

Effects of framing on reforestation concern: A lab-in-the-field experiment in rural Philippines

Klarizze Anne M. Puzon^{1*}, Imelda R. Molina^{2†}

¹UNU-WIDER, United Nations, Helsinki, Finland and Center for Environmental and Resource Economics (CERE), Umea University and Swedish University of Agricultural Sciences, Sweden; *Email: Klarizze@wider.unu.edu

²College of Economics and Management, University of the Philippines Los Baños, College, Laguna, Philippines

ABSTRACT. This behavioral experiment examines whether framing affects environmental altruism in Mindoro, Philippines. The study looked into differences across ethnic groups, the non-farming *Tagalogs* and farming *Mangyans*, and designed a two-part donation task where the recipient is a non-government organization (NGO) reforestation project. Two treatments were considered: the giving game (GG) or the taking game (TG). In the first part of the experiment, under the giving game, respondents were asked how much they would donate to an NGO. Under the taking game, they were asked how much they would keep for themselves instead of giving to the NGO. In the second part, participants were asked what they would do if a hypothetical partner, who was either the same or from different ethnicity, donated half of the money to forest conservation. Results showed that *Mangyans* give more in the taking game than in the giving game. The behavior of *Tagalogs* is indifferent to framing.

Keywords: deforestation, environmental economics

INTRODUCTION

Deforestation in the Philippines has become one of the most pressing issues in the country. The phenomenon of deforestation is the conversion of forest cover into other forms of land that cater to the needs of human activities (Maohong 2012). The average annual deforestation rate in the Philippines is 2.48%; between 1990 and 2005, there has been a 32.3% loss in forest cover, amounting to 3.41 million ha (Mongabay.com 2006). Deforestation affects both environmental quality and economic development, which has social implications. Environmental issues force a tradeoff between economic growth and environmental quality. The growth of an economy is highly affected by the quality of its environment. This is apparent in the Philippines, where export products are often by-products of natural resources. Much of the country's 30 million hectare land is a forest zone and part of the public territory inhabited by indigenous

ethnic groups (De Vera 2007). Most of the indigenous people reside in the uplands they claim to be their ancestral domain. They often depend on traditional agriculture for livelihood, utilizing natural resources within.

Specific to our study is the Philippine island of Mindoro, which has an area of almost 10,000 km². Most of the indigenous people in Mindoro are called the *Mangyans*. Due to recent migrations and industrialization, the *Mangyans* learned to co-exist with the *Tagalogs*, the dominant Philippine group. Compared to the *Tagalogs*, who are generally more economically well-off and do not depend on farming, the *Mangyans* remain highly dependent on agriculture for livelihood (De Vera 2007). They rely on shifting cultivation in their ancestral lands. Because of deforestation in Mindoro, the *Mangyans* are also in danger

of losing their cultural identity. Schult (2008) claims that the Philippines is destroying its forests rapidly and endangering indigenous people's way of life. We conjecture that the *Mangyans* see nature as more sacred, as traditions co-exist with surrounding natural resources. This contrasts with the *Tagalogs*, who are not indigenous to lands in Mindoro and may see nature utilitarianly (Carandang & Lasco 2000).

An emerging solution is to combine the study of environmental economics with behavioral economics. Environmental altruism is the result of merging these two branches of economics. It is defined as a trade-off between personal monetary gains and willingness to give real money to a local environmental project. In the past, individuals could prioritize the welfare of the environment over monetary gains as the issue of reforestation has been considered a bio-physical operation that needs only minimal involvement from the people, but the opposite is true (Bouman & Steg 2019; Sharpe *et al.* 2021). However, it does not consider individual contributions toward improving environmental quality (Daube & Ulph 2016). At the most basic level, an individual can express altruism towards environmental issues. The reforestation problem is not merely biophysical; but also social (Bouman *et al.* 2020). Consequently, appealing to an individual's altruism is necessary for encouraging environmental awareness (Shogren & Taylor 2008).

