been a widely studied and developed topic. Hope appeal in persuasive communication has also been a significant subject of research. Hope appeal is used in an effort to influence attitudes and behaviors of individuals by presenting hope related to a specific issue or situation. In the context of persuasive messages, hope appeal aims to motivate message recipients to take desired actions by depicting positive consequences if those actions are taken. The development of research on hope appeal has explored various aspects and variables that affect the effectiveness of persuasive messages.

Experimental studies related to hope and fear appeal in environmental communication have been conducted by several researchers. One study by Lee et al. (2017) compared the effectiveness of hope and fear appeal messages in environmental communication. The results of the study showed that when the environmental issue was framed globally, messages using fear appeal were more effective in increasing respondents' attention, positive attitudes toward the environmental issue, and behavioral intentions compared to messages using hope appeal. However, when the environmental issue was framed as a local issue, hope appeal was more effective.

In a study conducted by Li & Huang (2020), an experimental study was conducted to examine the effect of high fear appeal on behavioral intentions. The results of the study showed that messages using high fear and high efficacy were most effective in persuading people to take action on climate change, and the use of fear appeal was considered an effective approach in changing people's behavioral intentions related to climate change. Another study by Chadwick (2015) also compared the effectiveness of hope and fear appeal. The results of the study showed that hope appeal was more effective in influencing respondents' intentions in internal communication and self-efficacy in reducing climate change compared to messages containing fear-inducing fears. Several studies have shown that emotions such as fear appeal and hope appeal can play a significant role in the success of persuasion related to climate change (Nabi, 2015).

These studies provide valuable insights into the influence of climate change messages on attitudes and pro-environmental behavioral intentions. The results of this research indicate that fear appeal and hope appeal have a significant influence on attitudes and behavioral intentions related to climate change. When individuals empathize with the negative consequences of climate change, they are more likely to participate by providing support for climate change mitigation efforts. Effective communication, with messages that are well-received, clear, and relevant, along with the use of strong narratives and real-life examples, can increase participation in donations for climate change mitigation. Additionally, this research also found that inducing collective guilt about environmental damage can increase support for climate change mitigation efforts.

## Conclusion

This research was conducted to examine the research questions by understanding the reception of fear and hope messages framed with global and local issues and their influence on attitudes, behavioral intentions, and donation amounts. The conclusions from this research are that global fear messages significantly influence individuals' attitudes and behavioral intentions. These findings support the hypothesis that the appeal of fear is more significant than hope appeal in influencing attitudes and behavioral intentions in the global context. However, the influence of fear messages on the donation amount cannot be strongly concluded based on the results of this research.

Local hope messages significantly influence individuals' attitudes and behavioral intentions. These findings support the hypothesis that hope appeal is more significant than fear appeal in influencing attitudes and behavioral intentions in the local context. In the local context, hope messages play a stronger role in influencing individual responses. However, the influence of hope messages on the donation amount cannot be strongly concluded based on the results of this research.

The analysis of the research results shows a significant interaction between the framing of the issue and the message in influencing attitudes, behavioral intentions, and the donation amount. This confirms that the effectiveness of messages depends on how the issue of climate change is framed and how messages are delivered to the respondents. For the Behavioral Intentions variable, there is a significant interaction between the framing of the issue and the message in influencing behavioral intentions. Moreover, although the framing of the issue and the message individually did not have a significant influence on the donation amount, their interaction significantly impacts the donation amount. These findings highlight the importance of choosing the right combination of issue framing and messages to increase financial participation in facing climate change.

## **Recommendations**

For future research, it is recommended to expand the research instruments by incorporating severity and susceptibility constructs in the framing of fear messages. Additionally, participant attention should also be considered as an important variable in the analysis. In future research, it is advisable to involve individuals from various age groups and generations to gain a more comprehensive understanding. Lastly, research should consider limitations in the number of participants and group selection methods to increase the external validity of the findings. By considering these recommendations, future research can provide a more comprehensive understanding of the factors influencing responses to persuasive messages related to climate change.

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