In this regard, this paper aims to measure environmental altruism in the context of the rural island of Mindoro in the Philippines. The study aims to understand how changes in wording affect donation behavior. To do this, a behavioral experiment in Mindoro, Philippines, was done to determine the effect of positive versus negative framing in a two-part dictator game related to forest conservation efforts. Giving and taking behavior between *Tagalogs* (non-farmers) and *Mangyans* (farmers) were compared.

Study participants played a modified dictator game where they were rewarded real money conditional on decisions (Engel 2011). Following previous studies by Ellingsen *et al.* (2012) and Branas-Garza *et al.* (2010), the social context was incorporated into the experiment. The donation recipient was a local reforestation project, *i.e.*, a public good that benefits everyone in the community. Questions were framed as a Giving Game (GG) and Taking Game (TG). Participants were asked how much they would give from their own money in the giving treatment. In the taking treatment, a different set of participants were asked how much they will take away from an initial donation amount. The taking treatment is similar to Cappelen *et al.* (2013) though the experiment has a within-subject design where dictators were first given the option to give and then to take. This is different from the between-subject design of the experiment as participants were not given both options, and they only played one of either treatments.

To measure ethnic differences in behavior, two sets of participants varying in ethnicities (*Tagalog* and *Mangyan*) were considered. Unlike previous experiments, the design paired a dictator with a recipient belonging to a different group (Chen & Li 2009). In the second part, participants were told that they would play the same game as in the first part. However, before asking how much real money participants would allocate towards reforestation in the second part, they were asked to imagine a hypothetical partner who donated 50% of the allocation. With a between-subjects design, the ethnicity of the hypothetical partner was labeled as either the same or different from the participant as the main concern is on ethnic differences. As the questions in the second part were hypothetical, the focus was not given to real other-ethnicity competition as it would be against ethical grounds, especially since the respondents are from a small community, and to avoid conflict.

Statistical results showed that the *Tagalogs* and the *Mangyans* were willing to donate positive amounts of money for a reforestation project in Mindoro. *Mangyans* were more generous in the taking game than the giving frame treatment of the modified dictator game. They were more reluctant to take away money initially intended for a reforestation project. For the *Tagalogs*, this was not the case. Monetary donations were the highest in the taking game, where the respondents were *Mangyans*. Environmental altruism was lowest in the giving game with a *Tagalog* dictator. The effect of hypothetical same-ethnicity versus other-ethnicity information has a minimal impact.

For policymakers to increase people's awareness of ecological issues, it is helpful to study different ethnicities directly affected by deforestation in Mindoro. It is important to understand how certain groups perceive their ecological responsibility, which can be the case with the *Tagalogs* and the *Mangyans*. Therefore, depending on their claim, the *Tagalogs* or the *Mangyans* might believe they have more or less responsibility towards the natural resources and land. Especially for the *Mangyans*, reforestation increases when respondents are told that they are taking away money from a good cause. Willingness to contribute to an environmental project increases when people are explicitly informed of the trade-offs between personal and public good gains.

METHODOLOGY

Study site

This small-scale behavioral study was done in Occidental Mindoro, Philippines. During the latter months of 2019, data was gathered in the village of Barangay Udalo in the rural municipality of Abra de Ilog (**Figure 1**), located 13° 28.14' north, 120° 50.28' east. The respondents

were selected randomly and interviewed personally. The randomly chosen households represented Abra de Ilog, which has a total population of approximately 200 adults. The respondents were from two ethnicities in the province: the 50% *Tagalogs* and 50% *Mangyans*. The *Mangyan* respondents were farmers, but the *Tagalog* respondents were not. The experimental games did not require a high level of literacy and respondents were told they were playing a game involving real money. Lastly, fieldwork was implemented in compliance with proper ethical conduct. Consent was given by the local government of Abra de Ilog, village heads, and the participants. Respondents were told that they had the option to leave if they did not want to participate and that all data gathered will be treated privately and used solely for academic research.



Figure 1. Location map of Abra de Ilog in Mindoro, Philippines.

Experimental design

In the standard dictator game, the dictator is given complete control over the allocation of wealth. He or she can choose to keep the money or distribute some of it to a certain recipient (Engel 2011). The decision of the dictator to distribute real money can be considered an act of altruism. The amount transferred is often used to measure willingness

to give to the recipient (Branas-Garza *et al.* 2010). The study differs from other dictator games (Engel 2011) as social context (Ellingsen *et al.* 2012) was introduced. Also, the donation recipient is not a person but a reforestation project by Ecotone, a non-government organization doing pro-environmental activities in Mindoro. Everyone in the community is familiar with Ecotone and its various activities advocated by the local government. During the data collection period, instead of having anonymous individuals or the local government as the recipient, the study used an NGO to provide unbiased biodiversity conservation advocacy (Bryant 2002). Participants understand that the reforestation project will benefit biodiversity conservation (*e.g.*, by planting trees) in Mindoro. The dictator (*i.e.*, respondents) decides how much money to keep for themselves and how much will be allocated to reforestation efforts. Therefore, the amount of money donated is a proxy measure for environmental concern.

In this study, the modified dictator game was conducted as a lab-in-field experiment in the respondent's natural environment, targeting a theoretically relevant population using a validated and standardized laboratory procedure (Hermann 2014). All respondents, the dictators, are given a certain amount of money—PHP 60 (approximately 1 USD) to decide how much to allocate for recipient's reforestation project. For simplicity, respondents were allowed to allocate amounts in increments of 10. Donations towards reforestation were either: 0, 10, 20, 30, 40, 50, or 60. With a between-subjects design, GG and TG treatments were considered. The GG respondents were told that they could choose to keep the money for themselves or give some of it to the reforestation project. It was explained to the TG and a different set of participants that PHP 60 was allotted as a reforestation project donation. Participants were given the option to leave the money for reforestation or take money from the project. Whatever amount they take is for them to keep.

The game was played in two parts. At the start of the session, everyone was told that only one part would be paid, and a coin toss would randomly choose it at the end of the game. The first part was a GG or a TG where the recipient is the reforestation project by Ecotone. Over the past decade, Ecotone has actively promoted biodiversity and ecological awareness in Abra de Ilog. Environmental policies concerning indigenous people are best implemented with the help of NGOs, and they have a better chance of reaching the indigenous people because they are more visible than the government. The NGOs can oversee a project more closely than the government since their cause is more specific. For these policies to be successful, the execution needs the cooperation of the government and NGOs.

The second part of the game is the same as the first, but the dictators were told that a hypothetical partner donated PHP 30 or 50% of the initial allocation. As the experiment was conducted in a small, tightly-knit village, hypothetical other-ethnicity information was used to avoid conflict. After this, the dictators were again asked how much they would donate to the reforestation project from the PHP 60. The second part was conducted with both the same- and other-ethnicity partners. For same-ethnicity (other-ethnicity) partners, the study aimed to know how much would be donated if someone from the same (different) ethnicity donated PHP 30. Finally, participants were asked to give their best and most honest responses. Instructions were given orally in *Tagalog* (i.e., the Philippine language known by both ethnic groups), while a local assistant recorded responses. The game was conducted with the use of visual cues. **Figure 2** illustrates samples of graphical representations used in the experiment.

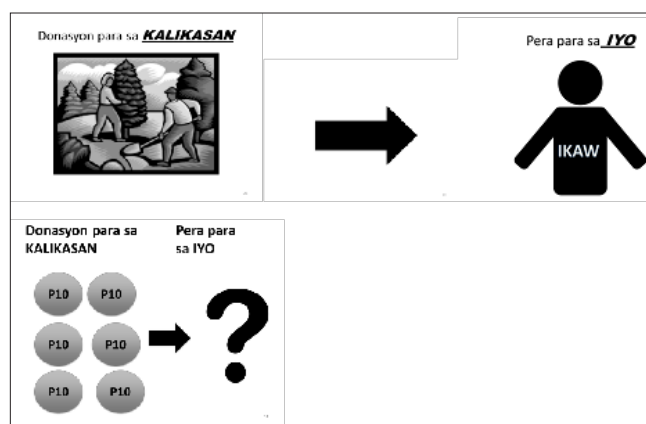


Figure 2. Example of visual aids for the game, take treatment (Note: Visual aids were accompanied by verbal explanations by Filipino enumerators).

RESULTS AND DISCUSSION

Discussed below are the giving behavior of respondents and socioeconomic characteristics that may have affected their willingness to donate to forest conservation efforts.

Aggregate effect of framing on environmental altruism

Table 1 shows the socio-demographic characteristics of the respondents. The mean age of the respondents was 42 years of age with a deviation of 13 years. The female respondents accounted for a little over half of the respondents. The average monthly household income was PHP 2,000.

Focusing on Part 1 of the experiment, **Table 2** shows the average amount allocated for the reforestation project for aggregated data by treatment (GG and TG). Out of the

highest possible donation of PHP 60, looking at overall data, an average of PHP 37 and PHP 53 were allocated for the reforestation project in the GG and TG, respectively. A Mann-Whitney test shows a significant difference in the final amount allocated for the reforestation project between the GG and the TG. Dictators allocated more for the reforestation project in the TG than in the GG.

Table 1. Socio-demographic characteristics of respondents.

	n (%)	Mean (Standard error)	Range
Ethnicity			
<i>Tagalog</i>	32 (50%)		
<i>Mangyan</i>	32 (50%)		
Age (years)		41.8750 (13.3196)	19–71
Gender			
Male	31 (48.4375%)		
Female	33 (51.5625%)		
Monthly household income (PHP)		2,010.1563 (2,045.17267)	0–10,000

Note: N= 64

Table 2. Average allocation for the reforestation project in Part 1.

	GG (Standard error)	TG	Mann-Whitney (GG vs. TG)
All observations	37.1875 (19.5488)	52.5000 (13.4404)	21.5625*** (18.1587)
<i>Tagalog</i>	41.8750 (22.2767)	51.2500 (12.5831)	18.1250 (18.6971)
<i>Mangyan</i>	32.5000 (15.7056)	53.7500 (14.5488)	26.2500*** (15.8640)
Mann-Whitney (<i>Tagalog</i> vs. <i>Mangyan</i>)	23.1250 (19.2246)	11.2500 (15.4380)	—

Note: Standard errors in parentheses. ***, **, * indicates significance at the 1%, 5%, and 10% level.

These actions were also investigated across ethnicity. *Tagalog* dictators, on average, allocated PHP 42 in the GG and PHP 51 in the TG, but there was no significant difference between the two frames. However, the average allocation by *Mangyan* dictators is PHP 33 in the GG and PHP 54 in the TG, and the difference is significant. *Mangyans* were more altruistic in the TG than in the GG. They were more reluctant to take away money initially intended for the project than not to donate money given to them. Again, for the *Tagalogs*, this was not the case.

For Part 2 of the game, **Table 3** summarizes the responses of the dictators when they were given information about a hypothetical partner. It reflects similar observations as in Part 1. Respondents were more likely to donate towards reforestation in the taking game than the giving game. The ethnicity of the hypothetical partner was found to be insignificant in the decision-making process.

Table 3. Average allocation for the reforestation project with a hypothetical partner.

All observations	GG	TG	Mann-Whitney (GG vs. TG)
Same-ethnicity	35.0000 (19.3218)	51.8750 (12.7639)	23.1250*** (17.4045)
Other-ethnicity	29.3750 (20.8066)	45.0000 (20.3306)	26.8750** (21.8232)
Mann-Whitney (Same- vs. Other-ethnicity)	18.1250 (16.0078)	20.6250 (17.3085)	—

Note: Standard errors in parentheses. ***, **, * indicates significance at the 1%, 5%, and 10% level.

These results were deconstructed further by running the *Tagalog* and the *Mangyan* analysis separately. In **Table 4** shows there was no significant difference for the *Tagalog* dictators regarding the GG and the TG. The average and the standard deviation of the allocation for the reforestation project of the *Mangyan* dictators are listed in **Table 5**. As shown in **Table 2**, the *Mangyans* in the GG allocated much less for the reforestation project than the TG amount. The *Mangyans* were more altruistic in the TG than in the GG. The average difference between the GG and the TG was highly significant at 1% level. Same and other-ethnicity information did not significantly affect the behavior of *Tagalogs* and *Mangyans*.

Table 4. Average allocation for the reforestation project of the *Tagalog* in Part 2.

All observations	GG	TG	Mann-Whitney (GG vs. TG)
Same-ethnicity	41.2500 (21.0017)	50.0000 (14.1421)	21.2500 (14.5774)
Other-ethnicity	28.7500 (26.9590)	35.0000 (23.2993)	41.2500 (19.5941)
Mann-Whitney (Same- vs. Other-ethnicity)	22.5000 (18.3225)	20.0000 (18.5164)	—

Note: Standard errors in parentheses. ***, **, * indicates significance at the 1%, 5%, and 10% level.

Table 5. Average allocation for the reforestation project of the *Mangyan* in Part 2.

	GG	TG	Mann-Whitney (GG vs. TG)
Same-ethnicity	28.7500 (16.4208)	51.2500 (18.0772)	27.5000*** (18.3225)
Other-ethnicity	30.0000 (14.1421)	55.0000 (10.6904)	27.5000*** (15.8114)
Mann-Whitney (Same- vs. Other-ethnicity)	13.7500 (13.0247)	11.2500 (18.8509)	—

Note: Standard errors in parentheses. ***, **, * indicates significance at the 1%, 5%, and 10% level.

In summary, the mean allocation for the reforestation project was not equal in both GG and TG. Respondents were more likely to be more altruistic when questions were framed as “giving to reforestation.” However, these observations were more significant among the *Mangyans* than the *Tagalogs*.

Determinants of environmental altruism

Ordinal logistic regressions were run to understand further the effect of how the game was framed—whether the respondent was giving to the reforestation project or taking from it—to understand further the effect of the game. The study analyzed the relationship between the amount allocated for the reforestation project and several factors such as the framing dummy (GG = 0, TG = 1); ethnicity dummy (*Tagalog* = 0, *Mangyan* = 1); partner’s ethnicity dummy (*Tagalog* = 0; *Mangyan* = 1); gender (male = 0, female = 1); age; and monthly household income. For the dependent variable, the respondents were allowed to allocate amounts in increments of 10. The allocated amount was treated as ordinal data to ensure an unbiased analysis and coded as a certain rank.

Allocated PHP 60 for the reforestation project = 6
 Allocated PHP 50 for the reforestation project = 5
 Allocated PHP 40 for the reforestation project = 4
 Allocated PHP 30 for the reforestation project = 3
 Allocated PHP 20 for the reforestation project = 2
 Allocated PHP 10 for the reforestation project = 1
 Allocated nothing for the reforestation project = 0

When there was no hypothetical partner, framing, ethnicity, age, and the interaction term for frame and ethnicity were significant (**Table 6**). Since the interaction variable of framing and ethnicity was significant, the highest amount allocated for the reforestation project is in the TG with a *Mangyan* dictator. The money allocated will be the least in the GG with a *Tagalog* dictator. Furthermore, the amount allocated for the reforestation project was negatively affected by age. A younger dictator allocated a higher amount for the reforestation project than an older dictator.

Table 6. Ordinal logistic regression of amount allocated for the reforestation project in Part 1.

Regressor	Coefficient	Standard error	P-Value
Framing (GG = 0, TG = 1)	1.0337	0.4672	0.0269
Ethnicity (<i>Tagalog</i> = 0, <i>Mangyan</i> = 1)	-1.1823	0.5916	0.0457
Gender (male = 0, female = 1)	-0.3637	0.5217	0.4857
Age	-0.0360	0.0148	0.0152
Monthly household income	0.0001	0.0002	0.6033
Ethnicity × Monthly household income	0.0001	0.0005	0.0000
Framing × Ethnicity	1.7547	0.3256	0.8160

Note: N= 64. *Tagalog* and *Mangyan*.

In **Tables 7 and 8**, where respondents were given hypothetical information in Part 2, the framing, partner's ethnicity, age, and the interaction of framing and ethnicity were significant. The amount allocated for the reforestation project was positively affected by framing and its interaction with ethnicity, but it was negatively affected by age. The negative value of the interaction of the framing and the hypothetical partner's ethnicity was also significant for both regressions. However, the coefficient of the interaction of framing and ethnicity was larger than that of framing and partner's ethnicity. The former cancels out the latter.

Table 7. Ordinal regression of amount allocated for the reforestation project by a *Tagalog* dictator with a hypothetical partner.

Regressor	Coefficient	Standard error	P-value
Framing (GG = 0, TG = 1)	0.8461	0.5652	0.1344
Partner's ethnicity (<i>Tagalog</i> = 0, <i>Mangyan</i> = 1)	-1.6030	0.5352	0.0027
Gender (male = 0, female = 1)	-0.1829	0.4867	0.7071
Age	-0.0564	0.0180	0.0017
Monthly household income	-0.0002	0.0003	0.5423
Framing × Partner's Ethnicity	2.6315	0.2824	0.0000

Note: N= 32.

Table 8. Ordinal regression of amount allocated for the reforestation project by a *Mangyan* dictator with a hypothetical partner.

Regressor	Coefficient	Standard error	P-value
Framing (GG = 0, TG = 1)	3.3806	0.7312	0.0000
Partner's ethnicity (<i>Tagalog</i> = 0, <i>Mangyan</i> = 1)	-0.0118	0.7210	0.9869
Gender (male = 0, female = 1)	-0.4671	0.7562	0.5368
Age	-0.0094	0.0229	0.6818
Monthly household income	0.0001	0.0003	0.6468
Framing × Partner's Ethnicity	0.3382	0.4923	0.4921

Note: N= 32.

In summary, the *Mangyan* dictators exhibited more altruism than the *Tagalog* dictators. Possibly, the *Mangyan* dictators were affected by how the game was framed because of their occupation. The *Mangyan* dictators are farmers and constantly in contact with the core of the environmental issue, the forest. They could be less inclined to take money from a reforestation project, believing that this action directly opposes their livelihood. A reforestation project can advance the farmers' livelihood, so taking away money for reforestation is stalling progress. Since the *Mangyans* are farmers, they may believe that donating money for the reforestation project might improve the environment and, in extension, their crop yields which are the main income source.

Lastly, analyzes in **Tables 9 and 10** measured the effects of in-group and out-group dynamics by making the dependent variable the difference between the amount allocated for the reforestation project for Parts 1 and 2 of the game—with and without a hypothetical partner. Experimental literature on social identity (Jones & Rachlin 2006; Leider *et al.* 2009; Goeree *et al.* 2009) often characterizes it as an individual's sense of self and perceived membership in a certain group. It affects how individuals make certain decisions. An individual perceives himself or herself as part of an in-group while the opposite is an out-group (Abram & Hogg 2010). In the theoretical model of Akerlof & Kranton (2000), it was noted that individual utility is positively associated with one's in-group welfare. They are more likely to share a public good with their in-group than outsiders. Chen & Li (2009) observed that, in general, individuals who perceive themselves to be part of a group put more weight on the groups' welfare. However, when there is insufficient competition among groups, they may avoid decisions that actively harm other groups (Cappelen *et al.* 2013).

In **Tables 9 and 10**, for male *Tagalog* dictators, the difference between the amounts allocated in the two parts was greater than that of female *Tagalog* dictators. The same is true for the male *Mangyan* dictators. Furthermore, the difference was also greater when the *Mangyan* dictator was younger. For older *Mangyan* dictators, the difference between the amount allocated with and without a hypothetical partner was less than the younger *Mangyan* dictators. Household income was not significant in the regressions. The hypothetical partner's ethnicity did not yield a significant coefficient in any final regressions, implying that out-group dynamics were good. There was no indication of out-group hostility wherein dictators would indirectly compete with outgroup members. However, there was no foreseen in-group affection since the dictators were not affected by the hypothetical partner's ethnicity, may it be a member of the group or not. The two ethnicities' behavior was neutral with each other.

Table 9. Changes in the amount allocated for the reforestation project.

Regressor	Coefficient	Standard error	P-value
Partner's ethnicity (<i>Tagalog</i> = 0, <i>Mangyan</i> = 1)	0.6498	0.6665	0.3296
Gender (male = 0, female = 1)	-1.0505	0.4754	0.0271
Age	0.0003	0.0167	0.9859
Monthly household income	0.0002	0.0003	0.3619

Note: N= 32. Parts 1 and 2, *Tagalog* only.

Table 10. Changes in the amount allocated for the reforestation project.

Regressor	Coefficient	Standard error	P-value
Partner's ethnicity (<i>Tagalog</i> = 0, <i>Mangyan</i> = 1)	-0.5826	0.6507	0.3706
Gender (male = 0, female = 1)	-1.6921	0.5021	0.0008
Age	-0.1045	0.0324	0.0013
Monthly household income	0.0003	0.0004	0.4725

Note: N=32. Parts 1 and 2, *Mangyan* only

Overall, results show that wording matters when it comes to forest conservation projects. In the GG treatment, people were less inclined to deal with environmental issues individually. They are the main decision-makers in the game setup and thus, feel greater entitlement to keep the money for themselves. This might be due to poverty, especially with the *Mangyans*, when provided additional endowments. There is a bigger burden to efficiently allocate funds, given that they

have low resources in real life. In contrast, the TG treatment has made allocations to the environment. Respondents are more likely to donate because they have fewer claims on the money. Entitlements on the money are given to the public good.

Another possible explanation for differences in behavior in the framing is that, in the TG treatment, respondents see the money they make as a personal gain. For the GG treatment, the money they give away is lost. People might be reluctant to donate in the GG treatment as they perceive losses as undesirable. They are more generous in the TG treatment because even a small amount of money they take for themselves is a gain.

Finally, it was noted that ethnic differences in behavior matter. It may better explain of the trade-off between poverty and environmental gains. Because *Mangyans* can be perceived to have higher "environmental" stakes, they might be observed as facing a bigger burden. In return, *Mangyans* may perceive that *Tagalogs* may care less about the environment.

CONCLUSIONS

Stakeholders play an important role in the success or failure of environmental conservation policies. It is important to understand their preferences, *i.e.*, people's trade-off between economic gains and environmental concerns. Through an experiment, willingness to donate towards the environmental project was measured. A giving and taking frame was employed, and the amount allocated for the reforestation project was compared between these two frames. These results affirmed the observations of Ellingsen *et al.* (2012) and Brañas-Garza *et al.* (2010), wherein framing was a significant factor in influencing an individual's altruism. Upon further decomposition, the framing effect was isolated to the *Mangyans*. This shows they were reluctant to take the money allotted for the reforestation project. With disaggregated regressions for the *Tagalogs* and the *Mangyans*, the *Mangyan* male dictators gave more than the female counterparts in scenarios without a partner. The significance of gender coincides with Kettner & Ceccato's (2014) study. However, Kettner & Ceccato (2014) found the women generous. This is different where in Part 1 of the game, *Mangyan* male dictators were more generous. An interesting result was that monthly household income did not turn out to be significant. A possible reason is that the dictators explicitly said that the money they would give or take in both framings was not earned. They did not have to work for the money they would give or take (Cappelen *et al.* 2013). Therefore, they did not think their money could be used for other household responsibilities. Instead, it was the money of someone else given to them when they did nothing

to earn it. Lastly, group dynamics between the *Tagalogs* and the *Mangyans* were not a factor that could prevent them from being altruistic toward the reforestation project.

This paper shows that individuals affected by environmental issues are willing to cooperate towards a worthy cause concerning trade-offs between ecological-economic policies. Framing affects behavior, so the role of entitlements is important. Policymakers should carefully design the wording of donations towards environmental projects matters. For future work, this research can be extended by considering the larger scope of the samples and measuring the altruistic environmental behavior of other ethnic groups. There can also be variations in the environmental project. What happens if the recipient is a water conservation or recycling project instead of reforestation? Another extension is the role of stake size. Will donations to environmental projects decrease in value if the money involved is twice or ten times higher? Will the framing effect persist if larger monetary amounts are given to respondents? These are part of the authors' future agenda.

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